Original research article

Satisfaction with the quality of life in Brno: A perception survey

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ABSTRACT

The article is focused on the topic of the quality of life of citizens in Brno (Czech Republic). In the introduction the phenomenon of quality of life is described and various methods of measurement of the quality of life are summarized. In the empirical part a questionnaire survey based on the European Commission 2013 survey is conducted that tries to determine the quality of life of Brno citizens (N = 420), it focuses on their satisfaction with, and attitudes toward, selected aspects of life in Brno. Several aspects of life in Brno, such as the parking facilities and environmental factors have been identified as a source of dissatisfaction in Brno, which is in general very low. Other factors that might contribute to lower levels of satisfaction are the difficulty in finding jobs and cheap housing, and the quality of administrative services. A comparison of the collected data with two other Czech cities (Prague and Ostrava) was also conducted.

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Introduction

Globalization processes change the character of particular societies, regions and cities in all basic aspects of life [1]. Research papers focused on the quality of life (QOL) tend to describe the main factors that determine the QOL and compare the QOL in various regions or localities. QOL is a complex and multidisciplinary construct. Especially before the local government elections, QOL becomes a rather popular and sometimes even provocative term [2, 3]. Various institutions (OECD, European Commission, WHO) use different measures in order to compare the quality of life of people living in different regions. For example, OECD created a world map of well-being that offers a comparison of various aspects of life satisfaction among different countries. It posits the Czech Republic slightly below the OECD satisfaction average [4]. So what is QOL and how is it measured?

Quality of life examines material, economic, psychological, social and other aspects of a healthy and meaningful life and therefore it is an object of interest for many fields such as medicine, sociology, environmental science, economics, political science, anthropology, psychology, and psychiatry [1, 3, 5, 6]. Social demography, in which the main focus is to spatially discriminate social, cultural and environmental conditions [2], can also be added to the above-mentioned disciplines.
The term QOL was used for the first time in the 1920s in the context of political reflections of economic development and the role of the state in the support of the lower social classes. The impact of governmental subsidies on the QOL of poor people and on the overall state of public finances was at the centre of these discussions [7]. In the late 1950s an American economist J. K. Galbraith used the term QOL connected with a substantial emphasis on a traditional way of life as a counterbalance to one-sided consumer orientation. W. W. Rostow, in his model of economic growth, was the proponent of an idea that the stage of high mass consumption will lead to a stage of looking for a new quality of life [1]. The term QOL was also used as an alternative to the affluent society concept, which was at that time more and more often questioned as an adequate measure of social prosperity. Opposing the common view it became clear that continuous economic growth does not necessarily lead to the growth of life satisfaction, but more likely to the growth of needs that can not always be fulfilled [7].

Based on the earlier philosophical debate the scientific community tried to conceptualize the term QOL, which led to both the identification of specific dimensions of QOL, and to the adoption of the QOL construct into the developmental strategies of various states, regions and cities and international organizations. Numerous definitions of QOL can be found in the literature, but within the last 30 years none of them have been universally accepted. The situation is also complicated by the fact that other terms, such as social well-being, subjective well-being, social welfare, standard of living, satisfaction and human development, are used as equivalent or analogic terms to the QOL [1, 2, 7].

Since the 1970s the term QOL is also used in medicine. In recent years there has been a wide consensus in many areas of clinical medicine about the need to monitor the QOL of the patients as one of the fundamental predictors of health [6, 7, 8]. For example, the World Health Organization (WHO) defines quality of life as follows: “The quality of life is determined by the way persons perceive their positions in life in the context of the culture they live in, as well as in relation to their goals, expectations, lifestyle and interests” [9].

As mentioned earlier, the QOL phenomenon is now not only used in the academic debate, but can be found in public planning and governmental developmental strategies even in the region of Central Europe [8, 10, 11, 12]. Various policies are focused mainly on economic, environmental, or educational conditions and sustainable development [13, 14].

The QOL can be measured by a wide range of both objective and subjective indicators, which are selected according to the goal of the research and the evaluation of the researcher [3]. Objective measuring of QOL strictly follows economic, social, health and environmental conditions that influence the life of an individual [4]. Although the objective indicators of the quality of life are part of most of the QOL research, the subjective indicators that are based on the perception of their QOL by individuals are getting more attention. These approaches to QOL reflect the subjective satisfaction with life based on cognitive evaluations and emotional experience [15, 16].

