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INNOVATÍV VÁROSFEJLESZTÉSI ESZKÖZTÁR: A „SÉTÁLHATÓ VÁROS" KONCEPCIÓBAN REJLŐ LEHETŐSÉGEK SZEGEDEN ÉS VALENCIÁBAN

INNOVATIVE CITY DEVELOPMENT TOOLBAR: OPPORTUNITIES IN THE CONCEPT OF THE „WALKABLE CITY" IN SZEGED AND IN VALENCIA

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Introduction

Nowadays, there are numerous global tendencies, like globalization, which concern the world's population negatively. Urbanization next to the positive side effects might have also negative ones, which is considerable from the point of view of our future. Since the several negative effects of the increased transport, such as congestions, greenhouse gas emissions, contamination and the health issues are serious; there is no doubt that they have to be tackled as soon as possible. Many of the experts' answer on cutting back the disadvantages of urbanization is to promote the use of environmentally-friendly, electric public transport.

The above mentioned solution to the issue is substantial and from the point of view of the reduction of CO_2 emission it is an evident and well-known method. However, there is another alternative which can handle the above mentioned challenges but it is less known and applied, on the other hand it is cheaper and more natural. This alternative is called walkability, a less evident, simple, innovative and cost-efficient solution which has similar positive effects. It is important to clarify, that walkability is not an opponent party in this situation but a partner that works hand-in-hand with the environmentally-friendly, electric transport development to reach greater results. In spite of the fact that walkability is a well-known and approved approach with international literature and practice support in the USA and in the big cities of Western Europe, there is only little available information regarding the adaptability of the method in medium-sized cities of Eastern Europe. Consequently, here is a challenge: what kind of opportunities does the method of walkability have in a Southeast-Hungarian city, in Szeged, which is definitely a big city in the country, unlike among the European cities. Since the answer itself would be hard to define, Szeged has been put into an international dimension by comparing it with the results of a deliberately chosen European city, Valencia.

Demonstrating the positive effects of walkability, it can be stated that with reducing the number of cars in city centres, this idea not only contributes to the reduction of transport related CO_2 emissions and noise pollution but also improves the transport safety of cities and significantly increases the liveability in urban area. Furthermore, it also benefits the local economy: the money spent by families on cars and fuel leave the local economy; on the other hand, if families save on transport costs, at least part of these savings are spent on local products and services and the frequency of impulse purchases on the local level increases as well.

The purpose of my study is to interpret and apply the method of walkability in medium-sized cities and to investigate the level of walkability, its improvement opportunities and possible advantages using the example of two concrete cities, Szeged and Valencia.

I have been engaged in this topic for more than a year now. Firstly, I started to read articles about walkability and I got more and more interested in the subject and investigating walkability in Szeged. Afterwards, I realized that my research had to be put into an international dimension therefore I continued my investigation in Valencia, where I was able to conduct my empirical research during half a year thanks to an Erasmus scholarship. Consequently, this study summarizes the results of a one-year-long investigation and an empirical research pursued in two cities.

Four main steps are taken in my final work in order to reach my purpose. First of all, I will review the specialized international literature from a wider context to ensure an insight into the main global tendencies in the subject and into the theory of walkability. Secondly, I will investigate the topic from a practical aspect through methods that make walkability quantifiable and best practise all around the world. The third step will be the demonstration of the empirical research I conducted in both cities through participant observation, interviews and questionnaires to gather information about the current situation of walkability in Szeged and in Valencia and the possible changes that might occur in the near future. To ensure the grounding of my research, I personally investigated the two chosen cities from the point of view of walkability and made interviews and online questionnaires in this subject. As the fourth step, I will give suggestions for the improvement of walkability in the studied cities, based on my results. Finally, I will summarize my investigations and conclude the result of my final work.

Since my research caught the attention of local stakeholders, policy makers and the respondents of the questionnaire in the realization phase, they expressed their interest in connection with the final results. Hereby I would like to say thank them for their help and because of my appreciation towards them, I wrote my study in English, as a common denomination.

1. The theory of walkability and its economic aspects

The purpose of this chapter is to give an overview and synthetize the specialized literature of walkability in order to clarify the terms used in this paper and to properly prepare and support the empirical research.

