

ESPON QoL – Quality of Life Measurements and Methodology

Annex 4 to the Final Report
Case study: Vienna

Applied Research

Final Report

30th October 2020

Final Report

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Annex 4 to the Final Report

Case Study 01:

Vienna

ESPON QoL – Quality of Life
Measurements and Methodology

30th October 2020

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This document is an Annex to the Final Report.

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The final version of the report will be published as soon as approved.

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Abbreviations

FUA	Functional Urban Area
GDPR	General Data Protection Regulation
IFES	Institut für Empirische Sozialforschung GmbH
LC	Latent Cluster
MA 18	Municipal Department of Urban Planning
QoL	Quality of Life
STEP	Stadtentwicklungsplan/Urban Development Plan
SDG	Sustainable Development Goals
TQoL	Territorial Quality of Life

Introduction

This is one of the 10 case studies of the ESPON study “Quality of Life Measurements and Methodology”. The purpose and results of the study, including the definition and application of a territorial quality of life measurement methodology, the synthesis of all case study findings, targeted policy recommendations, ideas for fostering cooperation between ESPON, EUROSTAT, OECD and the UN and recommendations for further research, are illustrated in the Final Report, to which this case study report is annexed.

The purpose of the case studies is twofold:

- A) to collect good practices that can be adopted in other European regions, and
- B) to make use of the methodology developed and allow for adjustments through testing in case studies.

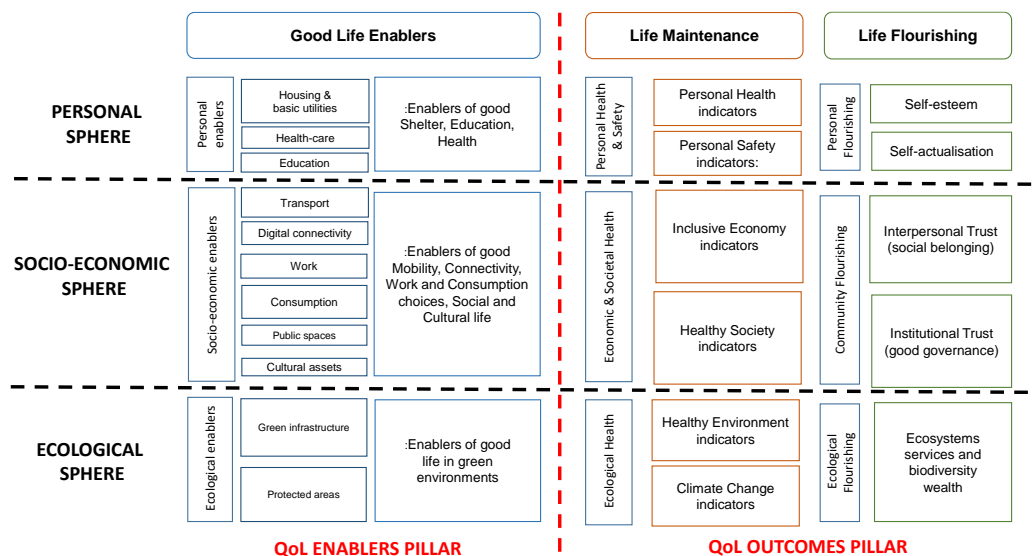
Each case study provides examples of application of the concept of quality of life (QoL) in a specific region. This complements the conceptual model and the research done at European level. The reasons why this region has been chosen forms part of Section 1.

For objective A) the case study report explores the policy context, in which QoL is used and measured in the region (Section 2). It is important to understand for which purpose the concept has been established, in which policy fields it is being used, how different levels of government are involved and which success factors and obstacles can be identified. Section 3 explains the indicators, measurement methods and data that are used for measuring QoL.

Objective B) is covered in Section 4. The study defines and tests a methodology to measure QoL at territorial (sub-national) level and offers guidance to policy makers at different levels – local, regional, national, European – on how to integrate QoL in policy processes and in territorial development strategies. We have applied to the case studies the methodology developed in the main report. This includes the Territorial Quality of Life (TQoL) measurement system and the system for coding indicators.

The TQoL framework defines the system and its main elements (pillars, spheres, sub-domains) to measure QoL facets with reference to territorial entities identified. This is shown in the TQoL framework in figure 1 below.

Figure 1 The TQoL framework



The system for **coding indicators** to represent and monitor adequately the different QoL domains, defined in the TQoL framework, is illustrated in Table 1 below.

Table 1 Coding of the indicator system in the TQoL framework

Dimension	Domain	Sub-domain	Definition
Good Life Enablers	Personal enablers	Housing & basic utilities	
		Health	
		Education	
	Socioeconomic enablers	Transport	
		ICT connectivity	
		Work opportunities	
		Consumption opportunities	
		Public spaces	
	Ecological enablers	Cultural Assets	
		Green infrastructure	
Life Maintenance	Personal Health and Safety	Protected areas	
		Personal health indicators	
	Economic and Societal Health	Personal safety indicators	
		Inclusive economy indicators	
	Ecological Health	Healthy Society indicators	
		Healthy Environment indicators	
		Climate change indicators	
Life Flourishing	Personal Flourishing	Self-esteem	
		Self-actualization	
	Community Flourishing	Interpersonal Trust (Social Belonging)	
		Institutional Trust (good governance)	
	Ecological Flourishing	Ecosystems services and biodiversity wealth	

Both, the TQoL framework and the coding system are applied in all case studies (Sections 4.1 and 4.2).

The methodology developed in this report includes further elements - a dashboard, the latent clustering approach and the citizen-centric approach - that are applied in the case studies, if sufficient data or information have been available. These elements are as follows:

- The indicators coded for local or sub-regional territorial units are presented in a **dashboard** (in an Excel-based tool). In the dashboard different points in time or objective and subjective indicators can be included and compared at territorial unit level. The specific indicators used to monitor the QoL domains are different in each case, as they take into account specific local circumstances that influence the selection of indicators (e.g. availability of data, local priorities and practices).
- In the case studies that cover a large number of territorial units the **Latent Class clustering model** helps to analyse underlying patterns and spatial differences of territorial QoL. However, the number of case studies falling in this category is small.
- A descriptive element of the TQoL approach identified in this applied-research project is the “**citizen-centric**” **approach**, where citizens are engaged in co-design, implementation and fact-checking activities (“factfulness” tests), to make the measurement of territorial QoL more responsive to the needs and aspirations of citizens to improve their everyday life. This can be promoted, recommended, and applied within the different case study contexts highlighting in particular any existing local practice of citizen engagement that could be adopted as a concrete example of the approach.

These methodological elements are considered in the case studies which were carried out to investigate and compare noteworthy experiences of territorial QoL measurements against the TQoL framework that has been developed with the aim of drawing lessons for further adjusting and fine tuning the methodology, which will eventually allow for its practical and widespread use for measuring QoL across territories in Europe.

1 Description of the region

Vienna has the reputation of being one of the world's best cities to live in. In 2019, for the 10th consecutive time, Vienna has ranked first in the Mercer Quality of Living Survey. However, Mercer is not the only ranking, where Vienna serves as the leader or a frontrunner. Vienna also ranked first in the Smart City Strategy index 2019 (out of 153 cases, by Roland Berger), and in the Global Liveability Ranking 2018 (by the Economist). The main reasons – and features of the city – are a well-functioning infrastructure that serves all parts of the city, reliable public transportation, very good infrastructure and health care, a large variety of cultural activities, high level of safety across most parts of the city and good housing and environmental quality.

The city administration actively engages in measuring and monitoring Quality of Life through dedicated surveys since the 1990s, generating a long time series. This practice seems to be unique among cities in Europe. Whenever it is talked about this long-term study, it is referred to as “Wiener Lebensqualitätsstudien”.

1.1 Characteristics of the region

Vienna is the capital of Austria, with 1.9 Million inhabitants.¹ Located on the river Danube, in the region bordering with Slovakia and the Czech Republic, Vienna has faced an overall slower development in the last decades, compared to many other European capitals. The basis for the high quality of life is rooted in the 19th century, where first, the spatial transformation of the city was conducted in a way to maintain large green spaces and also the threat of flooding was minimised with a comprehensive protection system. At the beginning of the 20th century, Vienna was a fast-growing city due to changes in economic structure and due to immigration from different states within the monarchy. Thus, infrastructure was built to cater for a city growing much beyond the two million inhabitants that Vienna had in 1910.² After the two world wars and the collateral political changes, Vienna faced a rather rapid decline of its population. The total population stagnated around 1.6 to 1.7 million inhabitants from the early 1950s to the early years of the 21st century. During these decades, the city benefited significantly from investments and urban planning of the past.

Since the turn of the century, Vienna is back on a growth path – mostly due to immigration from foreign countries and from the federal states. Thus, the pressure on infrastructure, environment, housing, social systems and public services in general is increasing. Concerns about keeping a good quality of life in a city that is growing again, probably led to monitoring, evaluating and enforcing planning strategies that include quality of life considerations.

Today, Vienna is not only Austria's capital, but also a state with a state-government and at the same time a municipality with 23 districts, each with their own local government. The statistical unit is NUTS 2 (AT 13) as well as NUTS 3 (AT 130), with 23 districts.³ The city had almost 1.9 million inhabitants in 2019 and has an area of 415 km².⁴ The functional region of Vienna has 2.66 million inhabitants, a size of 5 900 km², 211 local authorities (LAU)⁵ and extends almost

¹ Statistik Austria, Bevölkerungsstand, Reporting date 1.1.2019, <https://www.wien.gv.at/statistik/bevoelkerung/tabellen/bevoelkerung-bez-zr.html>

² At that time Vienna was the fourth city in the world to exceed the number of 2 million inhabitants, after New York, London and Paris. Between 1900 and 1916 Vienna grew from one million to 2,2 million inhabitants, due to immigration.

³ Statistik Austria, Geoinformation, Map of Vienna (see Annex Figure 36 Map of Vienna), https://www.statistik.at/atlas/?mapid=topo_regionale_gliederung_oesterreich&layerid=layer2&sublayerid=sublayer0&languageid=0&bbox=1784718,6123226,1856622,6162816,11.836666666666664

⁴ Statistik Austria, Gliederung Österreichs in NUTS-Einheiten Gebietsstand 1.1.2019, https://www.statistik.at/wcm/idc/idcplg?IdcService=GET_PDF_FILE&RevisionSelectionMethod=LatestReleased&dDocName=023722, (see Annex)

⁵ <https://www.stadtregionen.at/wien>

to the Slovak border, with Bratislava in close vicinity. Administrative borders matter in policymaking, especially on land use, transport and environment. The two states (Bundesländer), Vienna and surrounding Lower Austria (Niederösterreich), need to coordinate their political agendas and policy strategies, while aligning a high number of local authorities. In the federal system, these bodies all have legislative and executive powers. In addition, the Czech and Slovak Republics as well as Hungary are within 60 km distance and have very different constitutional systems.

From an economic point of view, Vienna has the second-highest GDP/capita⁶ out of the nine Austrian NUTS1 regions (but compared to the other regions a low growth rate). It has a strong service-driven economy with over 200 headquarters of multinational corporations.⁷ Furthermore, Vienna has more than a dozen universities and is strong in RTD activities. All this emphasises the political interest of keeping the general quality of life as high as possible, not only to keep Vienna as a good place to live for the current residents, but also to be attractive to foreign workers in research, management and international organisations.

1.2 Rationale for selecting the case study

Vienna is a very good case for studying quality of life, as it is a city with an excellent rating in quality of life. The city administration actively engages in monitoring quality of life through dedicated annual surveys since the 1990s, which seems to be unique among cities in Europe. As the surveys are spatially representative, QoL is periodically analysed at territorial level as well. The department for urban planning coordinates the comprehensive monitoring which is used for a more detailed analysis of specific parts of the city (e.g. newly built-up areas, specific policy fields) and for implementing a number of policy fields, mainly in the Urban Development Concept (STEP 2025) and in the Smart City Strategy – both with annual monitoring. A specific monitoring has been installed for gender equality, which focuses on quality of life for women and for health issues (concept of the healthy city). In addition, an initiative on the “happy city” which is based on a Canadian concept for urban planning, design and architecture using the science of wellbeing to create healthier, happier and more inclusive communities has been initiated. Thus, Vienna offers a comprehensive approach towards quality of life, which is based on thorough monitoring.

⁶ € 49.500 per capita in €, data extracted 10.12.2019, https://www.statistik.at/atlas/?mapid=them_reggesrechnung_brp&layerid=layer1&sublayerid=sublayer0&languageid=0&bbox=1757352,6105745,1885766,6176449,11

⁷ European Commission, Internal Market, Industry, Entrepreneurship and SME , Regional Innovation Monitor Plus, Vienna, <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/vienna>

2 Policy context

Quality of Life is an issue in which the city administration has been actively engaged since 1995. Since then periodic surveys, that are (to some extent) coherent, have been commissioned. The coordinating unit of the urban planning department is in charge of the surveys, scientific research, analysis and reporting⁸. They offer the results to other departments, which use it for various purposes – from monitoring to the backing of policy decisions (ex-ante and ex-post). The results are used by the urban planning department and by other departments of the city administration for a detailed analysis and monitoring of specific territories of the city (e.g. newly built neighbourhoods) or for assessing the impact of specific policy actions on territories (e.g.: parking space management) or on certain groups of residents (e.g. women). Overall, there seems to be an integrated approach to using this data for policies related to urban and societal development.

For our research, we have been studying the municipal reports available on Quality of Life (see literature list), held interviews with the unit of the urban planning department that is responsible for the surveys and the presentation of the material and with actors who use the Quality of Life data and outcomes of their analyses. The approach and the data used for measuring the QoL in Vienna have been analysed, as well as some concepts that actually work with the QoL data, i.e.

- Urban Development Plan (STEP 2025)⁹ and corresponding thematic concepts
- Smart City Strategy
- Gender Equality Monitoring

In order to test our approach, the urban planning department provided us with the raw data of the surveys.¹⁰ We converted them so that we could use them for the dashboard in order to test the approach. We also undertook a small survey to test the framework in a so called factfulness test.

2.1 Outline of the Quality of Life concept

The Vienna approach towards Quality of Life is characterised by a high level of continuity and, to some extent, comparability. The first survey was held in 1995 and since then there have been periodic follow-ups – with scientific and empirical improvements implemented. Still, the system has grown over time, mainly shaped by the experience gained. The focus is on the representativeness of the results (partly at the district level and partly for specific groups of the population) and the comparability of the results over time.

Quality of life is measured by a set of indicators in different domains, such as education, housing, mobility or public services. Each of the surveys had a focus on a specific topic, such as “work and the reconciliation of work and family life” in 2013.

The overall aim is to gain information on the interviewees’ individual and subjective assessment of a number of domains, using the local school grading system (1 = outstanding to 5 = not sufficient). Interviewees are not only asked about their individual satisfaction with different topics related to QoL, but rather about a general but subjective assessment of the situation in

⁸ It is financed with the budget of all the municipal departments, calculated according to a specific calculation key. This mainly has the advantage of the internal usability of the collected data for all municipal departments.

⁹ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2014, STEP 2025 – Urban Development Plan Vienna.

¹⁰ In this context we want to thank Mr. Troger from MA 18 who was very helpful in providing the data set and help with explanations related to the different surveys.

the given local context. The result is supposed to reflect the “image” of Vienna amongst its residents. A detailed explanation about indicators and measurements is provided in section 3.1.

The Quality of Life concept is used by the Department of Urban Planning for preparing and analysing policy decisions (e.g. parking management in several parts of the city). Indicators gained from the survey are also integrated in other policy fields, like the monitoring of the Smart City Strategy and the Gender Equality Monitoring.

Table 2 Overview of policy context in Vienna

Actor/institution	Policy context	Description of indicators and data used	Activities and processes
City of Vienna, Department of Urban Planning (MA 18) ¹¹	Monitoring of QoL	Surveys conducted every few years	Coordination with other policy units for further developing the survey
Department of Urban Planning (MA 18)	Smart City Framework Strategy (2014 & 2019)	Monitoring system & indicators are defined corresponding to the three target goals and their 12 domains	Results are analysed and strategy adopted eventually
Department of Urban Planning (MA 18), as originator	Urban development plan 2025 (STEP 2025)	No indicators are used in STEP, target goals and indicators are laid out in respective sectoral concepts	STEP is a framework strategy that provides a multifaceted overview of measures to steer Vienna’s future development; highlights key fields of action, such as housing, green and open spaces, economy, or infrastructure.
Municipal Department for Women’s Services (MA 57)	Gender Equality Monitoring	Monitoring of gender equality in 12 domains, 123 indicators	Monitoring and coordination with other policy units

2.2 Evolution of the Quality of Life approach

The first survey on Quality of Life in Vienna that was held in 1995 by the city administration was planned to be a continuous study accompanying urban and regional development.¹² The aim of the survey was to gain information on the subjective level of Quality of Life. The surveys were replicated in 2003, 2008, 2013 and 2018. The most recent took place in 2018, where the first results were published in 2019, the full report and underlying data followed in July 2020.¹³

Quality of life is surveyed via questionnaires by making use of subjective and objective indicators. There was no specific theoretical concept and methodological framework applied in the first place. Since 2003, the Municipal Department 18 (MA18) - Urban Development and

¹¹ Municipal Department of Urban Planning, MA German abbreviation for municipal department

¹² Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2007, *Leben und Lebensqualität in Wien, Kommentierte Ergebnisse und Sonderauswertungen der Großstudien „Leben in Wien“ und „Leben und Lebensqualität in Wien“*

¹³ Verwiebe et. al., 2020, *Forschungskooperation Universität Wien & MA 18 Stadtentwicklung und Stadtplanung & IFES, Sozialwissenschaftliche Grundlagenforschung für Wien III - Lebensqualität in einer wachsenden Stadt, Endbericht,*

Planning coordinates the survey. Since 2008 the city of Vienna enhanced the survey with a scientific approach (this took the form of a research cooperation with the University of Vienna). Since the same year, the Institute of Empirical Social Research (IFES, an opinion research institute), in collaboration with the University of Vienna, performs data collection.

