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Reflexion of citizens' needs in city strategies: The case study of selected cities of Visegrad group countries

Abstract — Citizen-centric approach calls for respecting citizens' needs in strategic planning without defining them. This article reveals the gap in the definition of citizens' needs concept, and as a response, it proposes comprehensive specification. Special attention is given to satisfaction surveys and the explanation of the relationship between citizens' needs and strategic planning. The case study explores two Flash Eurobarometer reports on Quality of Life in European Cities and strategic plans of selected cities to find out if the needs of citizens are respected. As the examples, for the case study, are selected cities of Visegrad group countries for their common totalitarian history and cultural proximity. Satisfaction surveys are utilized in both ways; as the product of strategic planning and as the input to strategic planning. The product view brings the answer to the question how successful cities are in dealing with problem issues. The input view takes current problem issues and compares them with future strategic plans to see if they include solutions to problem issues.

Keywords — *citizen-centric approach; citizens' needs; Visegrad group; European Union; satisfaction; Maslow*

Introduction

Strategic planning, which involves mainly setting of agenda and prioritization, should respect citizens' needs. There is an overall consensus among academics (Osborne & Gaebler, 1992; Chapin & Denhardt, 1995; Denhardt & Denhardt, 2000; Schedler & Summermatter, 2007; Dudley et al., 2015; Kristianssen & Olsson, 2016; Ceballos & Larios, 2016; Joss et al., 2017) and professionals (UNDEPA, 2000; Chadwick & May, 2003; Crețu & Crețu, 2014; Olabe, 2017) that local government strategies should respect citizens' needs and demands. However, research literature does not offer a clear definition of citizens' needs except they concern services offered by the public administration. Moreover, there are different views on the question of who should define the needs of citizens and who should decide which ones will be fulfilled. Should they be citizens themselves or public administration officials?

One direction of research emphasizes the role of experienced and skilled local government officials who are professionals. They know the best what do citizens need, what is the current state of services provided, what should be done according to new trends, etc. In this approach, citizens' view is not appropriate, as it does not match objective output measures of service delivery (Stipak, 1979; Glaser & Bardo, 1994; Van de Walle & Van Ryzin, 2011; Van Ryzin, 2013).

Second approach says that citizens evaluations and participation have proven to be quite useful and reliable tool to enhance public services (Brudney & England, 1982; Smith & Huntsman, 1997; Swindell & Kelly, 2000; Denhardt & Denhardt, 2000; Ho & Coates, 2004; Neshkova & Guo, 2012; Wu & Jung, 2016; Nabatchi et al., 2017). That is why citizens should be given the opportunity to express their needs. If citizens are unsatisfied with some issue, it means that they need to change this situation. Cities can use individual questionnaires, electronic voting systems, or some other crowdsourcing tools to find out what their citizens need (eg. Rogerson, 1999; Zumbo & Michalos, 2000; Mendes & Motizuki, 2001; Santos & Martins, 2007; Das, 2008; Hosio et al., 2015; Certoma et al., 2015; Ruiz-Correa et al., 2017).

What is missing in the contemporary research is a comprehensive view of citizens' needs. Mainly, the significant gap remains in our understanding of the citizens' needs concept. In response to these concerns, the purpose of this article is to answer three theoretical questions: (1) what are citizens' needs, (2) who defines citizens' needs, and (3) who prioritize citizens' needs.

The article also shows the example of data analysis based on Flash Eurobarometer reports - Quality of Life in European Cities (Flash Eurobarometer 366, 2013; Flash Eurobarometer 419, 2015) studying the relationship between citizens' needs and city strategies. This part of the article will answer four research questions:

- Q1. Do cities focus their activities on the solution of problem issues?
- Q2. How successful are cities in dealing with problem issues when considering the severity of the problem?
- Q3. To what extent are the strategic plans of selected cities in line with citizens' needs?
- Q4. What common approaches to tackle problem issues can be identified in strategic plans of selected cities?

The concept of citizens' needs

This chapter defines the concept of citizens' needs in the perspective of local policy planning. It will include only those needs of citizens that local government can satisfy in some way. Sometimes citizens are equated with customers, but citizens are not in the same position as customers. As Denhart and Denhart (2000) emphasized "Government also serves those who may be waiting for service, those who may need the service even though they are not actively seeking it, future generations of service recipients, relatives and friends of the immediate recipient,

and on and on. There may even be customers who don't want to be customers—such as those receiving a speeding ticket" (Denhart and Denhart, 2000; p. 555).

Although the topic of this article concerns needs of citizens, it is possible to start with individual needs as the citizens are primarily humans and because the most popular model of human needs was formulated by Maslow, this article will use this model. Abraham Maslow in 1943 specified the theory of human motivation and divided human needs into five categories. These needs (physiological, safety, belongingness, esteem, and self-actualization) are related to each other forming a hierarchy with the physiological needs at the bottom and self-actualization at the top. Maslow later expanded the theory with two lower-level growth needs (cognitive and aesthetic) prior to general level of self-actualization (Maslow and Lowery, 1998) and one (transcendence) beyond that level (Maslow, 1971). Needs on the lowest positions are such needs that keep people alive. Only when these needs are fulfilled, then people focus on higher needs.

High popularity of Maslow's model does not necessarily mean that it is free of criticism. The opposite is true. Critics as Hall and Nougaim (1968), Washba and Bridwell (1976), Podeschi and Pearson (1986), Shaw and Colimore (1988) mainly criticised the domination of deficient needs, activation of higher needs after gratification of lower needs, the lack of culture influence and overemphasized individuality, and difficult measurement of self-actualization. Summarization of main critical remarks is published in Pearson and Podeschi (1999) or Fallatah and Syed (2018). On the other hand, Maslow's model also has its proponents undertaking empirical tests that confirmed the logic of the model e.g. Stum (2001), DeVaney and Chen (2003), Siltan (2011). Extensive advocacy of Maslow's model is published in Littrell (2011).

In this article will be used a model with five levels of hierarchy, which sufficiently forms the basis for the definition of citizens' needs. First, I will describe each level of needs individually with activities and services that local government can offer for particular level. Then I will develop the connection between citizens' needs and participation. This article clearly shows that local governments can help to satisfy citizens' needs on all levels of this hierarchy.

Physiological needs on the bottom of the hierarchy "are the most prepotent of all needs" (Maslow, 1943; p. 373). These needs ensure that the person remains alive (food, water, shelter, warmth). Local governments support their citizens by many ways in satisfying physiological needs. For example, government incentives for local companies, designed to increase the availability of jobs, focus on the lowest level of needs. People having a job are independent in satisfying their basic needs unlike those who do not have a job. Employment support is, therefore, a significant goal for local governments (Ferguson et al., 2007; Froy & Giguère, 2011; Campbell et al., 2013). On the lowest level of needs hierarchy, local governments are also responsible for the provision of drinking water, healthcare services, housing, education, transportation and other public services, which are not mentioned on the higher levels.

The second level of needs focuses on the safety issues. "If the physiological needs are relatively well gratified, there then emerges a new set of needs, which we may categorize roughly as the safety needs" (Maslow, 1943; p. 376). Local governments can help to satisfy safety needs of their citizens by establishing the legal order, law enforcement, fire protection, social services, crisis management, waste management, and animal control.

The third level covers the need of belonging. "If both the physiological and the safety needs are fairly well gratified, then there will emerge the love and affection and belongingness needs" (Maslow, 1943; p. 380). The responsibility of local government is not to be a mediator in love relationships but to secure equal rights for all so that people do not feel excluded from society. Government support to community life and civic organizations is also essential.