Probably the widest survey in this area was conducted by European Commission. It has been monitoring the evolution of public opinion on a wide range of topics connected to quality of life in all its membership states since 1973. In the last survey, a sample of a total of 41,000 respondents was interviewed in 79 cities and 4 urban agglomerations on their perceptions of QOL in their home cities [17]. In the Czech Republic this survey was conducted in Prague and Ostrava. There are various other methods of QOL measurement that differ in their level of aggregation. The basic spatial levels of the measurement are the regional and national level, which allow the comparison of the selected territorial units.

One of the influential methods of measurement at the regional level is the Regional Index of Quality of Life [18]. Other authors suggest measuring the QOL at the regional level with the following indicators: 1) Material well-being (e.g. GDP per person); 2) Health; 3) Political stability and security; 4) Family life (e.g. divorce rate); 5) Community life; 6) Climate and geography; 7) Job security (e.g. unemployment rate); 8) Political freedom; and 9) Gender equality (ratio of average male and female earnings) [15].

At the national level several indicators are commonly used. The Human Development Index (HDI) is used by the UN and it consists of the average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living [19, 20, 21]. The Index of Quality of Life (ILF) is a method assessing nine categories: cost of living, health care, leisure time, culture, economy, infrastructure, environment, freedom, health, and safety [22]. The Schedule for the Evaluation of Individual Quality of Life (SEIQoL) evaluates QOL according to the respondents’ actual perception of health, family, and work conditions, combined with attitudes to religion, finance and education [23]. Potůček et al. [24] suggest the usage of the Index of Quality and Sustainability of Life (IKUZ) that covers four main areas of the development of society: socio-political, social, economic and environmental.

The main goal of the survey was to analyse the attitudes and perceptions of citizens of Brno about the communal QOL with a focus on the evaluation of the quality of public services. This text could provide a guideline to the local administrators and policy makers in Brno to improve the living conditions in the city.

**Materials and methods**

This paper is based on our current research conducted in the summer of 2014 in the Brno area. A written questionnaire was chosen as a method of data collection. We followed the framework of a questionnaire created by the European Commission in their survey “Quality of life in cities” [17]. The original research was structured into four sections: (1) satisfaction with life in the city and its specific aspects; (2) people’s attitudes towards selected aspects of life in the
city; (3) people’s satisfaction with their personal situation, (4) most important issues facing the city.

In this article we will address the first two sections that produced the most interesting results. The questions were all formulated on a four-point Likert scale (1 = very satisfied, 2 = satisfied, 3 = not satisfied, 4 = not satisfied at all). Resp. in section one and three 1 = absolutely agree, 4 = absolutely disagree. In most cases response options 1 and 2 (very satisfied and satisfied) and 3 and 4 (not satisfied and not satisfied at all) are merged and reported together for better understanding.

By way of the questions, citizens were asked to express their views on various aspects of urban life. How do they assess the quality of services such as public transport, health care, education, cultural and sport facilities? Do they consider migration an asset for their city? How do they perceive job availability and affordable housing in their cities? Are people satisfied with the place they live in, the life they lead, or the financial situation of their household?

The last part of the questionnaire asked the respondents about their sex, age, education, occupation and their place of residence within Brno.

Because of the character of the data (ordinal data) the statistical analysis is based on descriptives [25, 26]. The potential differences in attitudes among groups defined by sex, age, level of education and occupation were statistically tested by a Chi-square test. The level of significance is in all analyses $p < 0.05$. The level of significance is adjusted by the Bonferroni correction [27], according to which the level of significance is $(p = 0.05)$ divided by the number of comparisons and a hypothesis is tested on the corrected level.