The survey was originally designed as a tool to support urban planning. Over time, the results are increasingly used for an evidence-based decision-making in urban planning and for sectoral policies outside the planning group.¹⁴

Comparability over time is one of the most valuable assets. The time series capture changes in living and working conditions, as well as in perception of the built environment and of liveability of the residential area. Of particular interest are local variations over time. The outcome of this juxtaposition is the empirical foundation for inter-divisional and evidence-based decision making in urban politics and administration.

Though the surveys are largely comparable, there are gaps and changes towards the 1995-results, particularly due to the change of interview method.¹⁵ The comparability is higher since IFES has taken over the surveys in 2008. As the focus has changed from time to time, the questions have been modified and adapted from one survey to the next. Within the recurring questions, mostly wording was improved or adopted and questions split into multiple questions to create more depth. Furthermore, questions were added, enabling the specific focus on certain fields of interest. Additionally, some questions were dropped over the years, since they seemed to be less interesting due to societal trends.

The biggest change in the design of the survey was in 2008, when an institute for opinion research was commissioned with the data collection. Since then more spheres of life, domains and sub-domains have been included.¹⁶ In 2018, digital innovations and the use of the internet were added to the survey.

2.3 Governance levels and the use of Quality of Life in a policy context

The department of urban planning is responsible for the surveys, analysis and dissemination. Other departments are invited to add questions to the survey and also use the results. Financing is split amongst all departments of the municipality. Hence, the ownership of the data lies within the entire municipality, which allows for the use of the collected data within all departments for multiple purposes.¹⁷ The Quality of Life surveys are the most important data source after Micro-census.¹⁸

The overall concept and commissioning of the studies lies with the horizontal planning department, the implementation is by IFES and the University of Vienna. Other departments of the city administration are involved with the preparation of each survey in order to identify and fill data gaps.

¹⁴ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2007, *Leben und Lebensqualität in Wien, Kommentierte Ergebnisse und Sonderauswertungen der Großstudien „Leben in Wien“ und „Leben und Lebensqualität in Wien“*

¹⁵ The interview method changed from face-to-face (1995) to telephone interview and CATI supported telephone interviews (2018)

¹⁶ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2009, *Werkstattbericht 102, Wiener Lebensqualitätsstudien - Sozialwissenschaftliche Grundlagenforschung für Wien 2008 - Zusammenfassender Bericht*

¹⁷ Interview Tobias Troger and Johannes Gielge, 25.02.2020

¹⁸ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2015, *Werkstattbericht 147, Lebensqualität in Wien 1995-2013*

The raw data is publicly available after a certain vesting period and after signing a cooperation agreement with the municipality, agreeing to make the outcome of the research available to the municipality. Data and results of the studies are used for policy assessment, for confirming or rebutting assumptions or analyses of specific implementations at local level, such as the expansion of the underground metro system and the extension of the short-term parking zone or the private use of internet and the use of e-government systems. Analyses, evaluations and results concerning urban development and planning are published by the municipal departments dealing with urban research and development within so called “Werkstattberichte”.

2.3.1 The strategic urban development plan – STEP 2025

The Urban Development Plan (STEP 2025), which was developed as a follow up of STEP 2005 guides urban development in Vienna. STEP is a strategic framework serving as a guideline for policy makers and administration, to adjust planning and financial priorities related to urban development. STEP 2025 was developed in order to respond to the dynamic population growth and the challenges of social inclusion, development of specific localities and climate protection. The guiding principle is the “liveable, sustainable, affordable and prosperous city”. The progress and achievements according to these guidelines are monitored and evaluated and STEP is eventually updated and adjusted.

There are eight key topics addressed (see Annex: Table 8 Urban Development Plan – Topics), that include specific strategies and initiatives. For each of the topics, detailed concepts are elaborated, where a broad consensus among the departments of the city administration, major stakeholder and the public is sought. Quality of life is not directly addressed as a topic, but most of the topics relate to the spheres, domains and sub-domains of Quality of Life (also as outlined in our approach). The QoL surveys and studies support the various thematic concepts, feed in specific results, but are also used to cross-check the impact of specific actions.

2.3.2 Smart City Strategy Framework

In 2014 Vienna has launched the “Smart City Wien Framework Strategy” with an update in 2019. The planning horizon is until 2050. The new strategy is also based on the 17 Sustainable Development Goals (SDGs) set in the UN 2030 Agenda for Sustainable Development. For the progress of the implementation of the Smart City concept, a monitoring and reporting process was established, with a set of core indicators, target and policy indicators. To set up this monitoring system a research project has defined the process and elements of the monitoring system.¹⁹ A first monitoring report was published in 2018²⁰

The strategy aims at three interrelated domains:

- Quality of Life
- Resource conservation
- Innovation

The aim is to promote “social and technical innovation” in order to provide “high quality of life” for residents while “preserving resources”. The three major domains are split into 12 key objectives (energy supply, buildings, mobility and transport, economy and employment, water and waste management, environment, healthcare, social inclusion, education, science and research, digitalisation, participation). These are further split into 65 specific objectives with

¹⁹ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2016, SMART.MONITOR. Development of a monitoring concept for the Smart City Wien Framework Strategy.

²⁰ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2018, Werkstattbericht 177, Monitoringbericht 2017 - Smart City Wien Framework Strategy. <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008520.pdf>

detailed targets, which are monitored with a set of indicators.²¹ The data used to describe these, are from different sources, such as the statistical office “Statistik Austria”, different municipal and federal authorities, Urban Audit Perception Survey or the “Wiener Lebensqualitätsstudien”.²²

2.3.3 Gender Equality Monitoring

Vienna has developed a strategy to emphasise different living environments and realities of women and men and to support gender equality. As set out in the Smart City Strategy, a gender-specific equality of opportunities in planning and participation in decision processes is a core objective. In this context, the city of Vienna has implemented a “Gender Equality Monitoring”, which is embedded in the Municipal Department 57 – Promotion and Coordination of Women’s Issues. Systematic and continuous data monitoring is to draw attention to relevant developments in the gender equality process and sets the basis for necessary gender equality measures of the city. This shall foster the further development of specific actions for women to gradually eliminate the existing gender gaps in various life spheres.

The presumably uneven distribution of possibilities as well as de facto accessibility of different services and domains, between groups or residents, is evaluated and monitored within 12 selected thematic areas and based on 119 indicators (2013) and 123 indicators in 2016: women and men in Vienna, political participation, education and training, paid and unpaid work, leisure time and sports, art and media, income, poverty and social security, housing and public space, environment and mobility, violence, health.²³ Though differentiated by territories, we consider this application of the QoL survey very interesting due to the development process: working groups of researchers and gender experts established the 12 thematic areas on the basis of the relevance of equality issues for women and previously defined equality objectives, fighting discrimination of women. Indicators were designed to adequately describe the situation of women and men in those thematic areas, focusing on what needs to be measured. The gender equality monitor relies entirely on available data, such as data from the QoL surveys (where requests for questions that cover the specific gaps for gender equality monitoring are brought in) or data from the statistical offices of Austria and Vienna. No data are generated or collected for this monitoring specifically. Hence, indicator composition is limited in terms of availability of data and completeness of data in terms of emphasising gender and other social characteristics. This generates data gaps, as sometimes women’s realities cannot be described adequately. If gaps are identified, they are made visible and as a result made a subject of discussion for future development of data collection, with special regard to gender. Another limit of this monitor is that most of the data used is not available at the regional level of districts or lower. Therefore, the monitor operates at the level of the entire (NUTS 3) Vienna and is not able to display local disparities within Vienna.

Information gained from the monitor is reported back to local politics in order to inform policies. It is considered as feedback for a better understanding which parameters need to change within

²¹ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2019, Smart City Wien Framework Strategy 2019-2050, <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008551.pdf>

²² Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2019, Smart City Wien Framework Strategy 2019-2050, Preliminary Indicators for monitoring and evaluation, https://smartcity.wien.gv.at/site/files/2020/05/SCWR_Indikatoren-f%C3%BCr-Monitoring-und-Evaluierung.pdf

Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2014, Smart City Wien Framework Strategy, Indicators https://smartcity.wien.gv.at/site/files/2017/12/Ind_Quellen.pdf

²³ Vienna City Administration, Municipal Department 57 – Promotion and Coordination of Women’s Issues, 2018, 2nd Vienna Gender Equality Monitor 2016

the city in order to further develop gender equality aspects. Exchange of information and expertise takes place on federal and international level, for example within the “femcities network”.²⁴ The monitoring is replicated every three years.

2.4 Success factors and obstacles

Quality of life in Vienna has a long history, which has created a big data stock with time series. Though this is quite unique in QoL monitoring across Europe, comparability over time is still limited, since questions in the surveys were modified over the years and the interview method has also changed. It seems that the municipality of Vienna has a comprehensive approach towards steering Vienna’s development and aligning this with ideas of quality of life. Whilst there is no direct monitoring of quality of life within “Wiener Lebensqualitätsstudien”, specific life spheres are monitored in different contexts. Vienna seems to be quite confident in using the generated data multi-divisionally. Policies and masterplans elaborated within the city are constantly edited; their progress and development is monitored and evaluated in different domains and policy fields.

The major success factors and strengths can be summarised as follows:

- The responsibility within the department of urban planning and development acting as a coordinator of a multi-divisional data collection is the corner stone of the comprehensive use of the information collected. As a horizontal unit, the department makes the results available to all departments, with built-in feedback mechanism on information to be collected in the future. This creates a loop on the assessment of the factors relevant for measuring quality of life.
- Adopting and changing questions allow for closing data gaps and aligning the surveys to contemporary and local challenges.
- Within the municipality and involved actors, the long-term political commitment of measuring quality of life has led to a high degree of acceptance and a comprehensive understanding of quality of life being a key element for liveability and attractiveness of the city.
- The survey being replicated every five years produced a time series of Quality of Life data which allows for an analysis of changes over time in quality of life, and in particular aspects within policies, certain life spheres or the built environment.
- The overall representativeness at district level allows for exposure of disparities within the city.

Bottlenecks and potential difficulties can be summarised as following:

- There is no monitoring system set up and running to target particular goals concerning quality of life. The upside is that the quality of life unit focuses on data collection, interpretation and “the bigger picture”. The downside is that there is a gap between the detection of problems and the implementation of measures.
- The highly valued time series’ comparability is limited as there was no theoretical framework applied from the very beginning. Not only did the method of interview change, but as well, the design of the questions changed (e.g. wording, division in multiple questions) and additional spheres of life spheres were included (according to the feedback loop).

²⁴ Vienna City Administration, Municipal Department 57 – Promotion and Coordination of Women’s Issues, FemCities – networking for gender equality in European cities, <http://www.femcities.at/>

- Maintaining comparability over time also prevents any substantial changes (e.g. the application of a theoretical framework). The unit seems to be very well aware of weaknesses created by the lack of a theoretical framework.
- The assessment of quality of life is surveyed only within the political borders of Vienna, and not within the functional area of Vienna. A similar survey in lower Austria was planned for 2008, but never took place.
- As each of the surveys includes over 100 questions, a substantial amount of data are generated in each run. In order to save time, some questions are split or linked to each other.²⁵ This limits the representativeness of data at district level. The sample is still large enough for an assessment of the entire Vienna.

2.5 Achievements and further plans

After thirty years of quality of life assessment, the domain of quality of life has been integrated as a key element in different urban development strategies, such as the “Smart City Vienna Framework Strategy”. Efforts have been made into adapting policymaking and administrative processes fostering quality of life in the context of a growing city and according to gender disparities. Achievements are strongly tied to other urban development tools, which were put in place, and are visible particularly at the local level.

The time series allows for a general overview and trends of different life spheres tied to quality of life in Vienna. For example, an overall positive tendency of the satisfaction with Vienna, as a city to live in, was made visible over the last decades.

Further plans are difficult to pin down, as the municipality seems rather satisfied with the assessment of quality of life and the use of this data. As these surveys have proven to be a very valuable dataset in urban development, the municipality seems to be eager continuing with the status quo of maintaining and prolonging the time series, keeping the interdivisional feedback loop and closing data gaps.

²⁵ Split questions are only answered by approximately 50% of the interviewees. Causal questions are only asked to a certain group of interviewees, as questions are linked to one another, e.g. the satisfaction with one’s job can only be asked if the interviewee states to be employed.

3 Measuring Quality of Life

For the measurement of quality of life five surveys took place in total, in 1995, 2003, 2008, 2013 and 2018 with over 8 000 residents responding each time. Due to the number of participants, each of these surveys is largely spatially representative for each of the 23 districts. Though this is only true for most of the questions, quality of life can be analysed periodically at local level.

3.1 Indicators and measurement

The aforementioned time series currently consists of five runs. Unlike other quality of life assessments, “Wiener Lebensqualitätsstudien” does not rely on existing data, but collects its own data. For the assessment of quality of life, a combination of objective and subjective data²⁶ are collected via questionnaires. The sample consist of residents over 15 years-old and is large enough to be representative at a territorial level (for some indicators even for the 23 districts or “types of urban areas” (see Figure 4 Types of urban neighbourhoods (Stadtgebietstypen) 2008 & 2013, Map of Vienna (MA 18) in section 4 below) and for different social groups. Hence, most results are able to display territorial specificities or dynamics and differences between groups on a local scale. It is worthwhile to mention that the entire data set is derived from the surveys and no statistical data are included in the data set. The application of QoL in specific contexts (Smart City monitoring, Gender equality index, Werkstattberichte) uses a combination of data generated by other official statistics and the Vienna QoL survey data.

The following table provides an overview on the different studies of QoL over time.

Table 3 Wiener Lebensqualitätsstudien – Time Series

Title	Survey period	Sample	Special
Leben in Wien	July 1994 – October 1995	8 300 individuals; individuals living in Vienna and older than 15 years; face-to-face Interviews	400 individuals extra; Increase of sample size in URBAN-II- and in goal-2-area
Leben und Lebensqualität in Wien	May - October 2003	8 000 individuals; individuals living in Vienna and older than 15 years; telephone interviews; selected land-line and mobile connections; German language;	300 individuals extra; in Turkish and Bosnian/Croatian/Serbian language
Sozialwissenschaftliche Grundlagenforschung für Wien (2008)	May - December 2008	8 400 individuals; computer assisted telephone Interviews; German language; sampling procedure: random digital dialling including mobile numbers; disproportional sampling by district size ²⁷ ; weighting: district, age x gender, education	300 individuals extra; face-to-face Interviews; in interviewees mother tongue (Migrants from Turkey or former Yugoslavia)

²⁶ Data are only generated by surveys. Some of the questions are assessed lead to objective indicators, (e.g. the number of persons living in a household, monthly housing costs, net income), where most of the questions are questions on satisfaction, assessment of a specific situation, which we call “subjective”.

²⁷ In order to achieve results also form smaller districts

Title	Survey period	Sample	Special
Sozialwissen- schaftliche Grundlagen- forschung für Wien II (2013) Project title at Universität Wien: Lebensqualität in Wien im 21 Jahrhundert	October 2012 - July 2013	8 100 individuals; computer assisted telephone Interviews; German language; sampling procedure: random digit dialling including mobile numbers; disproportional sampling by district size; weighting: district, age x gender, education	300 individuals extra; CATI-Interviews; in interviewees mother tongue (Migrants from Turkey or former Yugoslavia)
Sozialwissen- schaftliche Grundlagen- forschung für Wien III (2018) Project title at Universität Wien: Lebensqualität in einer wachsenden Stadt	March – December 2018	8 450 individuals; mixed-mode survey: computer assisted telephone interviews (CATI) and telephone (77%); CAWI and online: 23%); weighting: post stratification-weighting: age x gender, education, district x age, district x gender, type of housing; design-weighting; Weighting for balancing change of interview modes	350 individuals extra; CATI-interviews; in interviewees mother tongue (Migrants from Turkey or former Yugoslavia)

Each run consists of approximately 120-140 questions in several different domains or life spheres, as shown in Table 4. Each domain is covered by relevant subjective and objective questions. For example, if asked about housing, an interviewee is asked to give objective information about their individual housing condition, such as type, size and cost of their housing. Objective information is supposed to reflect the current situation in Vienna. The evaluative measures for these questions are mostly integral numbers or given categories.