At the fourth level, we can find esteem needs. "Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability, and adequacy of being useful and necessary in the world" (Maslow, 1943; p. 382). Local government can support self-esteem of their citizens by giving them the possibility to be heard, participate in the public matters, express an opinion on the state of affairs, etc. Citizens will be in this way reassured of officials' interest in their opinion, and they will also be more likely to support the implementation of related policies and projects (Potapchuk, 1996). Participation empowers citizens giving them the feeling of importance (Fischer, 2006).

The highest level of needs is self-actualization. "It refers to the desire for self-fulfillment... desire to become more and more what one is, to become everything that one is capable of becoming" (Maslow, 1943; p. 382). In line with this idea citizens become more and more citizens. Local governments on this level of needs can offer their citizens new ways of participation (citizen sourcing tools) giving the possibility to bring new ideas, co-produce new services, participate on decision-making, and take the initiative and responsibility.

Proposed local government activities to citizens' needs revealed division into two groups. First group (lower citizens' needs – LCN) corresponds to the view of the citizen as customer. Physiological, safety and belonging needs fall into this category. Considering this group of needs, citizens expect their local governments to provide some services. However, it must be said that citizens role is not absolutely passive. People are responsible for active search for job, their activity is welcomed in community life, or they may help with the provision of services as volunteers. Second group of needs (higher citizens' needs – HCN), which covers esteem and self-actualization, requires more citizens' activity. At this level, citizens manifest their interest in public matters by participating in city government. At the esteem level their interest is more self-oriented, whereas at the self-actualization level we can expect manifestation of democratic citizenship: "citizens look beyond self-interest to the larger public interest, adopting a broader and longer-term perspective that requires a knowledge of public affairs and also a sense of

belonging, a concern for the whole, and a moral bond with the community whose fate is at stake” (Denhardt & Denhardt, 2000; p. 552; Sandel, 1996; p. 5-6). This article supports the opinion that movement to the higher level of needs is possible only if two conditions are met. First, citizens are sufficiently motivated to behave according to their esteem or self-actualization needs and second, government must be open to make a suitable environment where citizens can give feedback, suggest solutions, co-create, or even co-decide. Only citizens living in cities where participation is welcomed can fulfill their HCN.

Maslow’s hierarchy presumes that higher needs can be satisfied only when lower needs are already satisfied. The relationship among particular levels is not so straightforward in the case of citizens’ needs. That is because citizens by satisfying their HCN (esteem, self-actualization) can improve public services, which are on the lower level of needs. This is especially true for developers of civic (citizen) apps, which are applications considering public issues but developed by citizens. Desouza and Bhagwatwar (2012) described three types of developer motivations for which I assign levels of the need: (1) prizes – satisfy esteem needs, (2) solving social problems – satisfy esteem and self-actualization needs, and (3) open-data app startups – combination of LCN and esteem needs.

Table 1 should appear here (two columns)

Table 1 shows the attempt to define citizens’ needs in a wider context. Because the HCN are based on the participation and engagement in public matters, the ladder of citizen participation defined by Arnstein (1969) and modified by Cardullo and Kitchin (2017), was used as the basis. This ladder differentiates various levels of participation therefore it was possible to find actors and tools in the process of citizens’ needs formulation. First were assigned levels of citizens’ needs to levels of participation. Then were assigned two groups of actors: proposer and decision-maker. Proposer is a person who says what needs of citizens are whereas decision-maker is a person who decides what citizens’ needs will be satisfied. Moreover, in the table there is described origination of the needs. Those needs that are proposed by citizens comply with the two highest levels of Maslow’s hierarchy (esteem and self-actualization). Different origination of needs sends a different message to the citizens, which is also mentioned in the table. Finally, there are described tools used to formulate citizens’ needs. Tools used on the citizens’ side differ based on the actual existence of service. If the service is already provided then it is useful to employ satisfaction survey to ask citizens how they are satisfied with current state. However, citizens can also have needs that are not already satisfied in any way. They can suggest new services or means of providing them. In this case, it is more appropriate to use some participative citizen sourcing tools. Traditionally, it can be public hearing, citizen boards or panels, focus groups, etc. Recently, new technologies opened vast pool of possibilities how to engage citizens in city planning (Brabham, 2009; Evans-Cowley & Hollander, 2010; Zhao & Zhu, 2014; Gabrys, 2014). For example, tools Open IDEO and Mind Mixer can help solicit generally all types of problems, SeeClickFix is specialized on reporting of problems in city services, Crowdfire focuses on online collaboration, etc.

The concept of citizens’ needs is actually very broad and leaves many questions unanswered for further research. For example: what drivers are necessary to invoke behaviour based on HCN, what relationships among particular levels of needs can be identified, what roles play civic apps in satisfaction of HCN, how to measure the level of satisfaction of citizens’ needs, etc.

Satisfaction surveys and strategic planning

Satisfaction surveys are used to get citizens feedback based on their perception of some situation. Citizens, by participating in surveys, express their HCN to be heard. Satisfaction surveys can be focused on the quality of some specific services (LCN), or they can be broader, covering the whole concept of quality of life (LCN+HCN). Surveys bring quantitative data from many people. They are relatively inexpensive and provide individual views that are not influenced by others. Moreover, respondents can be chosen to include many different points of view.

Extraction of citizens’ needs from satisfaction surveys is quite straightforward. Two types of questions according to overall satisfaction can be used in the survey: direct questions asking people to say what they think are main problems of the city and indirect questions giving citizens the possibility to evaluate each service or component of quality of life on the rating scale. The evaluation of direct questions is easier as the evaluator just choose answers with the highest number of votes. However, it puts much more demands on the respondent's knowledge. Processing of indirect questions uses the transformation of dissatisfaction into needs. Citizens’ dissatisfaction can be interpreted as their demand (need) to change the situation (level of service). Special type of questions uses service quality surveys, which are very detailed and consider particular dimensions of service quality satisfaction e.g. reliability, responsiveness, completeness, etc.; for more detailed explanation see (Parasuraman et al., 1985) using SEVQUAL and (Chiu & Lin, 2004) using SQ-NEED. This article considers only overall satisfaction with public services and quality of life.

The relationship between citizens’ satisfaction and strategic planning is twofold (Dissart & Deller, 2000; Massam, 2002). At first, there is the concept of citizens’ needs (problem issues) as the product of local government strategy. The main thought is: if the strategy was successful, citizens are now more satisfied. This view is not as

straightforward as it seems. Although it is common practice that officials use satisfaction surveys as evaluation material, many opponents disputed such conclusion (Stipak 1979; Miller & Miller, 1991; Roberts, 2004; McCrea et al., 2006; Robins et al., 2008). The main argument is the ambiguous link between objective measures and subjective citizens view. Distortion of citizens' view is mainly caused by the lack of adequate knowledge, personal attributes, political attitudes, spatial characteristics, and different expectations. Secondly, we can view citizens' satisfaction as the input into strategic planning. Issues that make citizens dissatisfied should be part of the strategy.

Satisfaction surveys are mostly used by local government officials to see what goes wrong but they can also serve as a benchmarking tool for international comparison (Węziak-Białowolska, 2016) or they can be used for the exploration of relationships among satisfaction factors (Berry & Okulicz-Kozaryn, 2009; Zenker et al., 2013; Zenker & Rütter, 2014; Nigro & Císaro, 2016).

Satisfaction surveys are subjective and have many of the disadvantages described above, yet they should not be rejected because they bring a view from an outside perspective (Hatry & Blair, 1976; Brudney & England, 1982; Dalehite, 2008). The case study will incorporate both views of the relationship between citizens' satisfaction and strategic plans.