Walking is, has always been and hopefully will be an essential part of people's everyday life. It is a mode of transport which is cheap, comfortable and self-evident. If we try to think back to the routes of walking, we have to go back to the birth of mankind. Walkability was essential in the past (Southworth 2005).

1.1 Cities, the engines of development

Without doubt, people and their environment have gone through many changes in the past thousands of years. People changed the world several times, just to mention a few: the advent of agriculture or the industrial revolution and all these had an effect on the atmosphere as well. During the phases of times, like in the Middle Ages or in the preindustrial time, cities were walkable by necessity but it came to an end in the 20s when high speed transport and the Modernism killed the walkable city (Southworth 2005). Sadly, these were not the only factors that contributed to the fact that people forgot the importance of walking. Urbanization also took part of this phenomenon, as Torrey (2004) argues; the increase and the redistribution of the earth's population probably will have an effect on the interactions between populations and the urban environments. According to Ricz (2007), under urbanization people usually understand the increase of the population in cities, which is part of the urbanization but it is more than that, since it is a progress that includes an economic, cultural and social change. While Tóth (1997) cites Ferenc Erdei when defining urbanization and says that urbanization means the modernization of places, the wide spread of values and behaviour samples considered as urban, at the same time it also means the regional realignment of the population and the increase of the rate of people living in cities.

Honestly, the fact that people move from rural areas to urban areas is not surprising, if we take the advantages of an urban lifestyle into account. In Torrey's (2004) opinion, the main reasons why people in rural areas decide to move to urban areas are the urban advantages, such as greater opportunities to receive education, health care and services. Cohen (2006) also

claims that cities have always been focal points for innovation, economic growth and employment; they offer important opportunities for economic and social development, too. Moreover, Filep (2014) also agrees that the engines of development are cities, where the social and economic resources are concentrated. According to Lengyel- Rechnitzer (2004), the benefits of urbanization are mostly cost savings originating from the size of cities, number of inhabitants and effect of economic activities on each other; and they are the following: big local market, specialization, modern infrastructure, economies of scale in services, closeness of financial institutions and high-standard institutions. Cohen (2006) also adds that cities are centres of modern living: they own the greatest female labour force participation, and typically the highest level of general health and wellbeing, literacy, women's status and social mobility, they mean important social and cultural centres with theatres, museums and art galleries. It is also mentioned in the article that urban residents generally enjoy better access to education and health care, as well as basic public services than people in rural areas, as Torrey (2004) also argued. Moreover, according to Lengyel (2010) we can also find scientific centres, large amount of information, the change of motivation and attitude, qualified and diversified labour market, learning-by-doing experience, and so on among the benefits of urbanization.

According to Enyedi (2012), cities are more and more important nowadays, since the majority of the world's population live in cities now. As he claims, the importance lies in the following phenomena: cities has increasing role in economic control, concentration of "new economies" in cities, the significance of cities in social reproduction, high culture development and the allocation of political power. However, he also argues that the structure of the cities' economies has also changed in the past century; their size, their inner structure, their place in the cities network has changed.

The bigger the city, the more complex is managing them (Cohen 2006). Normally, urban populations have a continuous interaction with their environment: people change the environment with the consumption of food, energy, water and land and the polluted urban environment affects our health and quality of life (Torrey 2004).

So if we think it through, urbanization can have positive and also negative impacts on the natural environment (Sadorsky 2014), which is considerable from the point of view of this study.

1.2 Challenges of urbanization

As Torrey (2004) says too, among the effects of urbanization we can also find negative ones: inadequate water and sanitation, lack of rubbish disposal and industrial pollution. Many of the negative side effects of urbanization are listed in the article of Cohen (2006), too, congestion in large cities is extremely severe, air pollution is a serious environmental concern, carbon monoxide, lead and suspended particulate matter in large cities exceed the guidelines of World Health Organization. The quality of urban environment gradually drops, as a result of decreasing green areas, noise and air pollution, increasing waste production and water consumption (Rechnitzer 2007), not to mention the increasing transport in cities (Rechnitzer 2004), which all challenges the city development. Sadly, these environmental problems can lead to health implication, like respiratory infections and other infectious and parasitic diseases (Torrey 2004). One of the robust contributors of carbon emissions too is the concentration of population in urban cities (Abesamin et al. 2013). According to Sadorsky (2014), urbanization has a positive and significant impact on CO_2 emissions: increases in urbanization lead to increases in CO_2 emissions.