In contrast, questions asking about one's subjective assessment of certain life spheres on the one hand aim to reflect the "image" of Vienna amongst residents, and on the other hand the individual satisfaction with certain spheres of life. Asked about housing, one is asked to give a subjective evaluation of one's individual housing conditions such as value for money or satisfaction with size and location. The evaluative measure for these questions follows mostly the Austrian school grades system ("how satisfied are you"...on a scale 1 to 5), primarily because it is generally understood. Overall, the domains tackled in the different QoL studies have remained stable over time. The following table provides an overview of the main domains of the QoL studies. Sometimes the exact wording has changed, but overall, we can see a strong continuity.

Table 4 Domains used in the Studies of QoL in Vienna (Wiener Lebensqualitätsstudien) from 1995 to date

	1994/95	2003	2008	2013	2018
Statistical information	x	x	x	x	x
Housing & housing conditions	x	x	x	x	x
Quality of environment and amount of disturbances in residential area	x	x	x	x	x
Satisfaction with infrastructure and Quality of Life in residential area	x	x	x	x	x
Safety	x	x	x	x	x
Grocery shopping	x	x	x	x	
Participation in city politics	x	x	x		
Municipal facilities and services	x	x	x		
Family and social contacts	x	x	x	x	
Children and child care	x	x	x	x	x
Partnership and household	x	x	x	x	x
Care and services	x	x	x	x	x
Culture and leisure offers and activities	x	x	x	x	x
Sport activities	x	x	x	x	x
Mobility, traffic and use of transportation	x	x	x	x	x
Professional activity and employment situation	x	x	x	x	x
Secondary activity, retirement & job search				x	
Heating and energy	x				
Physical health	x	x	x	x	x
Mental health and stress		x	x	x	x
Urban development and quality of life	x	x			
Evaluation of Vienna and bond to city/district	x	x	x	x	x
Change of residence	x	x	x	x	
Economic situation	x	x	x	x	x
Migration	x	x	x	x	x
Life satisfaction		x	x	x	x
Language competencies				x	x
Participation and Religiosity				x	x
Internet and use of media					x
Life style					x

Source: Survey data of all five Wiener Lebensqualitätsstudien, see section 7.2 Lebensqualitätsstudien – survey data

These surveys allow for an analysis of the differences in QoL abovementioned sub-themes between types of territories and between points in time. The time series is seen as the major asset of this quality of life assessment, as it allows for the evaluation of long term trends. The comparability over time should be guaranteed by keeping the domains and questions similar. Nevertheless, they were adjusted, dropped or expanded over the years, as some were outdated, adjustments needed to be made to close data gaps or other topics came to the fore. However, this has led to the limitation of the comparability over time in some life spheres and of some descriptive variables. Others can only serve as snapshot for a certain domain. Analyses of different variables are possible at district level or territorial level “type of urban

area". Results are relative, must further be compared to other Viennese districts and, if possible, compared over time.

Given the number of domains and the extent of questions, a lot of time is needed to conduct even one interview. Hence, some of the questions were split amongst the participants (50% of the interviewees). Other questions are limited by filters, which allow them to be applied only to a certain group of interviewees (i.e. "overall satisfaction with the individual work life" can only be asked, if the interviewee states to be employed). These two factors reduce the size of the sample for some of the questions and domains and affect their representativeness at district level. However, the sample size in each of the surveys is generally large enough, so that some of the results are representative for the territorial units and others for Vienna.

During the first four runs, aggregation was based at either district level or types of urban area (see section 4.3.1). This aggregation was dropped for the 2018 survey and is now based on districts and lifestyle typologies. In 2018 questions were included allowing to categorise interviewees into typologies of lifestyle after Stelzer & Heyse. These describe the correlation of each individual biography and life style/living standard.²⁸ Life style does not describe the availability of resources, but rather the individual's attitude towards handling and value of resources. One's position in their individual biography is not measured by age, but by their judgment of their position. In combination, these two factors result in types of lifestyle, describing typologies of everyday life organisation. Certain life spheres are further investigated against these typologies, aiming to explain behaviour as for example in residents using public transportation.²⁹

3.2 Data sources for Quality of Life

As mentioned, Vienna is not relying on existing data, but collects its own data to measure quality of life, which later can be used by a variety of actors and for different purposes. The Quality of Life surveys themselves are the centre of data collection for any evaluation of quality of life in Vienna. However, the results are only later (i.e. within the "Werkstattberichte") or in policy context put into context with other data, such as the Urban Audit Perception Survey or other statistical data (i.e. Micro census).

Within the research reports for quality of life, Vienna is compared with other European cities. The Urban Audit Perception Surveys serve as an additional source, confirming Vienna's status in this field.

²⁸ Verwiebe et. al., 2020, Forschungskoooperation Universität Wien & MA 18 Stadtentwicklung und Stadtplanung & IFES, Sozialwissenschaftliche Grundlagenforschung für Wien III - Lebensqualität in einer wachsenden Stadt, Endbericht, p.305

²⁹ Verwiebe et. al., 2019, p.76

4 Analysing and testing the methodology used in the case study as compared to the TQoL approach

In Vienna quality of life is understood as an important factor for the city's development. Unlike other cities the municipality generates their own data, rather than using already existing one.

4.1 Comparing the QoL approach in the case study with the TQoL conceptual model

The concept for Quality of life in Vienna has been developed incrementally, based on the first survey in 1995. There is no specific theoretical concept applied. The framework developed in 1995 is still in use, with constant modifications. We analysed the questions of the survey and came to an overall picture of the TQoL framework developed in this study. The following two figures show the TQoL framework used in the most recent survey and the one that reflects the approach originally developed for the 1995 survey.

Figure 2 TQoL framework used in the recent version 2018

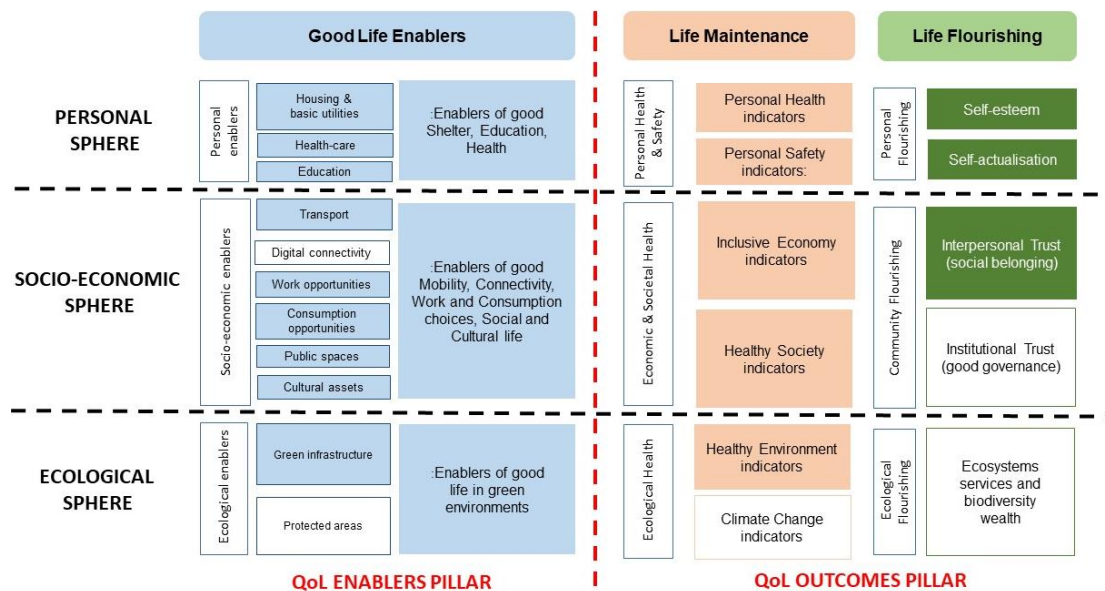
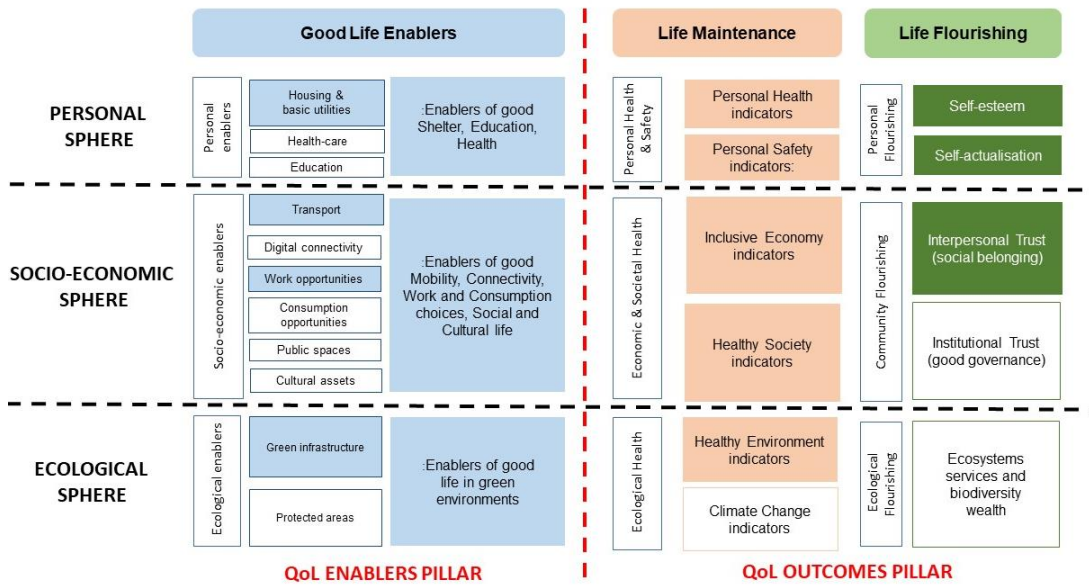


Figure 3 TQoL framework used in 1995



Comparing the two, it is evident that some domains have been added, but the three pillars already established in 1995 remain. Although the model has been developed without a specific theoretical framework, but mainly on a heuristic basis, questions for all three pillars have been included from the beginning. Several important sub-domains have been added until 2018. It is important to note, that more sub-domains in the Enablers Pillar could have been covered only looking at the topics, but a number of questions deal more with the quality of the services and user behaviour than availability or accessibility.

In 1995 within the QoL Enablers Pillar, a substantial number of sub-domains are not covered: such as the sub-domains on health care, education, digital connectivity, consumption opportunities, public spaces and cultural assets as well as protected areas. As the approach is very much driven by planning experts (with some feedback from external experts and the wider public), a possible explanation is the fact, that the accessibility and affordability of these services is not conceived as a problem that differs between specific territories of the city or between specific social groups.

In the Life Maintenance pillar all sub-domains are covered, except for climate change. This question becomes more and more of an issue of importance, but is obviously a gap in the survey.

The Life Flourishing pillar is also well represented. But, Institutional trust has not been included in the survey, as well as ecosystem services and biodiversity wealth.

It is worthwhile mentioning, that in 2018 not all sub-domains are covered. Missing sub-domains are mostly within the ecological sphere. Further, Institutional Trust is not covered either. Digital connectivity is covered as a topic, but as mentioned before on a higher fragmentation, assessment focuses on user behaviour and not on accessibility and affordability.

4.2 Coding the indicators

Preparing the data for coding according to the TQoL framework needed a substantial amount of preparatory and time-consuming steps to be undertaken. The survey data have been made available from the planning department for this project, but the data from the recent survey in 2018 were available only in July 2020.

The first step was to compare the questionnaires of all five runs of the survey and find questions that are represented in most of them. Furthermore, we only used questions that could be transformed into indicators and allocated to one sub-domain of our TQoL framework system. There are more than 120 questions in each survey. In order to reduce these for coding the relevant indicators, all questions for the different surveys (from 1995 to 2018) were mapped. Through that exercise we found that the comparability over time is limited, as scales were changed and questions modified, altered or dropped. We focused on those data that are representative at the level of the 23 districts and that are available on a comparative basis.

We also had to overcome the problem, that some of the sub-domains are covered by a large number of questions. We selected indicators most plausible, comparable with a better fit to our framework. Finally, we defined a good stock of indicators, but we had to leave out more questions than we could use for the allocation.

It is evident, that many data gaps have been filled since 1995. The 2018 framework has become to a high degree compatible with the TQoL framework. Yet, there are still some gaps in the framework that are worthwhile mentioning:

- Life spheres that we included in the enablers pillar are often covered, but usually quality of service or user behaviour is assessed, rather than availability and accessibility (i.e. consumption opportunities, education).
- Digital connectivity is not substantially covered until the 2018 survey. New questions introduced in 2018 mostly refer to user behaviour and frequency, rather than input indicators or availability.
- Particularly within the ecological sphere little information is collected.
- We consider the sub-domain “Institutional Trust” as not being covered. There are questions concerning political participation and municipal services in each run, but due to changes in the question they are hard to compare. Further they are usually split-questions and hence not representative at the level of districts.
- Particular questions (“Beurteilung von Wien”) assessing satisfaction with different municipal services and offerings in a variety of sub-domains are not representative at district level. We consider this as a big disadvantage, as this assessment could provide a lot of information strongly connected to territorial Quality of Life.
- The sub-domain of “consumption opportunities” is covered to some extent in most surveys, but design and purpose of the questions change a lot. Hence defining variables that can be compared over time was not successful for all years.
- The sub-domain “work opportunities” is generally covered as usually there are a lot of questions concerning the interviewee’s profession. Yet as interviewees can only be questioned, if they state to have a job, the sample size is too small to be representative at district level. Hence, these indicators were dropped after evaluating the sample size.
- Considering “Personal Health” as a combination of mental and physical well-being, mental health was only introduced in 2013. Before that, individual stress levels were assessed, but not particularly as a mental health issue.
- Important to note is that the average net household income, as indicator for an “inclusive economy”, was also assessed in 1995, though marked as “NA”. However, the interviews were face-to-face and a chart was used to categorise the household income. As this chart was not provided, it was not possible to interpret the variables in the data set and hence include household income in the dashboard for 1995.

- Though questions dealing with emissions (dust and noise) were asked on each run, the design of the questions changed incrementally. Defining and cleaning variables was too time consuming to ensure comparability over time. This is why these variables are not included in 1995 and 2003, as these two years in particular differ from the others.

Further, there are also life spheres included in the Vienna surveys, which are not covered by our approach. These include:

- Social services, such as care facilities;
- Availability and proximity of sport and other leisure facilities, that are not included in cultural assets;
- Change of housing & permanency of rental contracts;
- Heating (in 1995), which might be a very first indicator for climate related issues.

Particularly an assessment of heating systems and behaviour could be a useful asset for the dashboard, to be filled into the ecological sphere.

The following table shows the mapping of the chosen survey questions that are converted into indicators and allocated within the coding system. It covers all the years of the Vienna survey and the respective availability of data.