Methodology of research

The case study is based on the quantitative and qualitative analysis intended to bring answers to four research questions mentioned earlier. The quantitative part of the research was indispensable to calculate success rate on all issues, the success rate in problem issues, Problem Load Index and to formulate the list of citizens' needs. The qualitative analysis covered comparison of strategic documents to find out if all problem issues are tackled there and to formulate common approaches to these issues.

For the case study, were used data from Flash Eurobarometer reports - Quality of Life in European Cities (Flash Eurobarometer 366, 2013; Flash Eurobarometer 419, 2015). Data for eight cities, two for each member state of Visegrad group, were distilled from those two reports. Selected cities for the case study are: (1) the Czech Republic – Prague, Ostrava; (2) Hungary – Budapest, Miskolc; (3) Poland – Warszawa, Krakow; (4) Slovakia – Bratislava, Kosice.

Citizens' needs were distilled from satisfaction surveys through both types of questions. As the main source was used 28 indirect questions about different types of services, questions considering the personal situation, and overall satisfaction with the life in the city. Numbers of satisfied and dissatisfied respondents were used to formulate satisfaction measure (calculation will be explained later in methodology section). When the dissatisfaction with the particular issue was higher than satisfaction, then the satisfaction measure was lower than zero. This situation indicated a problem issue thus forming citizens' need for change. Although the case study uses mainly indirect questions, for the evaluation of city strategies (satisfaction as the input) was also used one direct question:

In your opinion, among the following issues, which are the three most important for [CITY NAME]? (max. 3 answers from Safety/ Air pollution/ Noise/ Public transport/ Healthcare services/ Social services/ Education and training/ Unemployment/ Housing/ Road infrastructure).

For each city were then selected three most frequent answers. By a combination of results from indirect questions and the direct question, it was possible to get final set of problem issues forming citizens' needs and to compare them with strategic plans.

Following paragraphs explain the way of processing indirect questions, forming the satisfaction measure. Processing of indirect questions can offer in principle two kinds of results. Answers on the Likert scale can be transformed to numbers so the result will be mean and the variation for each question. Or the result can be represented by three rates (satisfied, dissatisfied, and non-respondents), which is the case with this study. When comparing ratio of satisfaction versus dissatisfaction there is question what number to use as the denominator. There are mainly two options, both having their pros and cons. At first, the denominator can be the sum of satisfied and dissatisfied people. It will tell us what portion of people who responded is either satisfied or dissatisfied. However, this type of calculation eliminates those undetermined people who did not respond and gives much weight to those who answered. The problem is that we do not know what non-respondents think. In this article is used second type of calculation, using number of participants (even those who did not answer particular question) as the denominator. Through this measure we can see real strength of the answer. Satisfaction measure is calculated as:

$$Sat_{i,j} = \left(\frac{Ns_{i,j}}{Np_i} \right) - \left(\frac{Nd_{i,j}}{Np_i} \right) \quad \text{for } Sat \in \langle -1; 1 \rangle \quad (1)$$

Sat ... Satisfaction index

Ns ... Number of satisfied people

Nd ... Number of dissatisfied people

Np ... Number of participants

i-th ... represents the city in particular year

j-th ... represents the question

Nevertheless, even this method of calculation has its limitations. Main challenge is that high level of non-respondents moves the satisfaction measure from its extremes. If all answers are negative or positive, the measure will never reach maximal values. This feature must be considered when constructing categories of the severity of problems. Final matrix with satisfaction measure per city, issue, and year is in Appendix-A.

It was explained earlier in this section that having the dissatisfaction higher than satisfaction, then the satisfaction measure is lower than zero, which indicate problem issue (citizens' need for change). Through this measure we can say how many problem issues particular city has but not how serious the problems are. That is why it is necessary to define some categories to divide the interval $\langle -1; 0 \rangle$. For the case study were set four categories (low importance issue, moderate issue, serious issue, and very serious issue). As the satisfaction measure is affected by non-respondents, there was the need to set the category very serious issue larger than others. To define the scope, all answers in the case study survey (448) were examined to find out what is the highest non-response rate. It was 31.5% for Miskolc in question "Foreigners who live in [CITY NAME] are well integrated" (Flash Eurobarometer 366, 2013; p. Index). If all answers are negative then the satisfaction measure will be -0.685. Obviously, this situation should be covered by very serious category. We can expect even higher non-response rate. That is why the interval for the very serious issue was set $\langle -1; -0.5 \rangle$ to cover even 50% non-response rate. It covers also the extreme case when only 50% of people answer and all of them are dissatisfied. In this situation, although the satisfaction measure is only -0.5, still the problem is considered as very serious. Other categories were defined as geometric sequence. Only the lowest category was adjusted from -0.125 to -0.1 after discussion with representatives of public administration. They pointed out that this setting is more comprehensible. Categorization of problem issues is shown below:

- VSI (very serious issue) ... Sat $\in \langle -1; -0.5 \rangle$;
- SI (serious issue) ... Sat $\in \langle -0.5; -0.25 \rangle$;
- MI (moderate issue) ... Sat $\in \langle -0.25; -0.1 \rangle$;
- LII (low importance issue) ... Sat $\in \langle -0.1; 0 \rangle$.

Classification into categories brings the overview of the severity of issues; however, the aim of the case study was also to rank selected cities. Therefore, in the next part of the analysis is introduced Problem Load Index (PLI), which evaluates cities based on the severity of problem issues. To count the PLI, for each city it is necessary to count the number of problem issues in each category and multiply the number by the weight. The formula for PLI is:

$$PLI = \alpha * LII + \beta * MI + \gamma * SI + \delta * VSI \quad (2)$$

where α , β , γ , δ are weights for a particular category of issues. For this case study was used this setting: $\alpha = 1$, $\beta = 2$, $\gamma = 3$, $\delta = 4$. Weights were set arbitrarily with the intention to emphasize very serious issues. It is not necessary to use this weighting. However, if one wants to compare results of different studies, the weights need to be set the same. A setting of weights is open for the future research.

Introduction of selected cities

Visegrad group is a cultural and political alliance of four Central European nations – the Czech Republic, Hungary, Poland, and Slovakia. These countries have a shared history. After the collapse of the communist regime, cooperation between countries was necessary for their transition from a totalitarian system to a free, pluralistic and democratic society. As former communist countries, they had to face different problems than other European countries even at the municipal level. This is the reason why the study focuses on them together. Following text briefly characterize each city. Additional demographic facts about gender and age differences are depicted in Appendix-B. Unfortunately, it was not possible to obtain data from the same year, therefore data for Warszawa, Bratislava, Prague, and Budapest are from 2015, Ostrava and Krakow from 2016, Kosice from 2014, and Miskolc from 2011.

Prague – is the capital of the Czech Republic with the population of almost 1.3 million and the area of 496 km². A long history of the city dates to the 9th century, which makes the city attractive for tourists. Moreover, the historic center of Prague has been included in the UNESCO list of World Heritage Sites since 1992. Prague, compared to the rest of the Czech Republic, is a significantly more prosperous region and its economic strength exceeds the European average.

Ostrava – is the third largest city in the Czech Republic (population more than 291 thousand) located in the northeast of the Czech Republic. It is the capital of the Moravian-Silesian Region with the area of 214 km². History of Ostrava region is related to the coal mining and metallurgy. The last coal was mined in Ostrava on 30 June 1994. Since this time, Ostrava had to find the way to cope with the environmental burden and high unemployment.

Budapest – is the capital of Hungary with the population of 1.76 million and the area of 525 km². Danube river separates the city into two parts; Pest lies on the flat terrain of the Great Plain while Buda is somewhat hilly. The city's primary natural resources are thermal springs, making Budapest one of the largest spa towns in the world. It

is also R&D, and financial center and the highest ranked Central and Eastern European city on Innovation Cities Top 100 index.