## Results

### Research sample

The research sample consisted of 420 respondents in total. The majority of the respondents were female (72%). The age structure is depicted in Chart 1. The majority of the respondents were young adults (61.9%); the younger and older age groups are clearly under-represented compared to the population [28]. The majority of the respondents had either a college (46.9%) or university (40.7%) degree. In the occupational structure students prevailed (40.7%), followed by employees (30.7%) and retirees (19%). The rest of the research sample (9.5%) consisted of unemployed, self-employed and respondents on maternity leave. The respondents were asked to specify their place of residence. The following municipal districts had the highest representation: Židenice (23.1%), Brno-North (18.3%), Brno-Centre (15.2%), Žabovřesky (6.7%), and Královo Pole (6%).

For practical reason of statistical testing using contingency tables [29] that assume a certain number of expected observations in each cell, we further aggregated the groups of respondents according to the age; we merged age groups 15–18 and 19–34 in to a group called “younger adults”, and the age groups 35–49 and 50–64 into a group called “older adults”. The last age group, “seniors”, consists of respondents that are older than 64 years. Because 87.6% of respondents have a college or university education, three other categories (elementary, practical and vocational) were merged into one category (other education). Because the number of respondents in the research sample that reported they were “unemployed” or “on maternity leave” was too low for chi-square statistical testing and could not be sensibly merged together or with other groups, they are discarded in the analyses done according to the occupation of respondents.

![Chart 1 – Age structure (in percent)](chart1.png)

### Satisfaction with life in Brno: free time, education, health-related factors, infrastructure and environment

The first indicator of the quality of life in Brno analysed in this survey was the overall satisfaction of respondents with life in their city. The results show a very high level of satisfaction, with 92.7% of the respondents declaring themselves “very satisfied” or “fairly satisfied”. The majority of Brno’s citizens are also “very satisfied” or “fairly satisfied” with the cultural facilities (92.8%), schooling facilities (91.5%), health care (84.9%), and public transport (81.7%). Slightly lower is the respondent’s satisfaction (“very satisfied” or “fairly satisfied”) with the availability of retail shops (70.4%), sporting facilities (66.1%), public spaces (67.3%), green places (62.2%), and waste separation (59.7%).

Environmental aspects such as the quality of the air, level of noise, cleanliness and road infrastructure were perceived as unsatisfactory by more than half of the respondents. Six out of 10 people find the state of the buildings and streets (58.3%), as well as the quality of the air (60.8%) and the level of noise (60.7%) unsatisfactory (“not very satisfied” or “not at all satisfied”). The cleanliness in the streets is more critically is perceived (68.2%), and finally, eight out of 10 people (81.3%) are quite or very dissatisfied with the parking possibilities in Brno (Table 1).

There were no significant differences found among respondents according to their sex. There were three significant differences found according to the age of the respondents. Senior respondents were significantly more satisfied with the public transportation compared to the other age groups, $\chi^2(6, N = 419) = 21.83, p < 0.001$. On the
other hand the level of satisfaction with cultural, $\chi^2(6, N = 413) = 35.56, p < 0.001$, and sport facilities, $\chi^2(6, N = 401) = 22.07, p < 0.001$, is significantly higher in the younger adults group. Only one significant difference was found in the sample according to education. The respondents with a university or college education reported a significantly higher satisfaction with the sport facilities, $\chi^2(6, N = 401) = 19.26, p < 0.01$, compared to the respondents with lower education. Three significant differences were found among respondents according to their occupation. Retired individuals were significantly more satisfied with the public transportation in Brno compared to the students, $\chi^2(9, N = 402) = 28.33, p < 0.001$. Other differences among the groups were not significant. Furthermore, the students were significantly more satisfied with the cultural facilities, $\chi^2(9, N = 396) = 29.09, p < 0.001$, and with the state of public places such as streets and squares, $\chi^2(9, N = 396) = 26.76, p < 0.01$, compared to the other groups.

Respondents displayed rather positive attitudes towards foreigners and their impact on the city: almost six out of ten people agreed that the presence of foreigners is good for Brno (58%) and that they are well integrated (57.7%).

The work of the public administration was perceived with more hesitation and doubt. Less than half of the respondents agreed that that local administration can be trusted (44.9%), that administrative services help effectively and efficiently (44.2%) or that Brno is committed to fight climate change (42.6%).