Table 5 Coding of the indicators derived from the QoL surveys Indicators mapped in coding system

Dimension	Domain	Sub-domain	Indicator	description	1995	2003	2008	2013	2018	
Good Life Enablers	Personal enablers	Housing & basic utilities (b11)	housing costs	Average monthly housing costs incl. operating costs per household	y	y	SPLIT	y	y	
			housing: value for money	Average satisfaction with value for money for housing	y	y	SPLIT	y	y	
			housing conditions	Average satisfaction with overall housing conditions	y	y	y	y	y	
		Healthcare (b12)	Proximity of health insitutions	Average satisfaction with proximity of health insitutions in residential area	NA	NA	y	y	y	
		Education (b13)	Proximity of schools	Average satisfaction with proximity of schools in residential area	NA	NA	y	y	y	
	Socioeconomic enablers	Transport (b21)	Use of public transportation	Share of residents who use public transportation multiple times a week or almost daily	y	y	y	y	y	
			Connection with public transportation	Average satisfaction with connection of residential area with public transportation	NA	NA	y	y	y	
			Improvement of public transport	Share of residents, who think better connection to public transport is needed to imporve TQoL	y	y	y	y	y	
		Digital connectivity (b22)	Internet connection at home	Share of households equipped with an internet connection at home	NA	y	SPLIT	SPLIT	NA	
		Work opportunities(b23)	Commuting time	Average commuting time from home to work place in one direction	SPLIT	SPLIT	SPLIT	SPLIT	NA	
		Consumption opprotunities(b24)	Shopping possibilities	Average satisfaction with shopping opportunities in residential area	NA	NA	NA	y	y	
			Improvement of food shopping possibilities	Share of residents who think more grocery stores are needed to imporve TQoL	NA	NA	y	y	y	
		Public spaces (b25)	Public spaces	Average satisfaction with public spaces in residential area	NA	NA	NA	NA	y	
			Improvement of public spaces	Share of residents who think more pleasant squares and other public spaces are needed to imporve TQoL	NA	NA	NA	y	y	
		Cultural assets (b26)	Cultural offerings	Average satisfaction with cultural offerings in residential area	NA	NA	NA	y	y	
			Individual cultural activites	Average satisfaction with individual cultural activity	NA	y	y	y	NA	
		Ecological enablers	Green infrastructure (b31)	Proximity of green areas	Average satisfaction with proximity of residential area to green areas	NA	NA	y	y	y
				Improvement of green areas	Share of residents who think more green areas are needed to imporve TQoL	y	y	y	y	y
	Protected areas (b32)		NA						NA	

Dimension	Domain	Sub-domain	Indicator	description	1995	2003	2008	2013	2018
Life Maintenance	Personal health & safety	Personal Health (m11)	Individual health	Average state of individual health	y	y	NA	y	y
			Satisfaction with their individual health	Average satisfaction with individual state of health	NA	y	y	y	y
			Mental health	Share of residents who state to have negative feelings often or always	NA	NA	NA	SPLIT	y
		Personal Safety (m12)	Evaluation of safety	Average evaluation of safety against being victimised in their residential area	y	y	y	y	y
			Victimisation	Share of residents who were victimised in their residential area within the last year	y	y	y	y	SPLIT
	Economic & societal Health	Inclusive Economy (m21)	Average household income	Average monthly household income (net, after tax)	NA	y	y	y	y
		Healthy Society (m22)	Financial Deprivation	Share of residents who do not manage/have trouble to live of their household income	y	y	y	y	y
			Financial Situation	Average satisfaction with the financial situation of the household	NA	y	y	y	y
	Ecological health	Healthy Environment (m31)	Quality of air	Average satisfaction with quality of air in residential area	y	y	y	y	y
			Dust, smell or emissions	Average satisfaction with disturbances by dust, smell or emissions in residential area	NA	y	y	y	y
		Climate Change (m32)	NA						
Life Flourishing	Personal	Self-esteem(f11)	Individual life	Average satisfaction with individual life	y	y	y	y	y
			Bonding to the district	Share of residents , who like living in the district	y	y	y	y	y
		Self-actualization(f12)	Main activity	Average satisfaction with main activity (Job, Education,...)	NA	y	y	y	y
			Family situation	Average satisfaction with family situation	y	y	y	y	y
			Leisure activity	Average satisfaction with individual leisure activity	y	y	y	y	y
	Community Flourishing	Interpersonal Trust (societal belonging)(f21)	Social contacts	Average satisfaction with social contacts	y	y	y	y	y
		Institutional Trust (good governance)(f22)	NA						
	Ecological flourishing	Ecosystems services and Biodiversity wealth(f31)	NA						

Source: Own elaboration on the basis of the questionnaires

4.3 Other relevant features of the approach

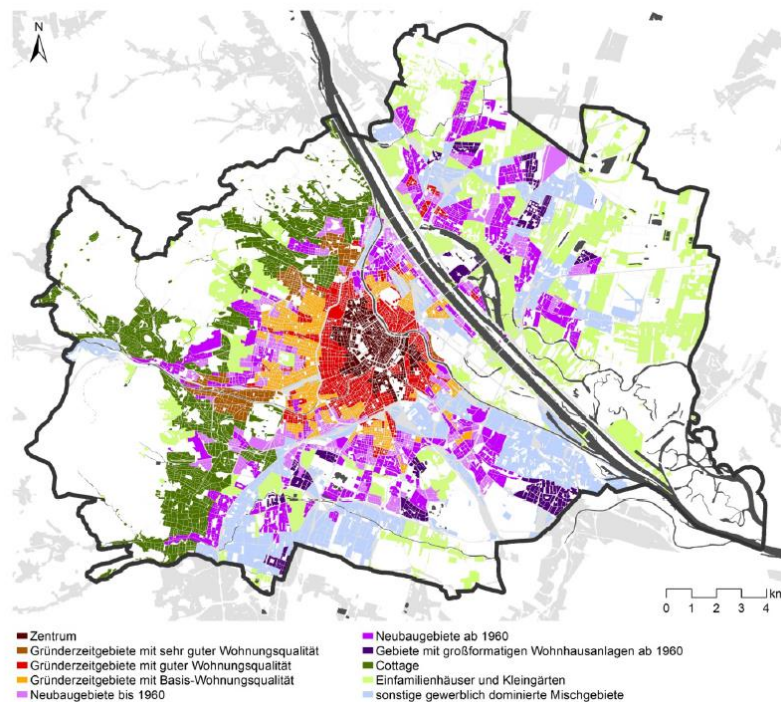
The Viennese approach has a number of features that are also part of the TQoL approach, though the implementation is very much shaped by the incremental development since 1995.

4.3.1 Quality of Life in a territorial context

From the very beginning of these surveys, data was only collected within the city boundaries of Vienna. The major shortcoming is that it is confined to the administrative borders of the city and does not reach out to the parts of the FUA that belongs to the Land Niederösterreich (Lower Austria).

However, data are not only collected and used at the local level of districts, but are aggregated by types of urban areas (“Stadtgebietstypen”). By using type of urban areas, quality of life is investigated not only within (administrative) local district borders, but the immediate built environment as influencing factors on quality of life is further emphasised. It is argued that local nuances and disparities are influenced more by the immediate built environment and socio-economic factors, than by district borders.

Figure 4 Types of urban neighbourhoods (Stadtgebietstypen) 2008 & 2013, Map of Vienna (MA 18)



Source: Verwiebe et. al., 2014, Forschungskoooperation Universität Wien & MA 18 Stadtentwicklung und Stadtplanung & IFES, Sozialwissenschaftliche Grundlagenforschung für Wien II (2013), Lebensqualität in Wien im 21. Jahrhundert, Endbericht

Initially eight types of urban areas were established, marked on the basis of registration district and categorised by city location, dominant type of urban development, type of buildings, housing structure in close proximity and population composition.³⁰

³⁰ (1) Centre; (2) Centre's fringes; (3) Gründerzeit (founders' period) problematic areas; (4) fringes of high-density urban area; (5) Western peripheries; (6) North-eastern centres; (7) Newly built residential buildings; (8) low-density peripheries

After the first two runs of the survey, these typologies were improved and redefined, according to the urban development. The new definition was entirely reduced to criteria of construction, such as year of construction, apartment facilities, apartment size and density. The definition was based on the 1 400 census areas and statistical data of building and housing stock from 2001. This allowed for a typology based on a smaller scale. In combination with further research and a cluster analysis, ten different types of urban areas were established.³¹

One of the municipal reports focuses on disparities below the level of the 23 districts and deals with local neighbourhoods (91).³² This type of aggregation was dropped for the 2018 survey and replaced by aggregation based on districts and types of lifestyle (see section 3.1).

Overall, the Vienna approach can be considered as territorial quality of life approach, though it is very different from the TQoL approach developed in this ESPON study. The approach in Vienna describes and analyses features that are linked to the territorial position of the area (e.g. satisfaction with proximity of health institutions to residential area). However, it is rather selective for which life spheres this territorial dimension is captured (e.g. the question on culture is about the offers in the entire city, but do not sufficiently include questions on the availability and diversity of offers in the neighbourhood).

4.3.2 Involvement of citizens

The Viennese surveys rely solely on data generated by citizens (through the surveys), but the approach cannot be defined as a citizen-centric one (which would involve citizens in defining domains and sub-domains of Quality of Life or cooperation with citizens in designing the questions or surveys).

Other than that, any stronger participation of citizens is not enhanced as it seems to be difficult to change questions without jeopardising valuable time series. However, there are some sub-projects within the reporting scheme (Werkstattberichte), where citizens were involved in the reporting process. One example is the report on “Quality of Life in urban development areas”³³. A combination of data from the QoL survey 2013 and outcomes from focus groups, in which residents from local neighbourhoods were involved, was used for assessing QoL in five particular urban development areas.

In Vienna no citizen-centric participation scheme in planning is in place at the city level. Facilitation and participation are the tasks of local urban renewal offices of the “Gebietsbetreuung Stadterneuerung”. They are promoting sustainable implementations of urban renewal projects, such as housing construction or upgrading of public spaces, within local communities at neighbourhood level.

Overall, the survey data cannot directly be compared with other statistical data. There are attempts to identify gaps between the subjective perception and objective conditions. These

Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2007, Werkstattbericht 81, Leben und Lebensqualität in Wien - Kommentierte Ergebnisse und Sonderauswertungen der Großstudien „Leben in Wien“ und „Leben und Lebensqualität in Wien“

³¹(1) Centre; (2) Gründerzeit with high quality of housing; (3) Gründerzeit with very high quality of housing; (4) Gründerzeit with basic quality of housing; (5) areas with large scale residential buildings built after 1960; (6) Newly built residential buildings built before 1960; (7) Newly built residential buildings built after 1960; (8) areas with single-family homes and allotments (9) Cottage; (10) other areas predominantly with commercial mixed use).

³² Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2016, Werkstattbericht 157, Lebensqualität in 91 Wiener Bezirksteilen – Bezirksprofile der Zufriedenheit mit der Wohnumgebung

³³ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2017, Werkstattbericht 174, Lebensqualität in Neubaugebieten

are used as feedback for the design of the following survey in order to close data gaps (this is mainly driven by the Smart City and gender equality monitoring).

The use of big data is seen rather critically by the unit implementing the survey, due to concerns of fully complying with EU General Data Protection Regulations GDPR. Big data is mostly used in Vienna for matters such as mobility.

4.4 Application of the methodology in the case study context

The Vienna City Administration was kind enough to provide all data sets from the different surveys, for the purpose of this case study. Therefore, we want to thank Mr. Troger.

While developing the test of the TQoL methodology we concluded that we could only use the dashboard. For the k-clustering method, the number of observations (23 districts) is much too small.

4.4.1 Application of the dashboard

Based on the general framework and methodology developed by ESPON TQoL we chose the following approach for the application of the dashboard:

- The territorial level is defined by the 23 Viennese districts, as this level allows for a combination of statistical and survey data.
- For the data compiled in the dashboard, we use indicators built from questions occurring in the QoL surveys.
- For testing time series, we selected the years 1995, 2008 and 2018.
- For the most recent survey of 2018, we created a second dashboard to combine the survey data with other statistical data available at district level, to match the categories of the TQoL-framework.³⁴ We complemented the survey data with statistical data, in order to demonstrate that the dashboard approach has the potential to use data from various sources and compare data over time. The dashboard would even allow for a comparison between subjective and objective data.³⁵
- The data stock for “2018 plus” are complemented by the following sources:
 - Statistisches Jahrbuch Wien 2018 ³⁶ and 2019; ³⁷
 - Bundesministerium für Digitalisierung und Wirtschaftsstandort - Open Data Österreich;³⁸
 - Statistik Austria, Atlas; ³⁹

³⁴ Data from the survey are in some, but not in all cases representative at the level of districts. For a wider use, this needs to be considered.

³⁵ This exercise requires subjective and objective indicators describing the same condition, such as “quality of housing stock” and “satisfaction with quality of housing”. The application has not been pursued as complementary data were not available either on district level or not at all.

³⁶ Vienna City Administration, Statistik Wien, <https://www.digital.wienbibliothek.at/wbrup/periodical/titleinfo/2320171>

³⁷ Vienna City Administration, Statistik Wien, <https://www.wien.gv.at/statistik/publikationen/jahrbuch.html>

³⁸ Open Data Österreich, https://www.data.gv.at/katalog/dataset/stadt-wien_publicwlanstandortewien/resource/c3d64d08-bb9e-4e7b-bae3-14859cfaba76

³⁹https://www.statistik.at/atlas/?mapid=them_bevoelkerung_erwerb&layerid=layer3&sublayerid=sublayer0&languageid=0&bbox=1788755,6126283,1852962,6162170,12

- Energy Report of the City of Vienna 2019. ⁴⁰

The handling of the data turned out to be very challenging.

- The data sets for each year are based on the respective surveys. There are slight changes within the questions and answers each year. Thus, the data sets often cannot be compared on a one-to-one basis. The first step was to start off by choosing questions and defining variables for building indicators, but revisit the questionnaires to understand the meaning of each of the questions in the different years.
- There are a number of technical factors to consider, especially concerning comparability ⁴¹ and representativeness⁴². After defining variables, it was obvious that most variables required a clean-up (unifying scales), in order to be comparable. For some variables too few observations were made, jeopardising the representativeness of results at district level. The latter could hence not be used for our dashboard and are marked as “SPLIT” in the coding system.
- As many of the survey questions are at the level of satisfaction to be defined on a scale from one to five⁴³, we converted these data to a weighted mean in order to get a single indicator for each relevant question.
- The survey data transmitted from the municipality of Vienna needed to be transformed in order to fit them into the dashboard. For the extraction, conversion and further handling of data, we used a special programme (studio R-programme) and specific statistical expertise.

For testing the TQoL approach we prepared several dashboards:

- A “2018-dashboard” with the data retrieved only from the Quality of Life survey;
- A “2018-dashboard plus” with a set of data, where we combine survey data (mainly subjective data) with statistical data (objective indicators);
- Time series: One dashboard for 2008 and 1995 – to display changes in the relative positions over time.

The following table shows the indicators we used to test the dashboards and most importantly includes the data we used for complementing the dashboard for 2018 with statistical data. For the dashboards filled only with survey data, we used the same dataset as before, but clearing the additional statistical data. Data availability for each indicator and each point of time are clearly marked.

The subsequent figures provide the screenshots of the aforementioned dashboards, displaying the same LAU (local authority). The first (figure 5) includes statistical data (Dashboard 2018 plus) followed by figure 6 that relies only on survey data (Dashboard 2018). Further screenshots display the dashboards for 2008 and 1995 (figures 7 and 8).

⁴⁰ Municipal Department 20 – Energy Planning, <https://www.wien.gv.at/statistik/energie/>, <https://www.wien.gv.at/stadtentwicklung/energie/pdf/energiebericht2019-en.pdf>

⁴¹ There are also differences in the survey methods (face-to-face in 1995, then by CATI and in 2018 by CAWI and online). This is tackled by weights already included as variable in the provided data, but particularly data from 1995 have to be used carefully.

⁴² Only those data are representative at district level, where a high response rate was achieved. Some questions were split or filtered, which also reduced the response rate. These indicators were eliminated.

⁴³ In reference to the local school grading system, as this scale seems to be the most intuitive.