Miskolc – is the fourth largest city in Hungary with the population of 158 828. The city, which is known for heavy industry, is located in the north-eastern part of the country. The crisis in the iron industry in the 1990s brought the problem with depopulation of the area. While in 1980 Miskolc was the second most populated city in Hungary, currently ranked fourth. Since the crisis increased city's role in culture and tourism.

Warszawa – is the capital of Poland with the population of 1.76 million and the area of 517 km². It is a historical city even though a large part of the city was destroyed during World War II. Warszawa was reconstructed entirely, and since 1980, the historic Old Town was inscribed onto a UNESCO World Heritage Site. It was classified as an alpha world city - important node in the global economic system. Moreover, it is one of the cities with the highest number of skyscrapers in Europe.

Krakow – is the second largest city in Poland with a population of 765 320 and the area of 327 km² located in the south part of the country. It is one of the oldest cities in Poland being included in UNESCO list of World Heritage Sites since 1978. In this year was Karol Wojtyła, archbishop of Krakow, elevated to the papacy as Pope John Paul II. The city of Krakow is well known for its tourist-attractiveness, but it also focuses on attracting hi-tech companies.

Bratislava – is the capital of Slovakia. It is the smallest capital city of selected cities with the population of about 422 thousand and the area of 368 km². Located in southwestern Slovakia on the Danube river, is the only national capital that borders two sovereign states (Austria and Hungary). Bratislava together with the Bratislava Region ranks among the wealthiest regions in the whole of Slovakia; it is also the wealthiest region of the EU countries adopted in 2004.

Kosice – is the second largest city in Slovakia with the population of 239 141 and the area of 243 km². It is situated in eastern Slovakia at the river Hornad. The city has a well-preserved historical center, which is the largest among Slovak towns. The city plays a role in the east-west transport link, where it forms the link between Western and Central Europe on the one hand and Ukraine and Russia on the other hand.

Case study results

Unemployment rate – perception and the reality of the selected cities

Many researchers pointed out that there is weak correlation between objective and subjective measures (Stipak 1979; McCrea et al., 2006; Robins et al., 2008) because satisfaction is only the citizen's perception of the situation; therefore, it can be distorted. Although this case study is built on subjective data, it can be useful to see if they are correlated with objective data. Due to the lack of objective data and limited scope of the article, only one example of the comparison will be given. For the comparison is used unemployment rate as the objective measure and the satisfaction with job availability on the other side.

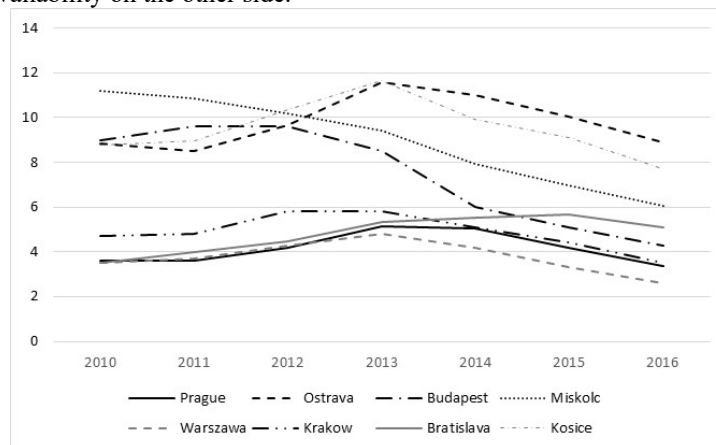


Fig. 1. The unemployment rate in selected cities (*one column*)

Figure 1 shows the evolution of unemployment rate between 2010 and 2016. The city of Warszawa has the lowest unemployment rate in almost all reported periods, followed by Prague and Krakow. As the counterpart to objective data is used data from Flash Eurobarometer survey (2015), especially the question: Do you agree that it is easy to find a job in the city.

Table 2 should appear here (one column)

In table 2 are cities sorted according to the achievement in real unemployment rate in 2015 (1 for the best, 8 for the worst) with the assigned values of satisfaction measure in 2015 (see Appendix-A). Expected results of satisfaction measure should be the highest for number one and the lowest for number eight. When looking at the

raw data, only 53.6% of Warszawa citizens are satisfied ($Sat = 0.152$) with the opportunity to find the job even if the unemployment rate is the lowest. In contrast, Bratislava has very high satisfaction measure ($Sat = 0.32$), which means 69.6% of satisfied citizens, although it finished fifth. These two cities are exceptional. Citizens in Warszawa are not satisfied even with good results while in Bratislava are satisfied with less. Satisfaction in other cities mostly matches with the real data only for Miskolc the satisfaction should be little higher.

Presented comparison of objective and subjective data revealed that citizens' perception is mostly in line with objective data. However, we can expect that evaluation for Warszawa will be mostly underestimated in contrast with Bratislava where subjective data will be overestimating the real situation. Unfortunately, finding the reason for the explanation of this situation is outside of the scope of the case study.

Success in dealing with problem issues

The first part of the research evaluated if there was an improvement in citizens' satisfaction between years 2013 and 2015. The study evaluated the data from two perspectives. At first, was calculated success rate on all issues - the number of items (for each city) where $Sat_{i,j}$ in 2015 was higher than $Sat_{i,j}$ in 2013 divided by the number of items. The second perspective considered success rate in problem issues (issues with satisfaction measure lower than zero) – the number of items (for each city) where $Sat_{i,j}$ in 2013 was lower than zero and at the same time $Sat_{i,j}$ in 2015 was higher than zero. This result was then divided by the number of items where $Sat_{i,j}$ in 2013 was lower than zero. The success rate in problem issues is different compared with the success rate on all issues. It does not take into account whether the value of the criterion has improved but requires that the value in 2015 is greater than zero. This means that the problem issue was actually solved. Both measures are depicted in figure 2. If some city did not have any problem, it would not be meaningful to depict it on this type of graph. However, this is not the case; all cities have some problem issue.

The results show that success rate on all issues is more than 50% for all cities whereas the success rate in problem issues shows the span from 0% to 50%. These numbers mean that overall satisfaction has grown in all cities; however, figure 2 shows that cities differ in both measures.

Cities, which are in the upper right corner, are successful in both measures. They strive to tackle problem issues, but they do not forget the whole spectrum of issues. Prague and Ostrava have the same success rate in problem issues; nevertheless, Ostrava is broader in scope and improved more issues. Kosice was a little bit lower in both measures but still in this quadrant. No city is in the lower right corner where would be cities narrowly focused on problem issues without attention to other issues.

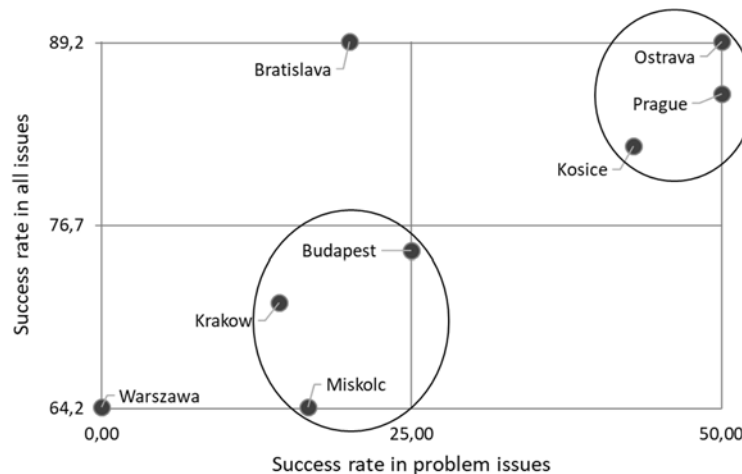


Fig. 2. Comparison of the success rate in problem vs. all issues (%) (one column)

Upper left corner includes cities that improved on many issues but that were not able to solve at least 25% of problem issues, which is the half of the best-compared city. Being in this quadrant (Bratislava) means that city strategy is not focused on citizens' needs instead it solves other issues.