Respondents were asked whether it is easy to find a job in their city. For only 45.4% this is a simple or rather simple task. Finding affordable accommodation seems to be the most difficult task for respondents: more than six out of ten respondents (62.7%) said that it is not easy to find good housing for a reasonable price (Table 2).

One significant difference was found between men and women. Women significantly agree more with the statement that the administrative services in Brno are efficient, $\chi^2(3, N = 407) = 12.72, p < 0.005$. It is worth mentioning that it is not a significant difference in reported feelings of safety. Compared to men, women feel less secure in their neighbourhood, $\chi^2(3, N = 411) = 12.17, p = 0.007$ (corrected level of significance in this analysis is $p < 0.006$). There was no age dependency found in any of the variables.

Several differences were found among the groups according to their level of education. The university educated are significantly more tolerant of the presence of foreigners in Brno, compared to the other two groups, $\chi^2(6, N = 410) = 25.59, p < 0.001$. The tolerance of the respondents from the group with a lower than college education is the lowest of all the groups. The university educated group also feel significantly more secure in both Brno as a whole, $\chi^2(6, N = 417) = 38.09, p < 0.001$, and in

<table>
<thead>
<tr>
<th>Satisfaction with individual aspects of life in Brno</th>
<th>Satisfied</th>
<th>Not satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>n&lt;sub&gt;i&lt;/sub&gt;</td>
<td>f&lt;sub&gt;i&lt;/sub&gt; (%)</td>
<td>n&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td>Overall satisfaction with life in Brno</td>
<td>383</td>
<td>91.1</td>
</tr>
<tr>
<td>Cultural facilities (concert halls, theatres, museums, libraries)</td>
<td>383</td>
<td>92.8</td>
</tr>
<tr>
<td>Schools and other educational facilities</td>
<td>379</td>
<td>90.2</td>
</tr>
<tr>
<td>Public transport, for example buses and trams</td>
<td>340</td>
<td>80.1</td>
</tr>
<tr>
<td>Health care services, doctors and hospitals</td>
<td>353</td>
<td>84.9</td>
</tr>
<tr>
<td>Availability of retail shops</td>
<td>292</td>
<td>69.5</td>
</tr>
<tr>
<td>Sports facilities, such as sport fields and indoor sport halls</td>
<td>265</td>
<td>63.1</td>
</tr>
<tr>
<td>Public spaces such as markets, squares, pedestrian areas</td>
<td>276</td>
<td>67.3</td>
</tr>
<tr>
<td>Green spaces such as parks and gardens</td>
<td>259</td>
<td>62.2</td>
</tr>
<tr>
<td>Waste separation such as containers, collection places</td>
<td>251</td>
<td>59.8</td>
</tr>
<tr>
<td>The state of the streets and buildings in the neighbourhood</td>
<td>172</td>
<td>40.5</td>
</tr>
<tr>
<td>The quality of the air</td>
<td>164</td>
<td>39.0</td>
</tr>
<tr>
<td>The noise level</td>
<td>154</td>
<td>36.7</td>
</tr>
<tr>
<td>Cleanliness</td>
<td>132</td>
<td>31.4</td>
</tr>
<tr>
<td>Parking facilities</td>
<td>85</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Citizens’ attitudes towards selected aspects of life in the city: safety, institutions, social and physical environment, overall satisfaction

In this section respondents were asked to describe their attitudes about various aspects of living in the city, such as employment opportunities, the housing situation, integration of foreigners, safety and trust, local administration and environment.

The results suggest that people feel safe and secure in their city: feelings of safety and trust were ranked most highly – and were demonstrated by statement "I feel safe in my neighbourhood" (74.45% “agree” or “rather agree”) and “Most people in my neighbourhood can be trusted” (69% “agree” or “rather agree”). In general more than half of the respondents felt safe in Brno (55.2%).
their neighbourhood, χ²(6, N = 411) = 51.66, p < 0.001. The same pattern emerged in questions related to the level of trust towards people in the neighbourhood, χ²(6, N = 407) = 21.33, p < 0.01 and in Brno in general, χ²(6, N = 406) = 19.37, p < 0.01.