Table 6 Indicators mapped in coding system for 1995, 2003, 2008, 2013 and 2018

Dimension	Domain	Sub-domain	Indicator	description	1995	2003	2008	2013	2018	
Good Life Enablers	Personal enablers	Housing & basic utilities (b11)	housing costs	Average monthly housing costs incl. operating costs per household	y	y	SPLIT	y	y	
			housing: value for money	Average satisfaction with value for money for housing	y	y	SPLIT	y	y	
			housing conditions	Average satisfaction with overall housing conditions	y	y	y	y	y	
			Average living area per person	Average living area per person	1991	2001	2011	NA	NA	
			Quality of housing stock	share of dwellings with category a or b; Gebäude- bzw. Häuser- und Wohnungszählungen 1991, 2001 und Registerzählung 2011 (nur Wohnungen mit Hauptwohnsitz).	1991	2001	2011	NA	NA	
		Healthcare (b12)	Registered doctors	Total amount of registered general doctors	y	y	y	y	y	
			Hospitalbeds	Total amount of beds in public and non-profit hospitals, effectively used beds in hospitals under city administration and other administration	NA	NA	y	y	y	
			Proximity of health insitutions	Average satisfaction with proximity of health insitutions in residential area	NA	NA	y	y	y	
		Education (b13)	Proximity of schools	Average satisfaction with proximity of schools in residential area	NA	NA	y	y	y	
			NA		NA	NA	NA	NA	NA	
		Socioeconomic enablers	Transport (b21)	Use of public transportation	Share of residents who use public transportation multiple times a week or almost daily	y	y	y	y	y
				Connection with public transportation	Average satisfaction with connection of residential area with public transportation	NA	NA	y	y	y
				Improvement of public transport	Share of residents, who think better connection to public transport is needed to imporve TQoL	y	y	y	y	y
	Bicycle infrastructure			Share of bicycle infrastructure compared to municipal roads (length)					2016	
	Digital connectivity (b22)		WIFI-Hotspots	Total amount of Public WIFI-Hotspots					2013	
			Internet connection at home	Share of households equipped with an internet connection at home	NA	y	SPLIT	SPLIT	NA	
	Work opportunities(b23)		Available jobs per district	Total amount of available jobs per district					y	
			Commuting time	Average commuting time from home to work place in one direction	SPLIT	SPLIT	SPLIT	SPLIT	NA	
	Consumption opprotunities(b24)		Shopping possibilities	Average satisfaction with shopping opportunities in residential area	NA	NA	NA	y	y	
			Improvement of food shopping possibilities	Share of residents who think more grocery stores are needed to imporve TQoL	NA	NA	y	y	y	
	Public spaces (b25)		Public spaces	Average satisfaction with public spaces in residential area	NA	NA	NA	NA	y	
			Improvement of public spaces	Share of residents who think more pleasant squares and other public spaces are needed to imporve TQoL	NA	NA	NA	y	y	
			Public playgrounds	Available public playgrounds					y	
	Cultural assets (b26)	Cultural offerings	Average satisfaction with cultural offerings in residential area	NA	NA	NA	y	y		
		Individual cultural activites	Average satisfaction with individual cultural activity	NA	y	y	y	NA		

Dimension	Domain	Sub-domain	Indicator	description	1995	2003	2008	2013	2018
	Ecological enablers	Green infrastructure (b31)	Parks and green areas	Share of district area by green areas (parks, green areas and cemeteries, woods, grassland)					y
			Proximity of green areas	Average satisfaction with proximity of residential area to green areas	NA	NA	y	y	y
			Improvement of green areas	Share of residents who think more green areas are needed to improve TQoL	y	y	y	y	y
		Protected areas (b32)	Natural Monuments by district	Total amount of Natural Monuments					y
			Natural Protection Areas	Share of district area by Natural Protection Areas (Landschaftsschutzgebiete)					y
Life Maintenance	Personal health & safety	Personal Health (m11)	Individual health	Average state of individual health	y	y	NA	y	y
			Satisfaction with their individual health	Average satisfaction with individual state of health	NA	y	y	y	y
			Mental health	Share of residents who state to have negative feelings often or always	NA	NA	NA	SPLIT	y
		Personal Safety (m12)	Evaluation of safety	Average evaluation of safety against being victimised in their residential area	y	y	y	y	y
			Victimisation	Share of residents who were victimised in their residential area within the last year	y	y	y	y	SPLIT
			Traffic accidents	Total amount of injured individuals in traffic accidents					y
	Economic & societal Health	Inclusive Economy (m21)	Employment rate	Employment rate					2017
			Gender pay difference	Average annual income per year (net, after tax); female earnings compared to male earnings; Lohnsteuerpflichtiges Einkommen					2017
			Average household income	Average monthly household income (net, after tax)	NA	y	y	y	y
		Healthy Society (m22)	Financial Deprivation	Share of residents who do not manage/have trouble to live of their household income	y	y	y	y	y
			Financial Situation	Average satisfaction with the financial situation of the household	NA	y	y	y	y
	Ecological health	Healthy Environment (m31)	Quality of air	Average satisfaction with quality of air in residential area	y	y	y	y	y
			Dust, smell or emissions	Average satisfaction with disturbances by dust, smell or emissions in residential area	NA	y	y	y	y
		Climate Change (m32)	Solar energy	Power of photovoltaic systems per capita (per 1000 residents)					2017
			NA						

Dimension	Domain	Sub-domain	Indicator	description	1995	2003	2008	2013	2018
Life Flourishing	Personal Flourishing	Self-esteem(f11)	Individual life	Average satisfaction with individual life	Y	Y	Y	Y	Y
			Bonding to the district	Share of residents , who like living in the district	Y	Y	Y	Y	Y
		Self-actualization(f12)	Main activity	Average satisfaction with main activity (Job, Education,...)	NA	Y	Y	Y	Y
			Family situation	Average satisfaction with family situation	Y	Y	Y	Y	Y
			Leisure activity	Average satisfaction with individual leisure activity	Y	Y	Y	Y	Y
	Community Flourishing	Interpersonal Trust (societal belonging)(f21)	Social contacts	Average satisfaction with social contacts	Y	Y	Y	Y	Y
			Residents entitled to vote	Share of residents entitled to vote on municipal level (Wiener Gemeinderatswahl 2015)					2015
		Institutional Trust (good governance)(f22)	NA						
			NA	NA					
	Ecological flourishing	Ecosystems services and Biodiversity wealth(f31)	Urban trees by district	Total amount of trees on streets					Y
			NA						

Source: Own elaboration on the basis of the questionnaires

Figure 5 Dashboard 2018 plus

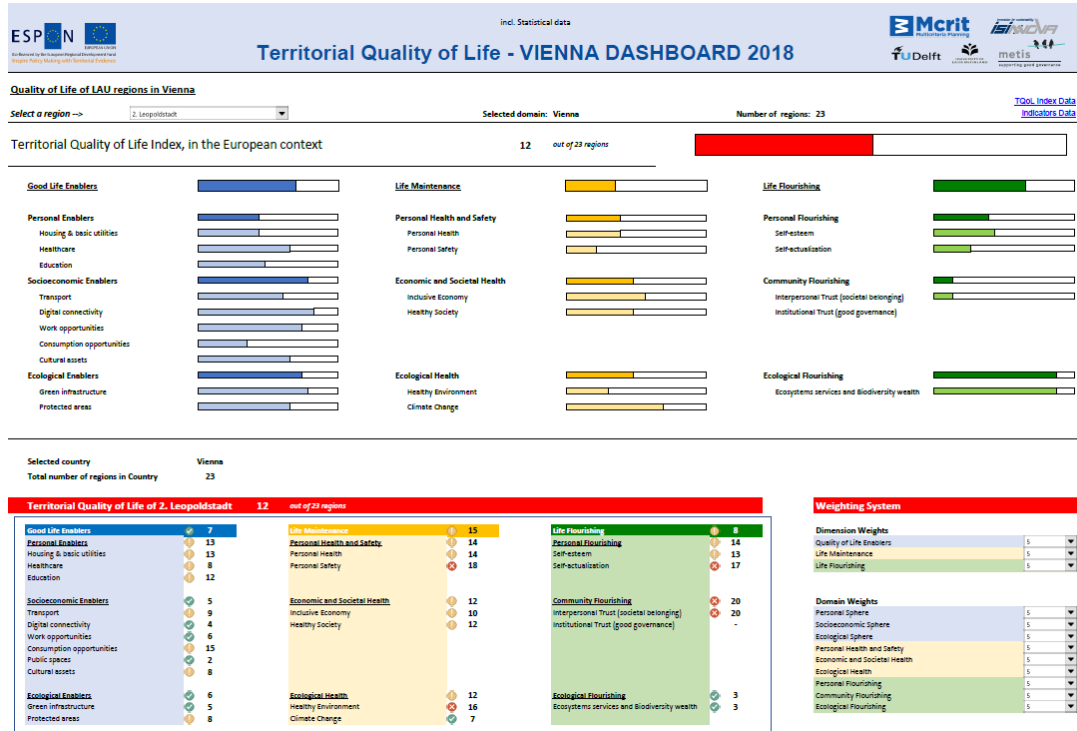


Figure 6 Dashboard 2018

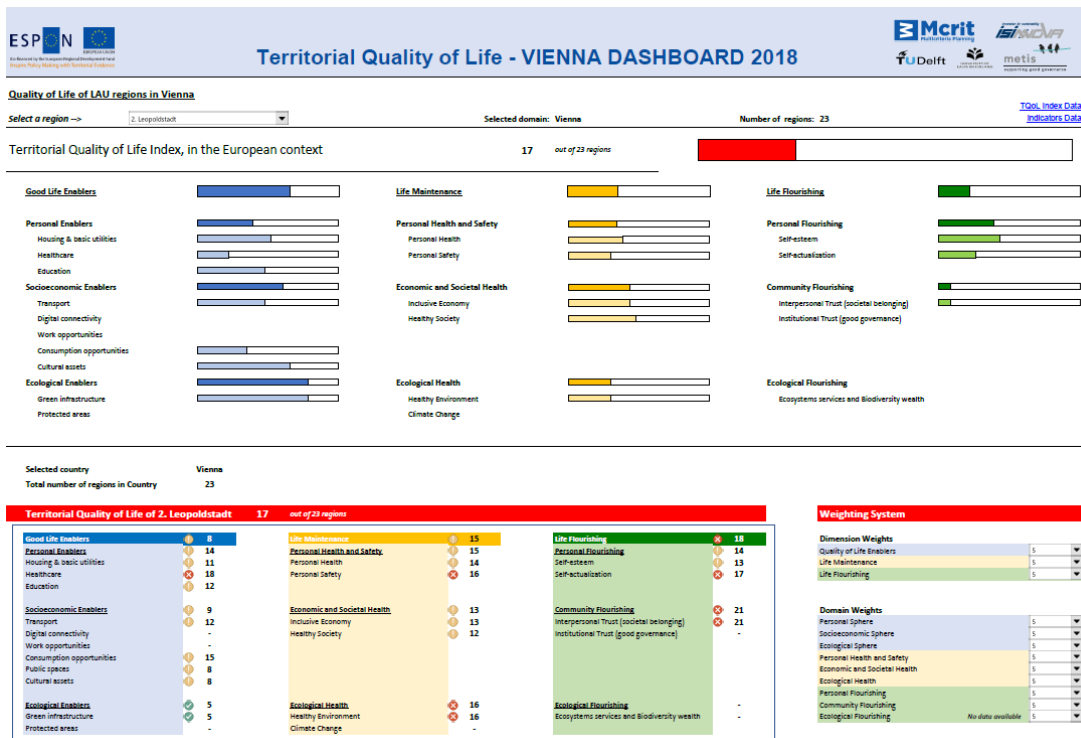


Figure 7 Dashboard 2008

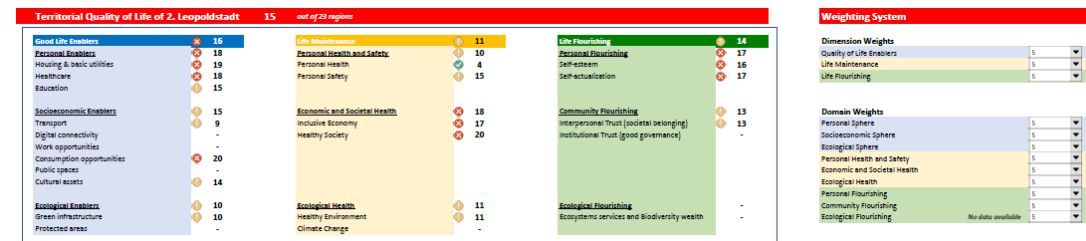
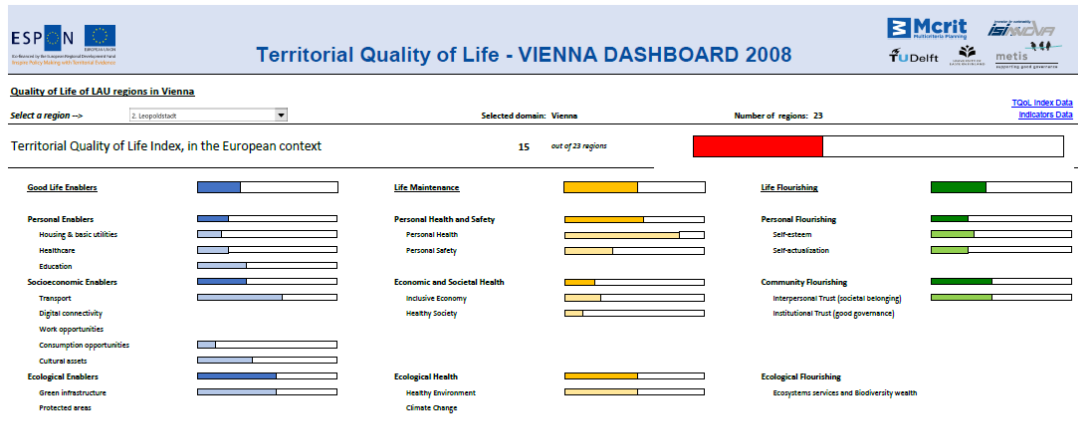
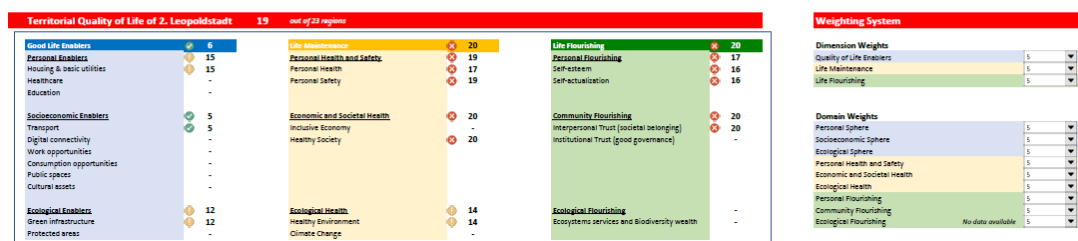
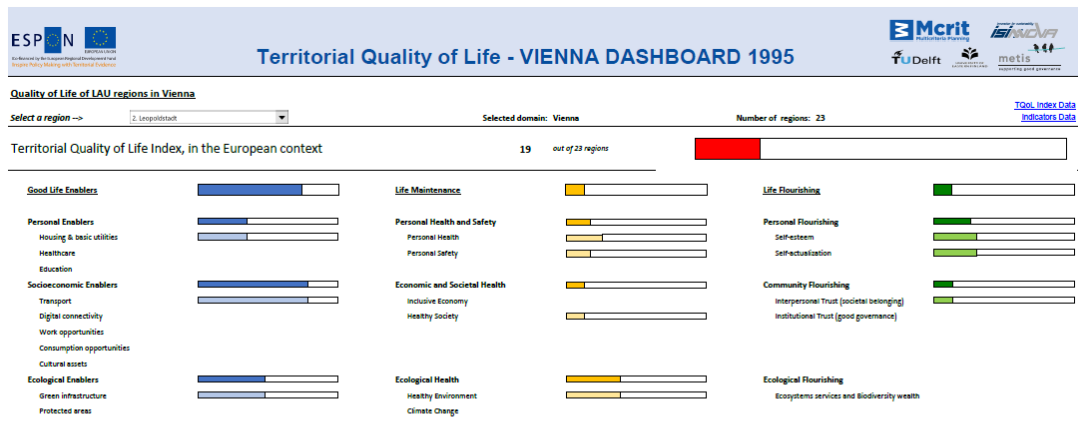


Figure 8 Dashboard 1995



We are in the favourable position to have comparable data for previous points in time. With data for the 2nd district the dashboard shows the relative position within the QoL domains and sub-domains in relation to the other districts. The dashboard is available for all 23 districts.

Each sub-domain is shown as a bar chart for the normalised average of the chosen indicators. Important to note is, that the selected region changes its relative position not only from one year to the next, but as well within 2018 when statistical data is added. If data from other sources are added, the 2nd district ranks 12th, while only with survey data it ranks 17th position. This led to the conclusion, that there are discrepancies between objective and subjective assessments, and hence potential misperceptions that could be further investigated - for example within a factfulness-test.

Figures 9 and 10, map out all districts of Vienna for 2018 and show their relative position.

Figure 9 Map displaying Dashboard 2018 plus

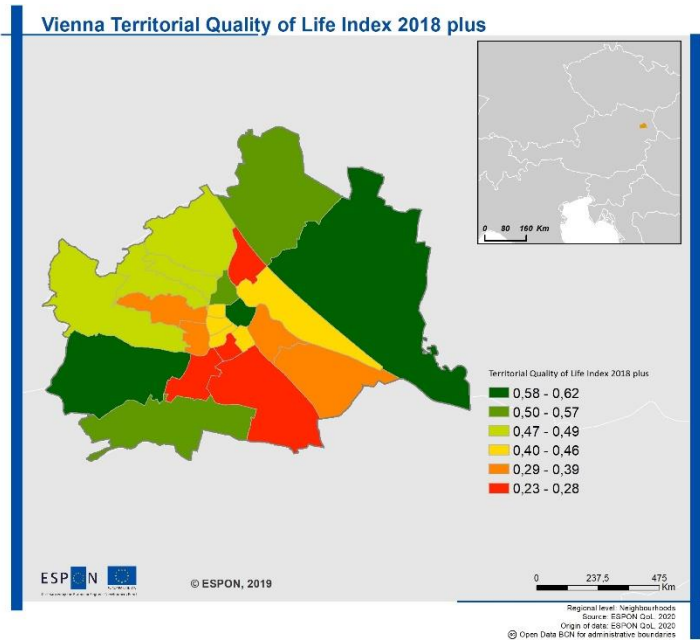
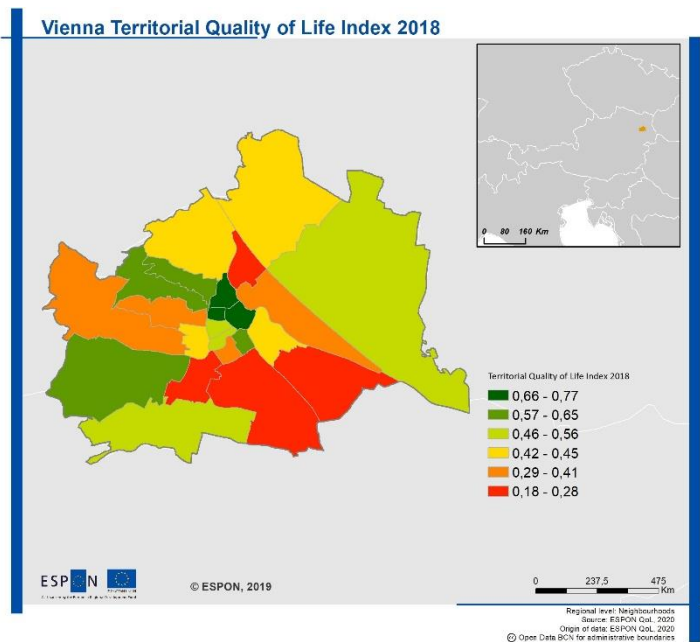


Figure 10 Map displaying Dashboard 2018



The most recent version of the dashboard shows a rather unexpected pattern of lower values in the TQoL index, such as the 19th district, which is considered to be one of the “better” areas

to live in. Unexpected results are as well found at the other end of the scale, such as the 1st district, as this is considered to be an attractive place for tourists rather than for residents.