In the lower left corner are four cities, which have the success rate in problem issues lower than 25% and the success rate on all issues lower than 76,7%. Three of them (Krakow, Budapest, and Miskolc) are quite near together having a similar success rate in both measures. In this quadrant is shown one city (Warszawa), which is exceptional. It did not solve any of problem issue. Moreover, a closer look at satisfaction matrix (Appendix A) reveals that in two out of six problem issues Warszawa worsened. In the previous chapter was shown that Warszawa is specific due to higher demands of its citizens, which could cause this result.

Measuring the severity of problem issues

In this chapter, problem issues will be categorized into four classes: VSI (very serious issue), SI (serious issue), MI (moderate issue), and LII (low importance issue). Categorization criteria were described in methodology part of this paper. In figure 3, can be seen the classification of issues. There are displayed selected cities with two columns: a first column for the year 2013 and the second for 2015. The height of the column represents the number of problem issues, and different color is used to distinguish categories.

Looking at the results, we can see that five out eight cities have some very serious problem. Moreover, the seriousness of the problem persists in the second evaluated period. In contrary, cities can solve problems that are not so serious. Budapest is an example of great improvement. In the second period, there was no serious issue, only moderate and low importance.

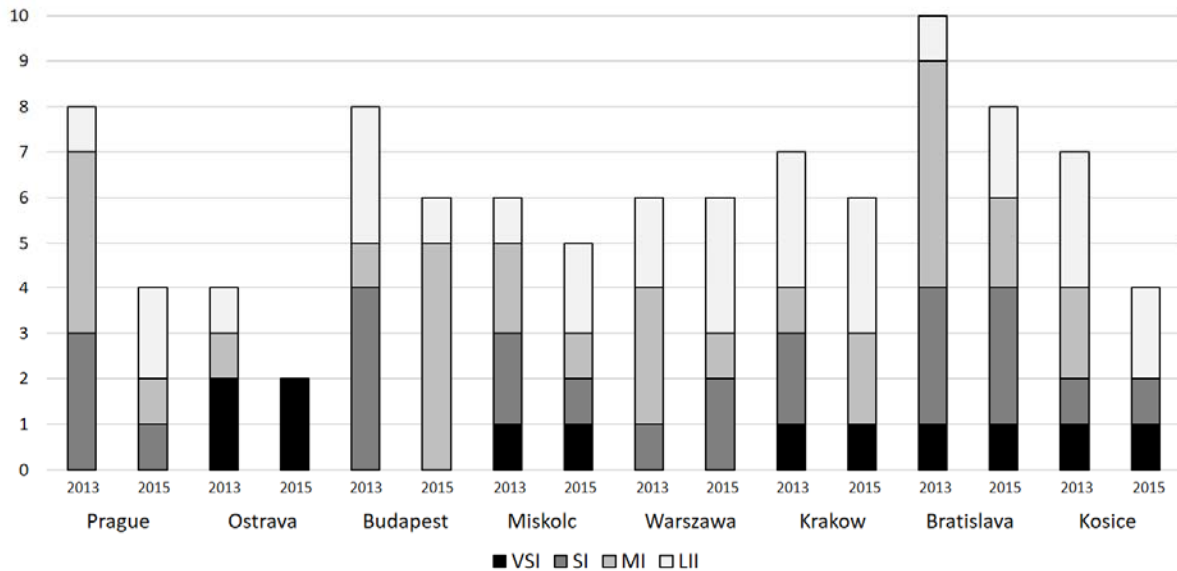


Fig. 3. Categorization of problem issues according to the severity of the issue (two columns)

Visualization of results has shown different severity of issues but it does not rank selected cities. That is why the article introduces Problem Load Index (PLI). Construction of the index is explained in methodology part of the paper. In table 3 are listed values of PLI per city and year. The highest value (many serious problems) obtained in both years Bratislava. The city of Warszawa had one of the lowest PLI in 2013 (11). However, in 2015 three other cities caught Warszawa's PLI and three even overtaken it.

Table three should appear here (one column)

Figure 4 shows cities sorted in descending order according to the percentage of decrease in PLI between those two periods. Prague has a big lead as it lowered the level of PLI value by 11 points, which is 61.11%. At the opposite end of the ranking is Warszawa with zero points. Even if there is a change in the composition of the seriousness of problem issues, there is no change in the value of PLI. Other cities are somewhere in between.

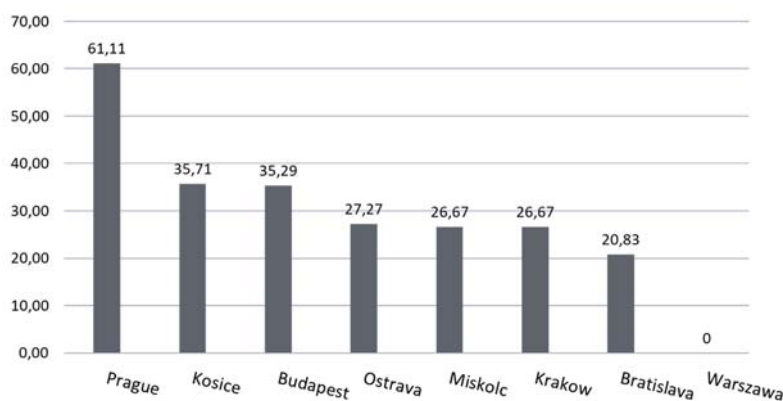


Fig. 4. The decrease in Problem Load Index between years 2013 and 2015 in percentage (one column)

When comparing results in figure 2 with these results, we can see some similarities. Prague and Kosice were in the upper right corner as the best, and they are again on the top. The difference is evident in the city of Ostrava. The

seriousness of problems moved the city to the fourth place behind the Budapest. Bratislava improved in 5 points, but the number of problems the city is facing is too high, which means that the decrease is only 20.83%.

Citizens' needs in the view of strategic plans

In this chapter will be discussed different point of view considering citizen's needs and city strategies. The analysis in previous chapters focused on the comparison of historical data, seeing the satisfaction as the product of former strategy. Now will be satisfaction considered as an input into strategic plans. This approach needs at first creation of the list of citizen's needs and as the second step gathering of strategic documents and data from credible sources. The process of creation of the list of citizen's needs is described in methodology part of this paper. The final list of citizen's needs is depicted in table 4. Issues in italics are those distilled from the direct question (three most frequent answers) and others came from indirect questions (issues with satisfaction measure lower than zero in 2015). Overlap was removed.

Table four should appear here (one column)

The list of citizen's needs revealed some interesting facts. Results in table 4 show that there is no single challenging issue common to all cities and both periods. However, some topics are more frequent than others are. The most problematic issues are the availability of healthcare services, trust in people, possibility to find housing for a reasonable price, availability of job and air quality. On the other hand, availability of cultural facilities and retail shops, and the state of streets and public spaces revealed overall satisfaction. The highest number of challenging issues appeared in both periods at Bratislava in contrast with Ostrava having the lowest number. Almost all cities improved between testing periods except for Warszawa having the same problems in both periods.