The analysis according to occupation discovered two significant differences. Students and retired respondents feel relatively less secure in Brno compared to employees, χ²(3, N = 400) = 36.16, p < 0.001. Students also have a significantly lower level of trust of people in Brno compared to the other groups, χ²(3, N = 389) = 33.76, p < 0.001.

Interesting results in this section raise a question - to what extent are the differences in the perception of Brno as a secure place and the level of trust caused or mediated only through education and occupation and to what extent they are determined by the district in which the respondents live. The Pearson correlational analysis was performed among the four variables: security in Brno city and neighbourhood, trust levels of people in Brno city and the neighbourhood. Extremely high positive correlations were found between the feelings of security in Brno city and in the neighbourhood of the respondents (r = 0.68, p < 0.01) and between the level of trust of the citizens in Brno and in the neighbourhood (r = 0.62, p < 0.01). Other correlations were low or moderate. These results suggest that the feelings of security and the level of trust within the immediate and wider surroundings are interconnected; however the exact nature of the relationship is hard to determine without further research.

In order to determine the influence of the actual risk of being a victim of the crime we split the places of residence into two categories: more and less secure, on the basis of the criminality index [30]. Then we compared the regions with higher and lower criminality according to the feelings of security in the neighbourhood and in Brno, and the level of trust towards people in the neighbourhood and in Brno. The only variable that was influenced by the actual level of criminality was the feeling of security in the neighbourhood, residents living in the safer city districts feel, unsurprisingly, significantly safer in their neighbourhood, χ²(3, N = 407) = 20.00, p < 0.001. Therefore, we can conclude that other factors, namely education and occupation, influence the feelings of security in the city and the level of trust towards neighbours and citizens of Brno in general.

### Comparison with European commission research

If we put our data side by side with the satisfaction of citizens’ in Prague and Ostrava [17], some interesting comparisons can be made. It seems that people are generally more satisfied with life in Brno (92.7%) than in Prague (90%) or Ostrava (79%). Subjectively, the majority of people in all three cities feel satisfied with the life they lead (88%) and the place they live in (90% Brno, 87% Ostrava, 93% Prague).

If we look at individual indicators, we may conclude that citizens in Brno are significantly more satisfied with educational facilities (91% Brno, 79% Ostrava, 75% Prague), cultural facilities (93% Brno, 84% Ostrava, 92% Prague) and health care (85% Brno, 80% Ostrava, 80% Prague). On the other hand people in Brno are less satisfied with the availability of retail shops (71% Brno, 93% Ostrava, 90% Prague), public spaces (67% Brno, 73% Ostrava, 80% Prague), streets and buildings (42% Brno, 78% Ostrava, 69% Prague), sports facilities (66% Brno, 72% Ostrava, 72% Prague), public transport (81% Brno, 90% Ostrava, 88% Prague), noise (40% Brno, 51% Ostrava, 49% Prague), cleanliness (32% Brno, 44% Ostrava, 43% Prague), and green spaces (62% Brno, 72% Ostrava, 74% Prague).

### Table 2 – Attitudes of Brno citizens towards chosen aspects of life in Brno (n – absolute frequency, f – relative frequency of all cases)

<table>
<thead>
<tr>
<th>Attitudes towards selected aspects of living in the city</th>
<th>Agree</th>
<th></th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied living in Brno</td>
<td>383</td>
<td>92.7</td>
<td>37</td>
</tr>
<tr>
<td>I feel safe in my neighbourhood</td>
<td>306</td>
<td>74.5</td>
<td>105</td>
</tr>
<tr>
<td>Generally speaking, most people in my neighbourhood can be trusted</td>
<td>281</td>
<td>69.0</td>
<td>126</td>
</tr>
<tr>
<td>The presence of foreigners is good for Brno</td>
<td>245</td>
<td>59.0</td>
<td>165</td>
</tr>
<tr>
<td>I feel safe in Brno</td>
<td>230</td>
<td>55.2</td>
<td>187</td>
</tr>
<tr>
<td>Foreigners who live in Brno are well integrated</td>
<td>229</td>
<td>57.7</td>
<td>168</td>
</tr>
<tr>
<td>Generally speaking, most people in Brno can be trusted</td>
<td>192</td>
<td>47.3</td>
<td>214</td>
</tr>
<tr>
<td>Generally speaking, the public administration in Brno can be trusted</td>
<td>184</td>
<td>44.9</td>
<td>225</td>
</tr>
<tr>
<td>It is easy to find a job in Brno</td>
<td>183</td>
<td>45.4</td>
<td>220</td>
</tr>
<tr>
<td>The administrative services of Brno help people efficiently</td>
<td>180</td>
<td>44.2</td>
<td>227</td>
</tr>
<tr>
<td>Brno is committed to fighting climate change (e.g. energy efficiency, green transport)</td>
<td>167</td>
<td>42.6</td>
<td>225</td>
</tr>
<tr>
<td>It is easy to find good housing at a reasonable price in Brno</td>
<td>150</td>
<td>37.3</td>
<td>252</td>
</tr>
</tbody>
</table>
Discussion