The comparison between the two dashboards displaying the same year, but different data sets, show, that particularly amongst the lower rankings, position do not really change (i.e. 12th or 20th district). Some districts, such as the 1st or the 18th remain within the same cohort. In general, if objective data are added to the subjective survey data, the bigger districts win, whilst the inner (and smaller) districts loose.

For comparison over time, figures 11 and 12, map out all districts of Vienna for the dashboards of 2008 and 1995 and show their respective relative position.

Figure 11 Map displaying Dashboard 2008

Figure 12 Map displaying Dashboard 1995

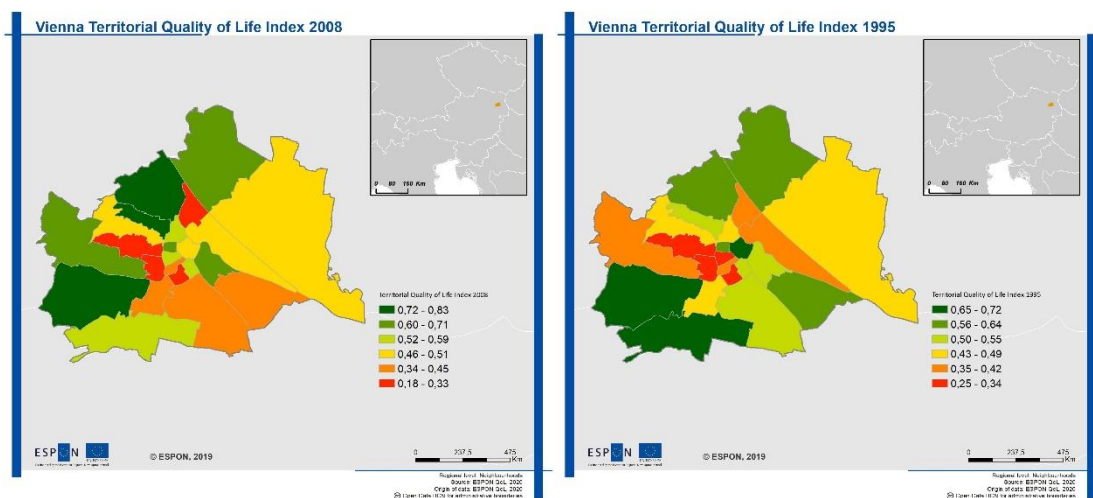
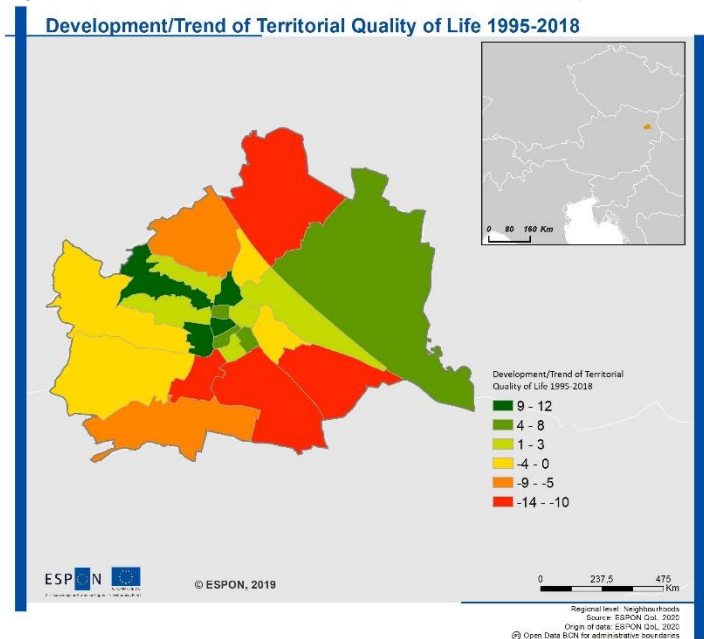


Figure 13 Map Development/Trend of Territorial Quality of Life 1995-2018



However, a comparison between the indices' values for 2018, 2008 and 1995, reveals several changes. For instance, placing Favoriten (10th district) in the better half in 1995, while having

one of the worst rankings in 2018. Conversely, the TQoL index values rose significantly for some other districts, e.g. Neubau (7th district). Figure 13 shows these changes in the ranking of all the sub-regions from 1995 until 2018. An example of high gains (dark green) is the 9th district north east of the city centre, at the opposite end (dark red), an example of a high drop in ranking is the 21st district in the North.

4.4.2 Testing a factfulness approach towards QoL

The Viennese QoL data are to a large degree subjective data, only some are objective. As shown above, we were able to complement the survey data with objective indicators from official statistics for the 23 districts. Through this exercise, we arrived at a good starting point for comparing subjective and objective indicators. This was the basis for implementing a factfulness test.

For testing the factfulness approach, we developed the following concept:

The aim of the factfulness test is to better understand the gap between objective and subjective measurement and improve the understanding and perception of QoL trends at the local level. We specifically wanted to get an estimate of the development over time and a comparison with the neighbouring district and look out for the underlying reasons of the interviewees' judgment. This should help to explain why discrepancies and misperceptions occur at different neighbourhoods and life spheres.

By using the factfulness-test we expect to gain some insight first in the reflection of the conceptual map and second on the usefulness of such a test for getting information on why some facts and trends are miss-judged and what the reasons might be.

Therefore, we identified sub-domains, where gaps between objective indicators and subjective assessments were identified by the surveys (e.g. housing, transport or healthy environment).

We also included a small survey on the TQoL concept to first understand better which sub-domains people define as relevant for their individual quality of life and second to assess a few chosen sub-domains.

The factfulness-test was implemented in the following way:

- The sample size consisted of 14 individuals with different age profiles and different qualification levels.
- We have chosen two neighbouring districts to be compared against each other. All interviewees live either in the 2nd or in the 20th district. Both districts form the island between Danube and Danube Channel. These areas were subject to substantial changes over the past decades and have developed very differently.
- Interviews were held by telephone, as zoom or skype were widely refused and personal contacts were avoided due to COVID 19 pandemic.
- Interviewees are contacted to be made familiar with the TQoL indicators framework, its scope and structure, and discuss the relevance of the domains, sub-domains and indicators to measure quality of life according to their needs and attitudes.
- Further, they are made familiar with the factfulness-test focusing on the prioritised sub-domains selected beforehand. Detailed questions on individual assessments of indicators were raised in the following five sub-domains:
 - Housing and basic utilities: satisfaction with overall housing conditions;

- Personal Health and Safety: evaluation of individual safety against victimisation;
- Transport: use of and connection with public transportation;
- Healthy environment: quality of air;
- Self-esteem: bonding to the district (Satisfaction with life in the residential area).

The time dimension is included by asking for a comparison of the situation over time, for an estimate on the trend and possible underlying reasons. The aim was to get the interviewee to get the “story” behind the perceived trend. Yet, this turned out to be difficult as not all of the interviewees lived in Vienna for a long period of time and hence were not confident enough to answer these questions. Another important aspect was to ask for a comparison with the respectively other (neighbouring) district, also for the past and the trend.

Results of the discussion of the conceptual map show, that most interviewees consider the TQoL framework to be complete. Nothing substantial is considered missing. Some people mentioned, that aspects such as availability of good quality food or sport activities are missing. Weighting of the sub-domains is generally considered as being difficult, as all of them are interconnected and strongly tied to quality of life. Some individuals mentioned domains being more or less important for them than others, but no recurrences or patterns could be discovered.

In the following part each of the tested domains will be dealt with. As the entire results of the factfulness-test would be too long to be fully discussed, only some questions and major results are discussed. For a better understanding they are compared against the results of the “Wiener Lebensqualitätsstudien” that are displayed in the respective figures.

Satisfaction with housing conditions

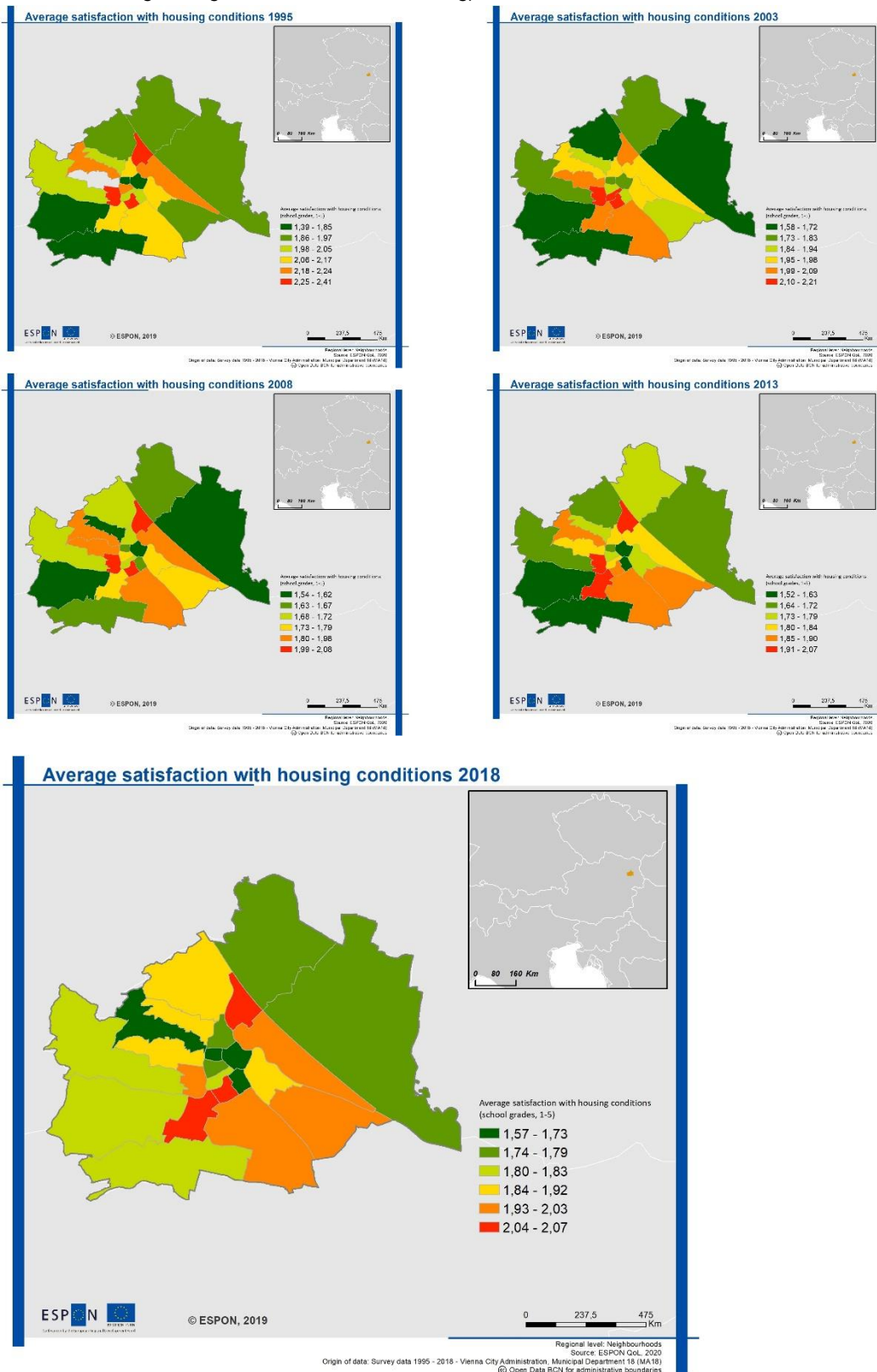
“Satisfaction with housing conditions” amongst interviewees is widely perceived as good or very good. Most of them also stated, that they think other residents in the area are equally satisfied. There is no significant discrepancy to the survey responses, though the average satisfaction is “good”. Most interviewees stated that their individual satisfaction has improved over the last decades, whereas survey data show that the average satisfaction has not improved much.

An interesting fact is that the 2nd district is the one with better housing conditions compared to the 20th district according to the interviewees. This is backed up by the survey data, although according to statistical data in 2011 the two districts have a similar quality of housing stock.⁴⁴ Only one interviewee explained, that the external perception of the 20th district might be worst, than it actually is and that the district is generally underestimated, though the individual stated that there are still some huge disparities within the district.

When it comes to housing costs and value for money most interviewees stated, that they consider their deal being good, although eight out of 14 pay more than the average. Interviewees who spend less than the average either have old (cheap) rental contracts or live in subsidised accommodation. However, each of the interviewees found an easy explanation for their deal and put it into context with the local circumstances. A lot of them consider themselves as being lucky having their specific housing arrangements.

⁴⁴ Vienna City Administration, Stadt Wien Wirtschaft, Arbeit und Statistik, 2019, Statistisches Jahrbuch 2019, S. 35 - Table 2.2.4

Figure 14, 15, 16, 17 and 18: Average satisfaction with housing conditions (school grades, scale from 1 to 5, with 1 being the highest and 5 the lowest rating)

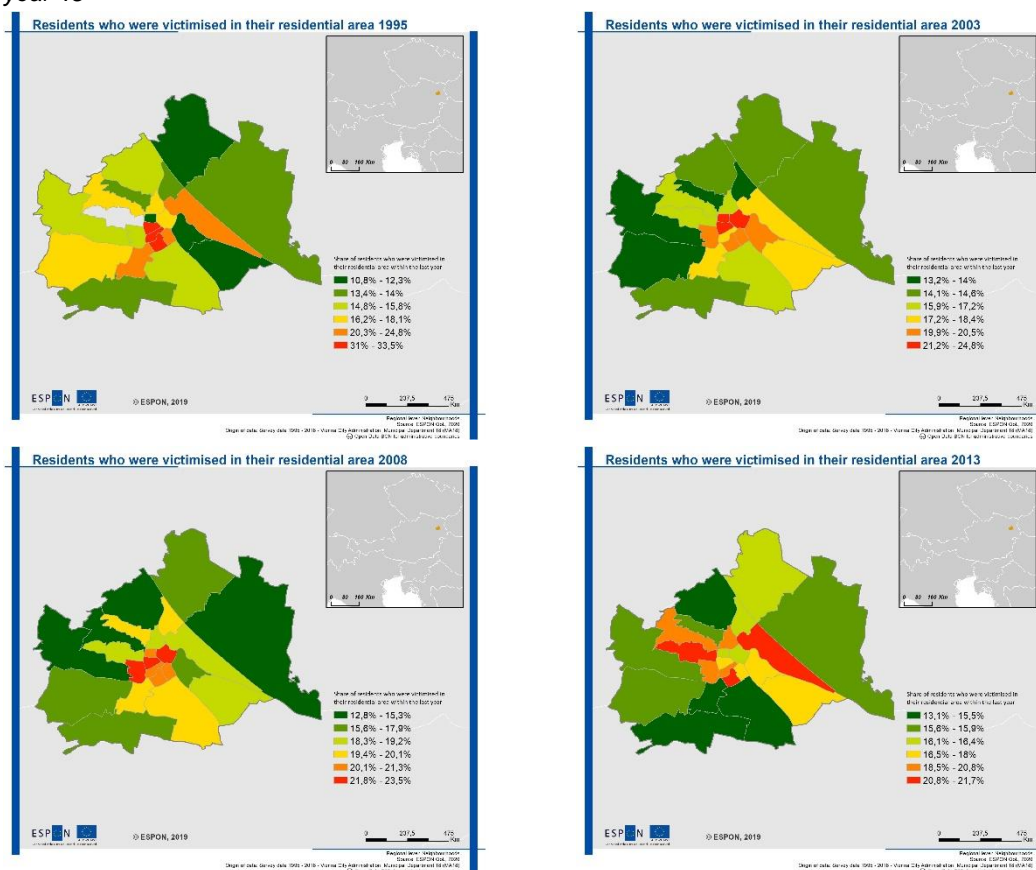


Evaluation of individual safety against victimisation

Discrepancies were detected within this evaluation, even though the crime rate in Vienna is dropping constantly, half of the interviewees think it has increased. However, surprisingly within their home district the “evaluation of the individual safety against being victimised in their residential area” is rather positive and most interviewees stated that personal safety has improved, no matter whether they live in the 2nd or 20th district. Only two of them claimed, that their individual feeling of being safe has dropped. The latter is also backed up by the results of the survey data.