There were two more interesting facts, which were found during the creation of the list of citizen's needs. At first, it was a safety issue. Through the direct question, people demonstrated the importance of this issue and chose it among three most important. However, two indirect questions mentioning safety issue (I feel safe in the city, I feel safe in my neighbourhood) revealed that more people agree than disagree, which means they are satisfied with the situation. This fact is true for all cities where people directly selected safety as one of the most pressing problems. So, this is no exception for one city. Second exciting fact appeared in the unemployment issue. Direct question offered unemployment as one of the possible answers for many cities; it was assigned as the highest priority issue. However, satisfaction measure at indirect question mentioning unemployment (Satisfaction with personal job situation) revealed that there is no negative value. It means that majority of questioned people were satisfied with the job even if they think it is difficult to get some. This is again true for all cities.

The process of comparison covered a thorough review of strategic documents serving two objectives. At first, the evaluation was focused on a particular city with the aim to find out if all citizens' needs were tackled in those documents. As the second step were compared cities with the same problem issue to find similar approaches to the problem. To achieve both goals were used strategic plans, as well as the description of specific projects. Strategic plans for Prague were available only in Czech language (Strategický plán hl. m. Prahy, 2017; Koncepce smart Prague do roku 2030, 2017). Ostrava offers English excerpt and original longer Czech version. Both were covered (Ostrava City Strategic Plan, 2017; Strategický plán Ostrava, 2017). Budapest strategic documents were available in English (Budapest 2030, 2013; Integrated Urban Development Strategy, 2013; Thematic Development Programs, 2015; Smart Budapest, 2017). Miskolc strategy was available only in Hungarian (Településfejlesztési koncepció 2014-2030, 2014). Strategic plan for Warszawa was available just in Polish (Strategia #Warszawa2030, 2017; Ewaluacja Mid-term Strategia Rozwoju Miasta Stołecznego Warszawy do 2020 Roku, 2016). Krakow Strategic plan was also available in Polish (Strategia Rozwoju Krakowa 2030, 2017). Bratislava strategy is available only in Slovak (Program hospodárskeho rozvoja a sociálneho rozvoja Hlavného mesta SR Bratislavy, 2010). Kosice strategy is also available in Slovak (Program rozvoja mesta Košice 2015-2020, 2015).

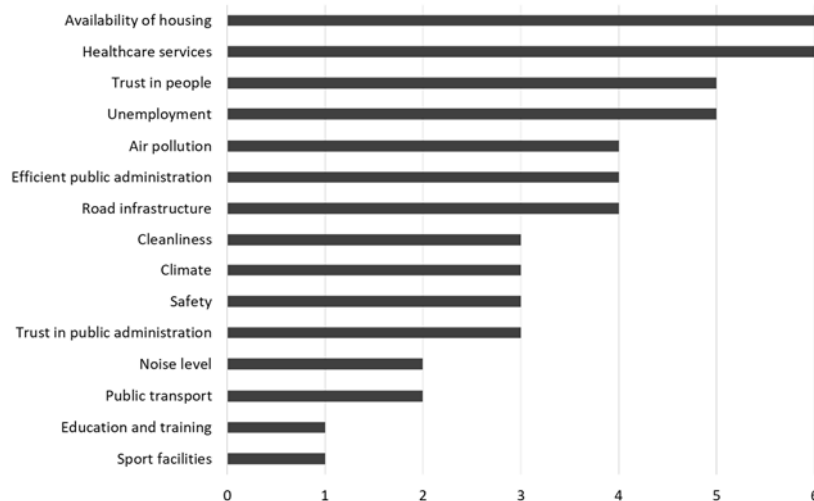


Fig. 5. A frequency of problem issues in 2015 (one column)

The comparison shows that all cities covered their problem issues in strategic plans. The difference is in the coverage of the problem and project details. Figure 5 shows how many cities have a particular problem issue. The results show that most frequent problems are the availability of housing and healthcare services.

The following text will explain what strategies were chosen by selected cities to overcome challenging issues. The text is organized according to a frequency of problem issues and will cover only those issues that represent a problem for at least half of selected cities.

Availability of housing is a problem for Prague, Budapest, Warszawa, Krakow, Bratislava, and Kosice. All cities mainly solve a problem of inadequate capacity for vulnerable groups and deterioration of municipal property. Solutions are very similar for all of them; however, there is one interesting solution in Kosice – the use of container housing as an alternative form of low-standard housing. Main objectives identified in strategies cover:

- Construction of new and reconstruction of existing municipal housing.
- Renting of municipal apartments to vulnerable groups of people (young families, elderly, disabled people, low-income groups).
- The creation of information system for the evidence of municipal housing.
- The destruction of illegal settlements (life-threatening conditions).

Healthcare services represent a problem for Budapest, Miskolc, Warszawa, Krakow, Bratislava, and Kosice. It is very surprising fact that there is no Czech city. All cities mentioned the problem issue in their strategy and proposed some solution only Bratislava is at the beginning. The proposed solution is only in the form of gathering information, starting a negotiation, and setting a timetable. Main objectives identified in strategies cover:

- Prevention (promotion of sport and healthy life, dissemination of information about infant and childcare).
- Construction of new and reconstruction of existing healthcare and social facilities (hospitals, specialized facilities, day care homes, etc.).
- Assistance for people who take care of ill and disabled people at home.
- Integration of information technologies into healthcare (online connection among different levels of healthcare, integrated urban medical rescue system, etc.).

Five cities are having a problem with trust in people – Prague, Budapest, Miskolc, Warszawa, and Bratislava. To find the answer was quite demanding as no strategy directly deal with this problem issue. The question in the survey was formulated as if most people in the city can be trusted, which is quite general. Therefore, I narrowed the topic to the three domains that characterize citizen who trusts others: (1) feel safe, (2) be part of the community, and (3) accept heterogeneous and multicultural society. All cities tackle safety part of the issue, and most of them focus on the support for community life. Main objectives identified in strategies cover:

- Prevention of crime (surveillance systems, educational programs, specialized applications to report problems and illegal activities).
- Support for community life (communication system, a cooperation of NGOs and the community, an organization of campaigns).
- Integration of foreigners and people from different social groups.

The problem of unemployment is troubling five cities – Ostrava, Budapest, Miskolc, Krakow, and Kosice. This issue is covering the ease of finding a job. All city strategies tackle this issue quite broadly. Main objectives identified in strategies cover:

- Education and retraining (cooperation between schools and employers, development of language skills, adaptation to the knowledge-based economy).
- Investment (new industrial zones, creating favorable conditions for investors, support to start-ups and SME, etc.).
- Innovation (support for the research, close connection between innovative companies and science for the knowledge transfer, creative industry, etc.).
- Promotion of local products

The problem with air pollution is evident in Prague, Ostrava, Budapest, and Krakow. Although the severity of the problem differs, proposed solutions are very similar in all cities. The only challenge, when processing this problem issue, was an interconnection of issues. Some solutions that help to reduce the air pollution also fall into other areas as road infrastructure, fight against climate change, public transport, or green spaces. Main objectives identified in strategies cover:

- Reduction of car traffic (support to public transport, restrictions and parking charges in the city center, development of the road system, P+R, new pathways, and bikeways, etc.).
- Support for low emissions vehicles (electro mobility, CNG-fuel vehicles).
- Eco-friendly heating and cooling (support for citizens to switch to the use of low-emission heat sources, district heating, and cooling services, switch to renewable sources).
- Improvement of city climate (use of green and water elements).

Four cities have the problem with an efficiency of public administration; Warszawa, Krakow, Bratislava, and Kosice. All mentioned cities focus their initiatives mainly on the use of information systems to make public administration more efficient. In cases of Bratislava and Kosice, there was also a problem in trust in the public administration. These areas are very close; that is why some aspects are overlapping. Main objectives identified in strategies cover:

- Digitization (electronic services for citizens, sharing of electronic data among agencies, open data, public procurement, etc.).
- Education and training of self-government officials.
- Setting effectivity measures of projects and programs.
- The promotion of citizen participation (access to communication tools, civic education).
- Exchange of knowledge with other cities in the field of fundraising from EU funds.