As OECD declares, understanding people's level of well-being and what determines it is a crucial part of gearing public policies towards better achieving society's objectives. Policies to promote growth, jobs, equity and environmental sustainability have greater impact when they take into account the economic and social realities of where people live and work [4]. In our study we found that the majority of citizens of Brno (92.7%) are overall satisfied with the life in their city. This corresponds with the results of a survey conducted in Brno, where 91.9% of respondents agreed that they are satisfied with life in Brno [31].

If we look at individual indicators, Brno citizens are most satisfied with its cultural facilities (92.8%), schooling facilities (91.5%), health care (84.9%), and public transportation (81.7%). There is lower level of satisfaction with the environmental aspects of living in Brno: six out of 10 people find the quality of air (60.8%), and the level of noise (60.7%) unsatisfactory, the cleanliness of the streets is even more critically perceived (68.2%), and finally, eight out of 10 people (81.3%) are dissatisfied with the parking possibilities in Brno. This result is in accordance with the 2013 survey [30], in which the following aspects were identified as the most problematic: road infrastructure and lack of parking places (80.3%), together with road traffic, untidiness (in the city centre, in the parks), the presence of groups of socially maladjusted people in the streets, and public transport (expensive, overcrowded, low quality).

The comparison of groups of respondents according to their sociodemographic characteristics showed some interesting differences in satisfaction. The younger and more educated respondents are significantly more satisfied with the sport and cultural facilities. More educated respondents are also more satisfied with the state public services. On the other hand, seniors are relatively more satisfied with the quality of public transportation.

In the second section we focused on citizens' attitudes toward selected aspects of life in the city. Most of the respondents feel safe (74.5%) and trust people (69%) in their neighbourhood. More than half of the respondents (55.2%) agreed that they felt safe in the city. These results comply with the results of the European Commission survey [16], which suggest that people commonly feel safer in their neighbourhood than in the city as a whole. The majority of the respondents (62.7%) agreed that it is difficult to find housing at a reasonable price in Brno, and more than half of the respondents (54.6%) agreed that it is difficult to find a job, and a similar number (54.6%) were dissatisfied with the work of public administrators.

Several interesting significant differences in attitudes were found among respondents according to their level of education. Not surprisingly, the more educated people are more tolerant of the presence of foreigners in Brno. They also feel more secure in their neighbourhood and in the city as a whole; they trust more people in their neighbourhood and in Brno in general. The factor of education seems to be a more influential source of differences in the above-mentioned variables than the actual crime rate in Brno. The crime rate is a significant source of differences only in the perceived security in the neighbourhood. According to the occupational status, employees seem to be the group with the highest reported feelings of security in Brno.

Conclusion

In the presented research we conducted a survey focused on the quality of life of the citizens of Brno and their satisfaction with, and attitudes towards the various aspects of life in Brno. The levels of satisfaction are generally very high. Environmental factors (quality of the air, noise), cleanliness and the number of parking facilities were identified as the major sources of dissatisfaction among the Brno citizens. The other factors that might contribute to lower levels of satisfaction are the difficulty of finding a job or cheap housing, and the quality of administrative services. The survey can be used as an inspiration for similar researches on the topic of the quality of life in other municipalities in the Czech Republic.

Conflict of interest

The authors have no conflict of interest to disclose.

REFERENCES