It is worthwhile mentioning, that whilst interviewees think, that overall crime rate in Vienna is rising, the crime rate within both districts is considered to be low and dropping. The 2nd district is considered to have a lower crime rate than the 20th district. It was surprising to most of them, that the share of “residents who were victimised in their residential area within the last year” as well as the official crime rates are higher in 2nd than in the 20th district. Confronted with these facts, most explained their misperception with not considering particular “hotspots” (e.g. train station Praterstern) and with relevant news coverage.

Figure 19, 20, 21 and 22: Share of residents who were victimised in their residential area within the last year 45



Use of and connection with public transportation

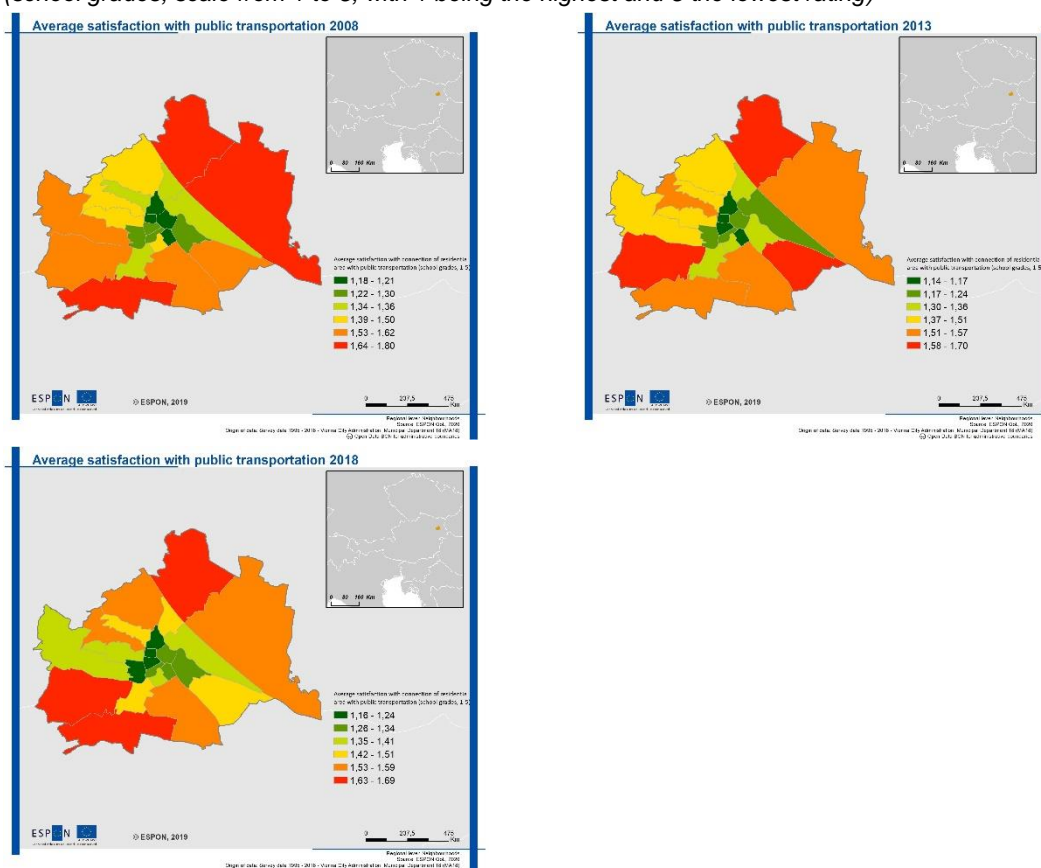
The average satisfaction with the connection of public transportation in Vienna is high or very high amongst interviewees. The same is true for the average satisfaction within the districts, though some persons highlighted, that there are discrepancies within the districts and the

⁴⁵ No data available for 2018

accessibility of different neighbourhoods. In comparison with the entire city, most consider the two districts to be better connected than or at least equal to other parts of Vienna, particularly compared to the “outer” districts. The same results are shown by the survey data.

Compared against the results of the surveys, it is noteworthy, that though the average satisfaction is amongst the highest in Vienna, the satisfaction in the 2nd and the 20th district has been declining again after 2013. Interviewees stated, that in the last decades the services were improved in terms of quality and extension of metro lines. However, some also consider the discontinuation of local tram and bus lines to be a deterioration for particular areas and neighbourhoods.

Figure 23, 24 and 25: Average satisfaction with connection of residential area with public transportation (school grades, scale from 1 to 5, with 1 being the highest and 5 the lowest rating)⁴⁶



When it comes to the assessment whether a better connection with public transportation would improve quality of life, half of the interviewees stated, that they would agree. However, most of them would improve frequency and density of stations. In contrast only 30% to 40% participants of the survey in 2018 consider this to be a factor in improving quality of life.

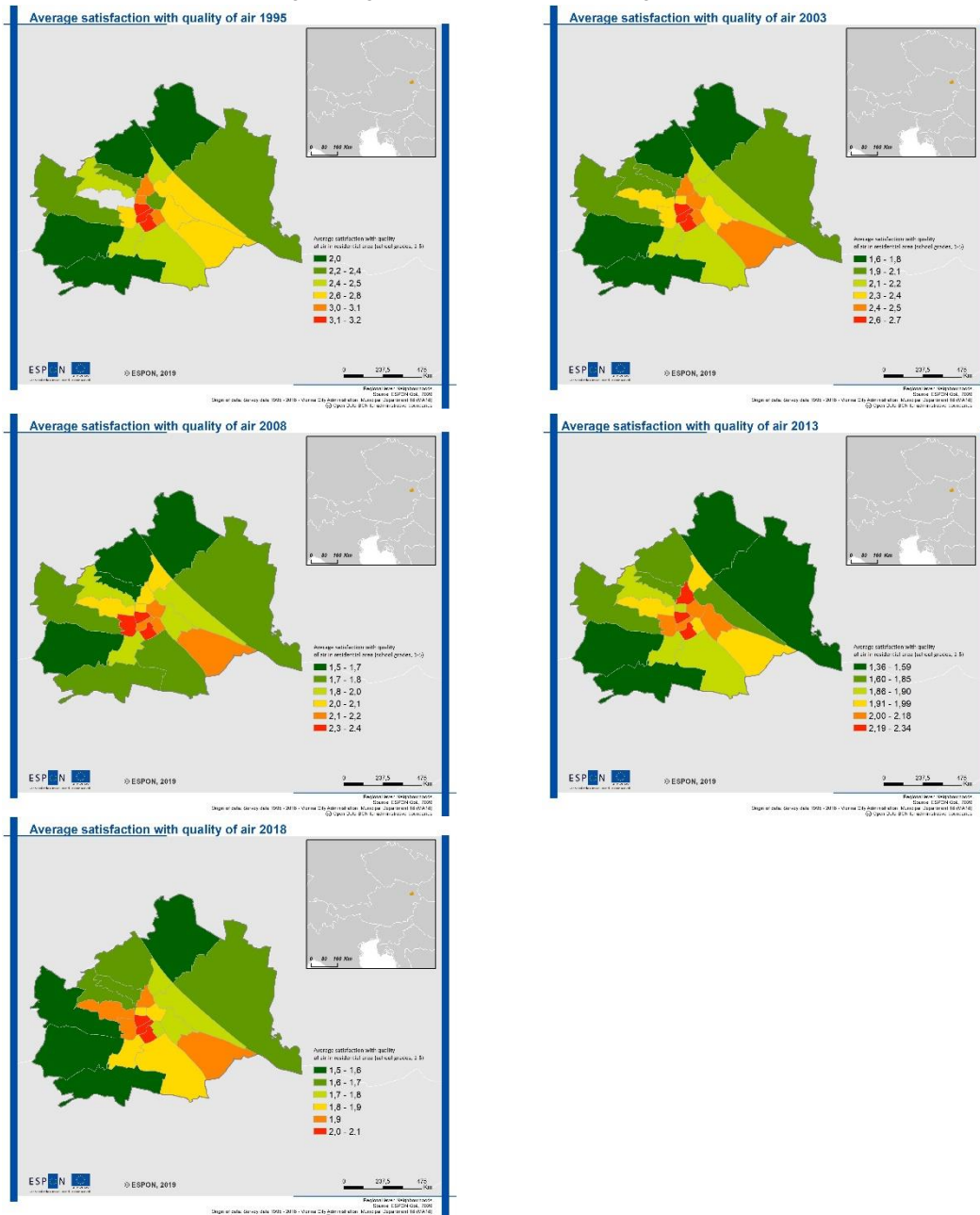
Quality of air

The satisfaction with quality of air in their residential area amongst interviewees is high, though some put their answer into context and stated, that the quality of air is good for a city but not in general and not if compared to the countryside. In addition, the quality of air within the 2nd and

⁴⁶ No data available for 1995 and 2003.

20th district is considered to be better than in other inner districts. The same level of satisfaction is represented in the results of the survey.

Figure 26, 27, 28, 29 and 30: Average satisfaction with quality of air in residential area (school grades, scale from 1 to 5, with 1 being the highest and 5 the lowest rating)



The satisfaction with quality of air in their residential area amongst interviewees is high, though some put their answer into context and stated, that the quality of air is good for a city but not in general and not if compared to the countryside. In addition, the quality of air within the 2nd and 20th district is considered to be better than in other inner districts. The same level of satisfaction is represented in the results of the survey.

However, almost 50% of the interviewees are confident, that the air quality in Vienna has decreased and that the level of pollution has increased in the last decades. According to official data, levels of pollution have in fact dropped significantly in Vienna. This is backed up by survey data in response to the satisfaction with disturbances by emissions such as dust or smell.

If confronted with the misperception, interviewees explained the basis of their assessment on the increase of traffic and population density, while not considering new technologies in filtering emissions.

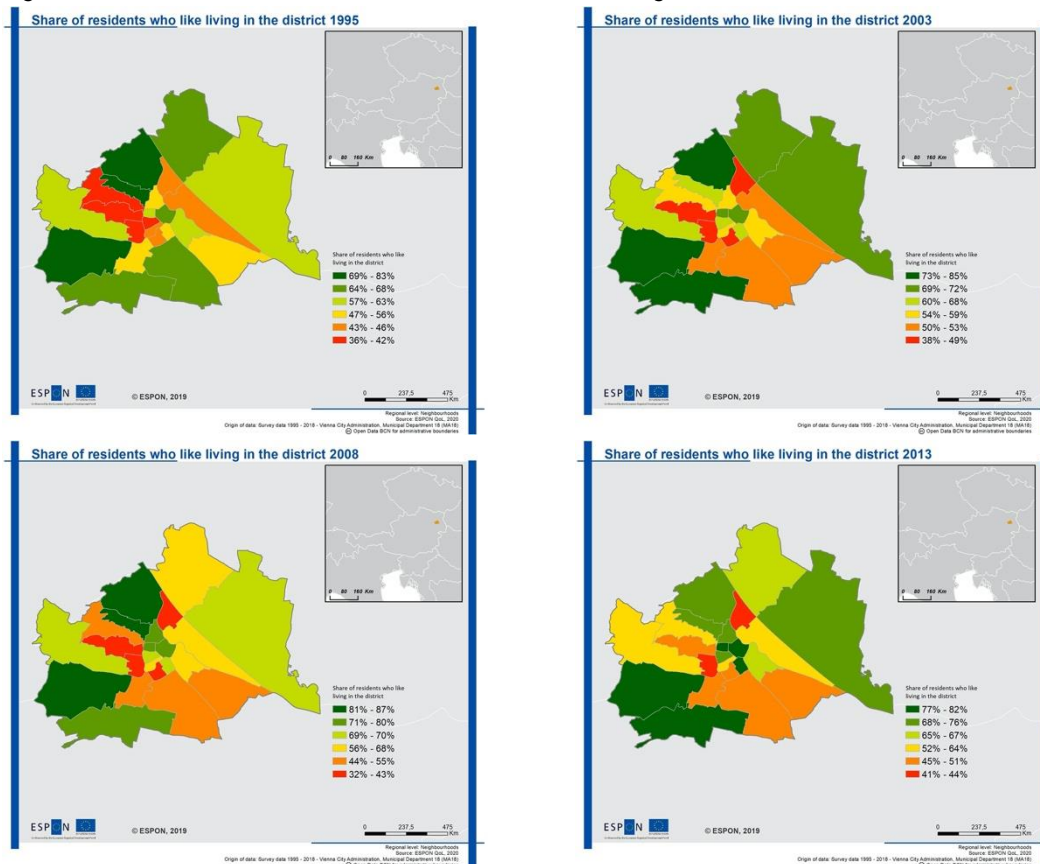
Bonding to the district (Satisfaction with life in the residential area)

Individual satisfaction amongst interviewees with their residential area has widely improved or at least remained the same in the last decades. All of them like living in their respective district, only one individual would prefer living in the 2nd district, rather than the 20th. No other districts were listed as preferred. Interviewees stated, that they think other residents also like living in their respective district. They also thought, that both districts have undergone a positive development and that this positive trend will continue. Most of them consider the 2nd district to be better than the 20th or Vienna.

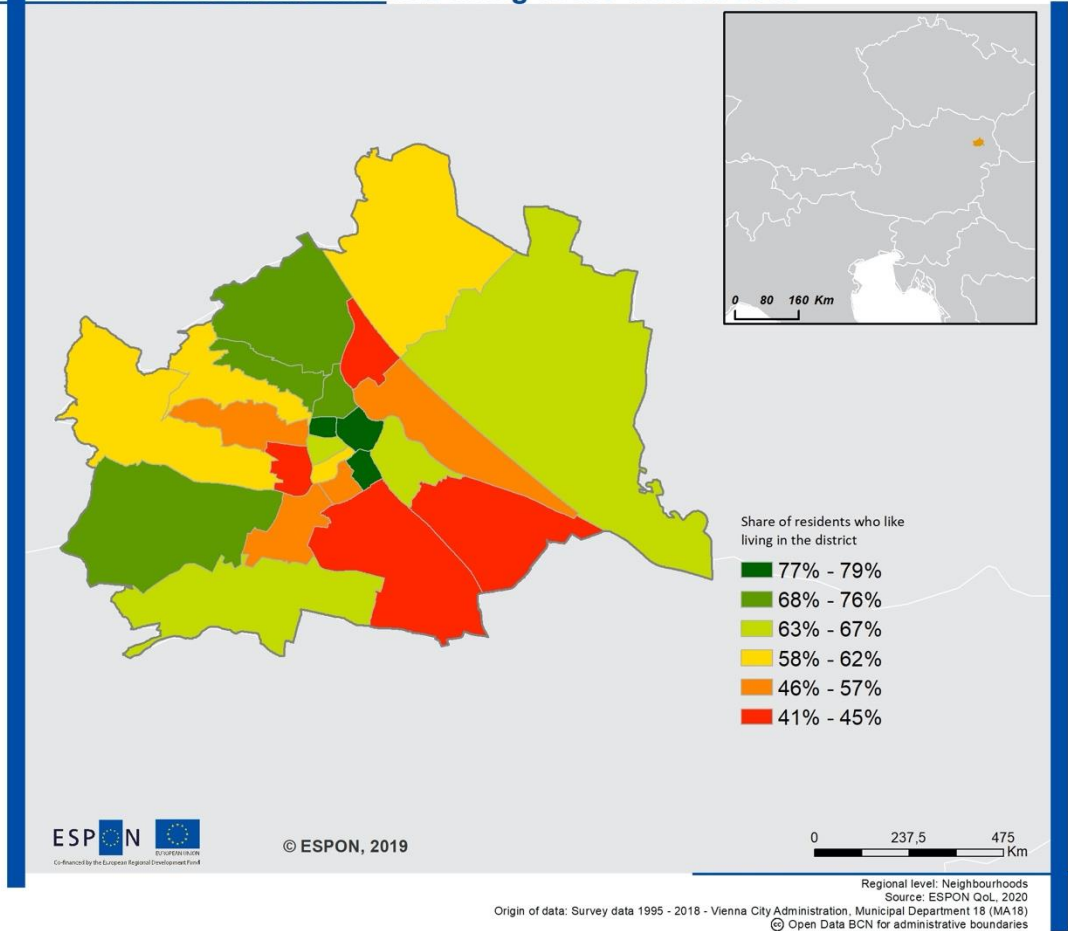
However, survey data for 2018 show, that only 44% of the participants liked living in the 20th district, and 57% like living in the 2nd district. Numbers for the 20th district have not changed much since 1995, as the share was always around 44% (+/- 3%). The trend within the 2nd district was on the rise between in 1995 (~ 46%) and 2013 (~ 63%) and then dropped to 57% in 2018. Compared to the other inner areas of the city, all of these numbers are relatively low.