Last problem issue discussed in this section will be road infrastructure. Four cities have a problem with this issue; Prague, Warszawa, Krakow, and Bratislava. Although the issue is not further specified, we can expect that drivers face mainly problems with traffic jam and lack of parking spaces. Main objectives identified to correspond to this assumption are:

- Development of physical infrastructure (bypass road structure, tunnels, bridges, pathways and bikeways, parking facilities, etc.).
- Smart traffic control.
- Preference of public transportation.

Conclusion and discussion

Citizen-centric approach calls for respecting citizens' needs in strategic planning. However, the meaning of the concept of citizens' needs in the previous research was blurred. This article revealed the gap in a definition of this concept and as a response proposed comprehensive specification of the concept from several perspectives. The first perspective dealt with the definition of what citizens' needs are. Maslow's hierarchy of needs was used to find the answer and to define all five levels of needs. Then were identified actors who define and prioritize the needs. Very important perspective represents tools used for derivation of citizens' needs. Finally, special attention was given to satisfaction surveys and the explanation of the relationship between citizens' needs and strategic planning.

This article also brought the satisfaction measure as the way how to transform citizens' satisfaction obtained through indirect questions into citizens' needs. Because all needs do not have the same urgency, the article also introduced the usage of severity categorization and Problem Load Index (PLI) to distinguish different levels of the seriousness of the problem.

The case study analysis revealed that studied cities have different problems and their success rate in problem issues also differ. Figure 2 showed that there are three highly successful cities (Prague, Ostrava, and Kosice) and two exceptional cases (Warszawa, and Bratislava). The limitation of this study is that it did not explain the reason for this exceptionality. One reason can be the different level of expectation as mentioned in chapter *Unemployment rate – perception and the reality of the selected cities*. However, there will be probably more reasons, which needs further research. The study compared cities even according to the severity of problem issues, which needed some comparable measure, in our case PLI. Prague and Kosice again led the ranking; however, Ostrava worsened as solving problems that are more serious.

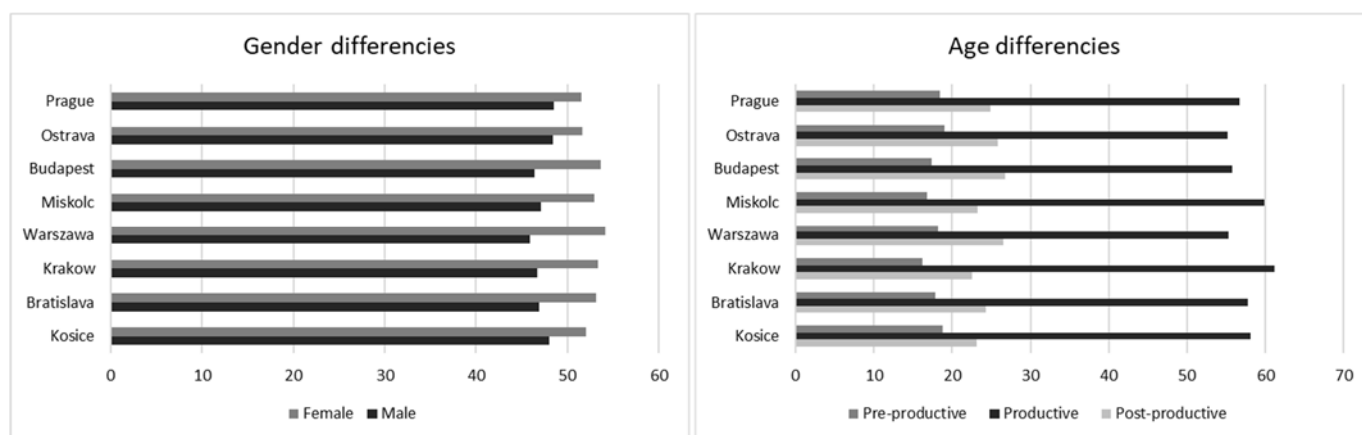
The analysis of strategic plans revealed that all cities covered all their problem issues, although the difference was in the range and project details. Documents were also compared with each other to see if the approaches to solving problems are similar.

The paper recommends the engagement of citizens in any available form; however, it focused mainly on the use of a satisfaction survey. The paper also recommends using of satisfaction surveys in both ways; as the product of strategic planning (evaluation of the strategy success) and as the input to strategic planning (problem issues should be dealt with in strategy). Both views are vital for the public policy planning. Nevertheless, the article does not express the opinion that local government officials should rely exclusively on citizens' view representing subjective measure. Instead, it supports a conclusion of Brudney and England (1982): "In the formulation of service delivery policy, citizen-based measures must be supplemented with objective data regarding the economic criteria of effectiveness and efficiency" (Brudney and England,1982; p. 132).

Appendix A - Satisfaction measure matrix (two columns)

	Prague		Ostrava		Budapest		Miskolc		Warszawa		Krakow		Bratislava		Kosice		
	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	
Satisfaction with:																	
Public transport	0.604	0.748	0.672	0.714	-0.026	0.422	-0.098	0.454	0.660	0.616	0.351	0.712	0.145	0.206	0.274	0.004	
Health care services	0.626	0.692	0.638	0.674	-0.048	-0.189	0.074	-0.147	-0.172	-0.252	-0.090	-0.034	-0.116	-0.036	0.252	0.196	
Sport facilities	0.558	0.604	0.536	0.638	0.309	0.369	0.346	0.373	0.422	0.454	0.363	0.638	-0.247	-0.010	-0.082	0.190	
Cultural facilities	0.864	0.849	0.728	0.740	0.737	0.773	0.678	0.673	0.682	0.776	0.747	0.868	0.504	0.626	0.632	0.750	
State of the streets and buildings	0.380	0.487	0.560	0.538	0.325	0.384	0.184	0.235	0.374	0.488	0.283	0.324	0.104	0.104	0.162	0.246	
Public spaces	0.630	0.596	0.490	0.476	0.574	0.673	0.510	0.590	0.340	0.498	0.667	0.762	0.309	0.298	0.664	0.691	
Green spaces	0.476	0.610	0.456	0.692	0.253	0.408	0.284	0.456	0.736	0.758	0.534	0.534	-0.125	0.072	0.120	0.473	
Availability of retail shops	0.812	0.821	0.866	0.888	0.675	0.639	0.714	0.645	0.816	0.788	0.898	0.912	0.560	0.670	0.728	0.798	
Educational facilities	0.636	0.644	0.682	0.770	0.363	0.275	0.530	0.432	0.538	0.420	0.566	0.640	0.311	0.312	0.482	0.591	
Air quality	-0.206	0.191	-0.866	-0.526	-0.257	-0.022	-0.288	0.062	0.062	0.060	-0.622	-0.676	-0.084	0.098	-0.020	0.038	
Noise level	-0.016	0.082	0.026	0.302	0.062	0.006	0.334	0.341	-0.076	-0.056	-0.070	-0.104	0.064	0.138	0.258	0.178	
Cleanliness	-0.132	0.111	-0.112	0.194	-0.466	-0.211	-0.314	-0.010	0.286	0.308	0.086	0.258	-0.448	-0.438	-0.096	0.158	
Personal job situation	0.492	0.529	0.464	0.522	0.110	0.271	0.100	0.179	0.550	0.540	0.458	0.520	0.378	0.592	0.244	0.469	
Financial situation of your household	0.366	0.596	0.286	0.512	-0.147	0.193	-0.194	-0.004	0.310	0.418	0.293	0.396	0.106	0.368	0.080	0.271	
The life you lead	0.752	0.761	0.764	0.785	0.221	0.458	0.228	0.361	0.796	0.812	0.775	0.834	0.713	0.736	0.740	0.750	
The place where you live	0.860	0.867	0.756	0.847	0.695	0.821	0.592	0.665	0.842	0.878	0.865	0.892	0.777	0.874	0.804	0.856	
Agreement with statements:																	
I am satisfied to live in the city	0.810	0.825	0.588	0.670	0.667	0.795	0.476	0.590	0.808	0.864	0.906	0.902	0.721	0.812	0.846	0.882	
It is easy to find a job in the city	0.300	0.481	-0.706	-0.560	-0.470	-0.219	-0.864	-0.689	0.046	0.152	-0.351	-0.054	0.048	0.320	-0.732	-0.525	
The presence of foreigners is good for the city	0.352	0.396	0.272	0.131	0.659	0.647	0.480	0.438	0.656	0.496	0.821	0.686	0.576	0.404	0.628	0.431	
Foreigners who live in the city are well integrated	0.110	0.109	0.160	0.175	0.516	0.514	0.472	0.448	0.166	0.166	0.416	0.416	0.203	0.218	0.444	0.421	
It is easy to find good housing at a reasonable price in the city	-0.468	-0.370	0.004	0.258	0.060	-0.141	0.376	0.187	-0.436	-0.404	-0.319	-0.226	-0.673	-0.648	-0.466	-0.261	
The administrative services of the city help people efficiently	-0.224	0.068	0.142	0.152	0.175	0.233	0.196	0.209	-0.118	-0.216	-0.125	-0.024	-0.394	-0.330	-0.230	-0.098	
I feel safe in the city	0.344	0.346	0.012	0.106	0.139	0.339	0.052	0.084	0.596	0.662	0.639	0.636	0.233	0.426	0.240	0.501	
I feel safe in my neighborhood	0.584	0.646	0.358	0.542	0.450	0.598	0.328	0.317	0.752	0.794	0.699	0.706	0.536	0.686	0.520	0.651	
The city is committed to fight against climate change	-0.254	-0.026	0.066	0.278	-0.012	0.177	0.324	0.376	-0.218	-0.076	-0.082	0.278	-0.219	-0.190	0.126	0.259	
Generally speaking, most people in the city can be trusted	-0.160	-0.085	-0.006	0.104	-0.331	-0.189	-0.166	-0.255	-0.074	-0.008	0.281	0.314	-0.245	-0.218	0.002	0.182	
Generally speaking, most people in my neighborhood can be trusted	0.456	0.451	0.442	0.476	0.353	0.438	0.362	0.355	0.378	0.444	0.484	0.468	0.293	0.358	0.348	0.481	
The public administration of the city can be trusted	-0.410	-0.249	0.096	0.114	0.149	0.303	0.208	0.227	0.098	0.040	0.082	0.188	-0.375	-0.370	-0.154	-0.016	

Appendix B – Basic demographic facts about selected cities (%) (two columns)



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Table 1

Definition of citizens' needs concept

Form and level of participation (Arnstein, 1969; Cardullo & Kitchin, 2017)		Level of human needs (Maslow, 1943)	Proposer	Origination of citizens' needs	Message to citizens	Decision-maker	Tools used to extract citizens' needs	
Citizen power	Citizen Control	Self-actualization	Citizens	Citizens take the initiative and responsibility	"Do it yourself"	Citizens	Citizen sourcing tools – innovative ideas, no predefined questions, possibility to make some new services	
	Delegated Power			Citizens participate on decision-making	"Lets' make a decision together"	Citizens with local government		
	Partnership			Citizens help to fulfil citizens' needs	"Lets' do it together"	Local government		
Tokenism	Placation	Esteem		Local government	Citizens suggest solutions, prioritization	"Tell us what you want"	Local government	Satisfaction surveys – predefined questions about existing services Experience of local government officers, examples of good practice, research articles, conferences, etc.
	Consultation				Citizens give feedback and opinion	"Show your satisfaction with what is given"		
	Information				Local government offer services, citizens can choose	"Choose from what is given"		
Consumerism	Choice	Physiological, Safety, Belongingness	Local government		Local government provide services obligatory for citizens	"Take what is given"	Local government	
Non-participation	Therapy							
	Manipulation							

Table 2

City ranking according to unemployment rate in 2015 in comparison with satisfaction measure in 2015

1	2	3	4	5	6	7	8
Warszawa	Prague	Krakow	Budapest	Bratislava	Miskolc	Kosice	Ostrava
0,152	0,481	-0,054	-0,219	0,32	-0,689	-0,525	-0,56

Table 3

Problem Load Index (PLI) for selected cities

	Prague	Ostrava	Budapest	Miskolc	Warszawa	Krakow	Bratislava	Kosice
2013	18	11	17	15	11	15	24	14
2015	7	8	11	11	11	11	19	9

Table 4

The list of citizens' needs

Prague		Ostrava	
<i>Road infrastructure</i>	<i>Road infrastructure</i>	<i>Air pollution</i>	<i>Air pollution</i>
<i>Air pollution</i>	<i>Safety</i>	<i>Unemployment</i>	<i>Unemployment</i>
<i>Safety</i>	<i>Air pollution</i>	<i>Safety</i>	<i>Safety</i>
Noise level	Housing	Cleanliness	
Cleanliness	Trust in PA	Trust in people	
Housing	Trust in people		
Efficient PA	Climate		
Climate			
Trust in people			
Trust in PA			
Budapest		Miskolc	
<i>Unemployment</i>	<i>Health services</i>	<i>Unemployment</i>	<i>Unemployment</i>
<i>Health services</i>	<i>Unemployment</i>	<i>Safety</i>	<i>Health services</i>
<i>Safety</i>	<i>Air pollution</i>	<i>Health services</i>	<i>Safety</i>
Public transport	Cleanliness	Public transport	Trust in people
Air pollution	Trust in people	Air pollution	Cleanliness
Cleanliness	Housing	Cleanliness	
Financial situation		Financial situation	
Climate		Trust in people	
Trust in people			
Warszawa		Krakow	
<i>Health services</i>	<i>Health services</i>	<i>Health services</i>	<i>Air pollution</i>
<i>Road infrastructure</i>	<i>Road infrastructure</i>	<i>Air pollution</i>	<i>Health services</i>
<i>Education and training</i>	<i>Education and training</i>	<i>Road infrastructure</i>	<i>Road infrastructure</i>

Noise level	Housing	Noise level	Housing
Housing	Efficient PA	Unemployment	Noise level
Efficient PA	Climate	Housing	Unemployment
Climate	Noise level	Efficient PA	Efficient PA
Trust in people	Trust in people	Climate	
Bratislava		Kosice	
<i>Health services</i>	<i>Health services</i>	<i>Unemployment</i>	<i>Health services</i>
<i>Public transport</i>	<i>Road infrastructure</i>	<i>Health services</i>	<i>Unemployment</i>
<i>Road infrastructure</i>	<i>Public transport</i>	<i>Safety</i>	<i>Public transport</i>
Sport facilities	Housing	Sport facilities	Housing
Green spaces	Cleanliness	Air pollution	Efficient PA
Air pollution	Trust in PA	Cleanliness	Trust in PA
Cleanliness	Efficient PA	Housing	
Housing	Trust in people	Efficient PA	
Efficient PA	Climate	Trust in PA	
Climate	Sport facilities		
Trust in people			
Trust in PA			