Confronted with this misperception, interviewees are mostly surprised about the low rates and are not able to fully explain the results. One person proposed investigating results and reasons on a smaller scale, than the district level.

Figure 31, 32, 33, 34 and 35 Share of residents, who like living in the district



Share of residents who like living in the district 2018



Summary of the results

The factfulness-test has shown the following:

- It is a useful tool, which helps in those cases where discrepancies between objective indicators and subjective assessments are assumed or detected. In this case, we already use subjective and objective survey data within the dashboard. This helped to identify discrepancies and look into more details of possible reasons.
- If the test is used to check survey data, oral interviews are needed in order to find a narrative for the discrepancies while looking into the backgrounds of the interviewees. Depending on the sample size, the outcome of the test may show types of reasons for misjudgements.
- The factfulness-test is able to show how people perceive trends and developments over longer time spans.
- When checking the TQoL framework with the interviewees most of them considered it to be complete.
- Following the completion of the factfulness test one gets the feeling, that the 2nd as well as the 20th district are really nice districts to live in, with only a few problems. However, the elaborated dashboards show a much different picture, as the 2nd ranks in position 15 at its best and the 20th ranks in 17th position out of the 23 districts.

5 Synthesis and conclusions

Measuring and applying QoL in urban planning has a long tradition in Vienna. The concept is based on a survey that is repeated several times, starting in 1995, with the latest in 2018. The definition of QoL was developed for the first survey and has been expanded, but always with the aim to keep comparability over time. Quality of life is measured by a set of questions in different domains, such as education, housing, mobility or what the city has to offer. Each of the runs has a focus on a specific life sphere, such as “work and the reconciliation of work and family life” in 2013. The overall aim is to gain information on the interviewees’ individual and subjective assessment of a number of domains, mostly using a scale ranging from 1 to 5 (local school grading system). Interviewees are not only asked about their individual satisfaction with different spheres of life, but rather about a general but subjective assessment of the situation in the given local context (Vienna or residential area). The result supposedly reflects the “image” of the respective locality amongst the residents. Results (at least some) are statistically significant for social groups and for specific neighborhoods.

The territorial level is an important element of the Viennese approach. The focus is on the type of urban area, but not necessarily on the functional urban area or districts. Questions focus on the immediate neighbourhoods, the built-up environment and Vienna as factors influencing quality of life.

The outcomes of the surveys are presented in reports (summary reports and reports for specific topics, e.g. QoL in certain urban areas). Information is used to back up planning (e.g. planning of parking zones) and policymaking. Elements of the extensive data gathered by the surveys are used within specific policy contexts (e.g. Smart City Strategy, gender equality monitoring).

There are a number of elements that serve as success factors and good practice and have the potential to be replicated in other regions:

- First, the surveys are repeated with an interval of five years⁴⁷ and are spatially representative. They have a territorial focus within the questions and hence provide results that display local disparities and nuances. Furthermore, specific groups of citizens can be assessed, as general statistical information is gathered. This implies a large sample size (more than 8 000) and the involvement of professional institutions to conduct the survey.
- Second, the municipal planning department is responsible for these surveys and corresponding reports and has ownership on the process and products. Other departments of the city administration are involved in the preparation of each survey in order to identify and fill data gaps. This allows for a wider use of the data, as the ownership is in a horizontal unit.
- Third, the dissemination in easily accessible summary or specific thematic reports is used as one tool to make the results available to the interested public.

The territorial focus in the representativeness of the data and the types of questions can also be considered as good practice.

Nevertheless, there are also shortcomings, which might need further reflection:

- The efforts and resources needed to conduct the surveys but the wealth of the data stock still seem to be under-utilised. The QoL results might be used much more

⁴⁷ Except 1995 - 2003

systematically for planning and investment decisions. Dissemination in technical reports might fall short to reach the wider public.

- Though the surveys are largely comparable, there are many operational issues still to be resolved for comparing the indicators over time. In this study, we have made a step forward and prepared the data stock so that the indicators used for the dashboard can be compared over time. However, this work could be continued further to better exploit time series and comparisons between different neighbourhoods. Also, objective indicators could be used to gain more insights into differences between objective and subjective indicators.
- A more systematic involvement of the survey to assess planning actions ex-ante and ex-post would contribute to better governance. The role of the unit in guiding policies seems to be implemented just internally within the administration, but is not shared with the wider public.
- The most important shortcoming is that the measurement of the QoL is confined to the administrative boundaries of the city. Vienna is highly interconnected with the surrounding Lower Austrian local authorities. Bratislava, the capital of Slovakia is only about 60 km apart. With Győr, Sopron, Brno and municipalities in Lower Austria, other smaller cities are also in commuting distance. Hence, there might be an even wider scope for measuring QoL in the functional region of Vienna and in the wider border region.
- So far, there is little to none citizen participation. The concept could be further explored – e.g. at the level of districts or local offices for urban renewal who already work with the resident population.

When applying the TQoL concept we find an astonishing coherence between the approaches. All domains and most of the sub-domains are covered. There is continuity as regards the questions of the survey, which evolution over time is described in the reports.

However, when it comes to coding the indicators and establishing a data set, we faced significant problems. Defining indicators on the basis of the questionnaires, selecting indicators for the 23 districts, converting the data with different scales to indicators, selecting indicators that comply with the TQoL framework, representative at district level and available at different points of time was a very time consuming task. Finally, we needed statistical support to extract a usable data set.

When this was achieved, the dashboard offers interesting opportunities to analyse the data set from the survey and combine it with other data (from statistical sources) to gain a better balance between objective and subjective variables. In addition, different dashboards can be used for depicting different points in time (one dashboard for each survey) and for comparing the outcomes of purely survey based indicators with a combined indicator set (objective and subjective indicators). For potential further use a dashboard with only subjective data could be compared with one, filled only with objective data.

Finally, the factfulness test can complement the dashboard for looking closer into those topics, where gaps between objective and subjective indicators occur. The test is particularly useful to question the reason behind misperceptions and to evaluate trends.

6 Recommendations

6.1 How the QoL concept and indicators could be further developed in the region

The most important improvement would be to extend the concept to the functional region and include the Land Lower Austria (and its local authorities). In addition, the wider Vienna region in combination with the cities in the neighbouring countries (Bratislava, Budapest, Győr, Sopron and Brno) could be assessed in a special task (e.g. implemented by an Interreg project).

Moreover, the combination of survey data with objective data might provide a more comprehensive picture of TQoL in Vienna. The application of the dashboard would allow for comparisons over time and between objective and subjective indicators (or a combination of both). If such a combination is envisaged, then also the potential of exploiting big data should be considered.

Expanding the method by a citizen-centric approach, is another recommendation. The neighbourhood offices for urban renewal might serve as focal point for the engagement of citizens in the conceptualisation of the next survey (including additional elements, but not disturbing comparability) and in the co-production of data.

On a very technical level, split questions (e.g. participation, digital connectivity) should be avoided as they produce data gaps and bias not only representativeness at district level but also comparability over time. In addition, for facilitation of further data processing, the data sets for all of the different points in time should be cleaned and aligned. This would allow for an easier comparison over time.

6.2 How the TQoL concept of this ESPON project can be improved and enriched

The first lesson drawn from the Vienna case study is that a combination of subjective indicators gained from specific surveys and objective data from statistical sources is very useful. The dashboard is a simple and intuitive tool to combine information from different sources, even with different points in time (if not too distant) or objective and subjective indicators.

Another lesson for ESPON can be the way in which the TQoL is operationalised in the survey, i.e. by having a sample size large enough to be spatially representative⁴⁸ and designing the sample to be representative for specific social groups. In addition, questions should be designed in a way that the reference to the local neighbourhood is made.

The third lesson is about the continuity of these surveys. There is no use in changing approaches and surveys substantially, when important elements of continuity get lost. Hence, there is always a trade-off between being up to date and comparable over time.

It also might be useful to adopt the TQoL according to the results of the factfulness test, e.g. at the neighbourhood level (urban renewal areas, local agenda offices). There has been criticism of the TQoL framework (Enablers Pillar) that any leisure assets (e.g. sports facilities, night life) have been entirely reduced to availability of cultural assets.

The concluding lesson is, that Quality of Life and its measurement is not so much a question of how and what is measured, but more on who is responsible for the assessment. It is much more important how any collaboration and participation with other departments work, in order to make the results useful for other departments and the implementation of measures corresponding to Quality of Life possible.

⁴⁸ This can only be a model for other local authorities.

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8 Annex

Figure 36 Map of Vienna



Source: Statistik Austria

Table 7 Statistical definition of Vienna and its districts

S: STATISTICS AUSTRIA, data extracted 23.04.2020

Vienna by municipality & political district									
NUTS 3 Code	Fed. Province Identifier	Federal Province	Municipality Identifier	Municipality Name	Municipality Code	Postal Code of the Municipal	Pol. District Identifier	Political District	Pol. District Code
AT130	9	Vienna	90001	Wien	90101	1010	900	Wien 1.,Innere Stadt	901
AT130	9	Vienna	90001	Wien	90201	1020	900	Wien 2.,Leopoldstadt	902
AT130	9	Vienna	90001	Wien	90301	1030	900	Wien 3.,Landstraße	903
AT130	9	Vienna	90001	Wien	90401	1040	900	Wien 4.,Wieden	904
AT130	9	Vienna	90001	Wien	90501	1050	900	Wien 5.,Margareten	905
AT130	9	Vienna	90001	Wien	90601	1060	900	Wien 6.,Mariahilf	906
AT130	9	Vienna	90001	Wien	90701	1070	900	Wien 7.,Neubau	907
AT130	9	Vienna	90001	Wien	90801	1080	900	Wien 8.,Josefstadt	908
AT130	9	Vienna	90001	Wien	90901	1090	900	Wien 9.,Alsergrund	909
AT130	9	Vienna	90001	Wien	91001	1100	900	Wien 10.,Favoriten	910
AT130	9	Vienna	90001	Wien	91101	1110	900	Wien 11.,Simmering	911
AT130	9	Vienna	90001	Wien	91201	1120	900	Wien 12.,Meidling	912
AT130	9	Vienna	90001	Wien	91301	1130	900	Wien 13.,Hietzing	913
AT130	9	Vienna	90001	Wien	91401	1140	900	Wien 14.,Penzing	914
AT130	9	Vienna	90001	Wien	91501	1150	900	Wien 15.,Rudolfsheim-Fünfhaus	915
AT130	9	Vienna	90001	Wien	91601	1160	900	Wien 16.,Ottakring	916
AT130	9	Vienna	90001	Wien	91701	1170	900	Wien 17.,Hernals	917
AT130	9	Vienna	90001	Wien	91801	1180	900	Wien 18.,Währing	918
AT130	9	Vienna	90001	Wien	91901	1190	900	Wien 19.,Döbling	919
AT130	9	Vienna	90001	Wien	92001	1200	900	Wien 20.,Brigittenau	920
AT130	9	Vienna	90001	Wien	92101	1210	900	Wien 21.,Floridsdorf	921
AT130	9	Vienna	90001	Wien	92201	1220	900	Wien 22.,Donaustadt	922
AT130	9	Vienna	90001	Wien	92301	1230	900	Wien 23.,Liesing	923

Source: Statistik Austria

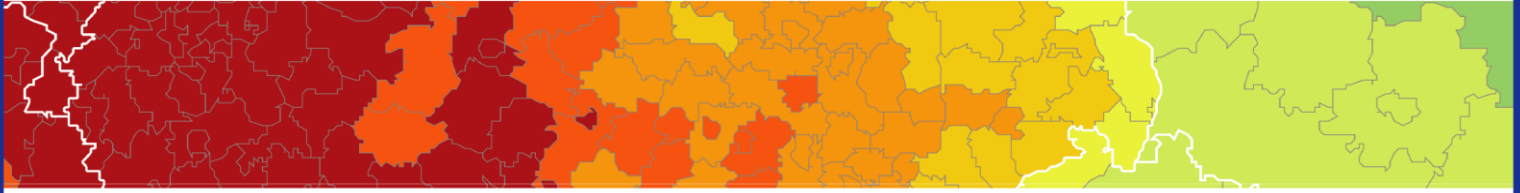
Table 8 Urban Development Plan – Topics ⁴⁹

Domain	Topic	Strategy/Initiative
Vienna: Building for the Future	The Built City (Development management & High-quality urbanity)	Action plan 50/60/70 (Development concepts for areas built from the 1950s to the 1970s) Gründerzeit Action Plan (Guiding framework for the development of selected Gründerzeit areas)
	Space for Growth (Consistent development of land potential; High-quality urbanity for all parts of the	Land mobilisation for urban growth (legal and organisational instruments related to land use policies)

⁴⁹ Vienna City Administration, Municipal Department 18 (MA18) - Urban Development and Planning, 2014, STEP 2025 - Urban Development Plan Vienna, Short Report in English

Domain	Topic	Strategy/Initiative
	city; Efficiency & sharing of responsibilities between the public and private sector; Smart energy planning & smart resource management)	<p>Long-term urban development perspective (development monitoring)</p> <p>Building the city (Building new areas with compact missed-use approach)</p> <p>Development zones (combining competences of public and private partners in suitable areas)</p> <p>Integrating energy and spatial planning (Merging spatial and energy planning at neighbourhood level)</p>
	<p>Centres and Underused Areas (Balanced, polycentric location development; Functionality as a principle)</p>	<p>The polycentric city – Vienna’s centre concept (Strengthening existing and developing new centres)</p> <p>Urbanised! (Transforming underused or one-dimensionally used buildings)</p>
Vienna: Reaching Beyond its Borders	<p>A Business, Science and Research Hub (Production city, Knowledge city, Research city; High-quality office and retail shopping locations; Space for small-scale businesses; efficient commercial transport; efficient commercial transport)</p>	<p>Safeguarding and managing land reserves for industrial enterprises and co-operative business location development in the urban region</p> <p>City of innovations – innovations for the city (Securing spaces for research, development and high-tech production in well-connected locations)</p> <p>Priority zones for office sites (Focusing on large-scale office-projects, high-profile educational and research facilities in designated zones)</p> <p>Shopping centre – Shopping in the centre (Large shopping capacities being created in places where they strengthen retail and service structure)</p> <p>Urban spaces for entrepreneurial visions (Securing space for small enterprises and businesses)</p> <p>Clean, silent, reliable (Strategies for efficient and environmentally friendly commercial transport)</p>
	<p>The Metropolitan Region (Good governance for the city region; Further Development of the centre region)</p>	<p>Further development of regional and international co-operation structures</p> <p>Regional co-operation spaces (Quality and development targets and corresponding plans are yet to be defined)</p> <p>City-environs mobility partnerships (Mobility partnerships along mutually defined transport corridors in city’s surroundings)</p> <p>Centre mobility management (Development of transnational mobility management with major public transport providers)</p>
Vienna: Networking the City	<p>Open spaces: Green & urban (Strengthening and further developing networks of green and open spaces;</p>	<p>Vienna’s open space network (Making the open spaces in the city’s inner districts more attractive)</p> <p>Recreation zones “Vienna woods Northeast” and “Lobau Environs” (Creating a</p>

Domain	Topic	Strategy/Initiative
	High open space quality in all parts of the city)	<p>recreation area in the north-eastern part of Vienna and developing a natural leisure area in the environs of the Lobau wetlands)</p> <p>Urban greenery instead of air conditioning (Integrating climate protection and climate adaptation in developing urban quarters and open spaces)</p> <p>Quantitative and qualitative open space parameters (Adoption of existing quantitative and supplementing them with quality criteria for the provision of green and open spaces)</p> <p>Fair shares in, and intelligent use of, the city (Development of measures for more quality, the better conservation of resources and more efficiency in the design of open space)</p> <p>Reviving urban spaces together (Co-operation with private parties and more citizen involvement in the development and use of open space)</p>
	<p>Diversified mobility in 2025 (Priority for eco-friendly means of transport; Space for people; New instruments of mobility management)</p>	<p>Optimisation and upgrade of public transport (Expansion and improvement of the public transport system)</p> <p>Integration and networking of eco-friendly means of transport (Creation of better options for combining eco-friendly means of transport)</p> <p>Walking and cycling – strong partners for eco-friendly urban transport (Creation a dense and attractive network of walking and cycling paths)</p> <p>From street space to public space (Renovation and improvement of quality of public space)</p> <p>Mobility management for residential quarters and company locations (New instruments for tailored mobility concepts, that allow for short distances that can be travelled with environmentally friendly modes of transport)</p>
	<p>Social infrastructure (Area management & monitoring for education infrastructure; Inclusive urban development)</p>	<p>Space for education (High-quality space for educational facilities)</p> <p>Education infrastructure for upward mobility processes (Strengthening urban quarters through the identification of areas with a high demand for facilities that foster upward mobility e.g. libraries)</p>



ESPON 2020 – More information

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