Not to mention, that comfortable acquisitions of urbanization displaced physical activity from our everyday life, because physical work is substituted with machines, transport is limited to driving cars, shopping is also done on the internet and entertainment means passive hours in front of the TV (Pavlik 2015). Physical inactivity is a crucial issue worldwide, since it has many negative consequences. Moreover, the question of sustainability also comes up. Enyedi (2012) asks the question in his study whether the current pace of urbanization is sustainable. He says that this question arises during the phase of modern urbanization several times. There are numerous conflicts that accompany the different periods of urbanization, such as social inequality, harmful effects on the environment, etc. (Enyedi 2012).

As stated in Abesamis et al. (2013), urbanization has obtained unprecedented growth. In this study it is also argued that production centres, that inevitably accompany globalization, are concentrated in urban, highly populated areas which come at the expense of environmental quality. Levels of carbon emissions are concentrated in these areas and therefore a sustainable environment might not be efficiently maintained, that might potentially harness catastrophic impacts in the future (Abesamis et al. 2013). As they claim is, the balance between pursuing economic growth and the mounting concern over the environment is in jeopardy. According to Abesamis et al. (2013), there are a number of influential variables connected to the

occurrence of emissions, such as trade (Yunfeng and Laike 2010), population growth (Cramer 2002) and income inequality. However extensive measures have been taken to improve sustainable consumption and production processes, CO_2 emission levels and urban population are expected to rise rapidly, as a result becoming a major environmental threat (Abesamis et al. 2013).

1.3 Evident answers to handle the challenges

A potential for reducing greenhouse gas emissions and exposure to tailpipe emission from personal transportation could be electric vehicles coupled with low-carbon electricity sources (Hawkins et al. 2012). The general perception of electric vehicles is that they are an environmentally friendly technology since they offer numerous advantages in terms of power train efficiency, maintenance requirements and zero tailpipe emissions, the last of which contributes to reducing urban air pollution (Wang and Santini 1993). Among transport alternatives, electric vehicles are strongly supported by incentives, plans, strategies produced by the European Union and the United States (Hawkins et al. 2012). However, according to Hawkins et al. (2012), when considering the benefits of electric transportation, not only the use phase should be taken into account since vehicle production is also a significant point. This alternative is an economically expensive solution which requires enormous resources. It needs to be highlighted that the development of electric transportation cannot be replaced by walkability, but walkability could be an opportunity for smaller or poorer cities that can't be missed. It can be an alternative to decrease the level of CO_2 emission where there is no chance of the development of electric transportation or it can be a complementary action next to it in bigger cities.

Furthermore, if people decide to take the opportunities of the modern world, if they decide to use only mobilized transport and get rid of all physical activity, even walking, serious consequences can occur. It is stated in Eidmann et al. (2011) that physical inactivity is a substantial risk factor to chronic diseases, although it can be changed easily through personal choice. It is highlighted in the research that physical activity has several benefits to physical and mental health: it improves the quality of life, reduces the risk of numerous diseases and contributes to better sleep quality. Walking, an active form of transportation can be a perfect exercise and at the same time a transit (Eidmann et al. 2011). Based on their study, in many cases streets and neighbourhood are built with the automobile, not the pedestrian, in mind; so it discourages physically active modes of transport.

In the stages of development when societies move from low to middle stages, economic growth takes priority over environmental sustainability; but when societies continue to evolve to higher stages of development, environmental damages become more and more important and they seek ways to make the societies more environmentally sustainable (Sadorsky 2014). Taking this and everything that was mentioned before into consideration, it is obvious that the above mentioned issues cannot remain without handling. Rechnitzer (2007) also claims that the inner transportation connection of cities have to be developed. To congestion problems related to urban transportation, many reply with government investment in large-scale public transportation systems (Cohen 2006), which is an obvious answer in this situation. However, there is another evident, simple, cost-efficient and alternative solution - called walkability - which will be explained below.

1.4 The concept of walkability

To have a proper picture of the concept of walkability, I will give a presentation of the subject and highlight the advantages and possible effects of a walkable area in the following sections, based on my research among specialized literature from all over the world.

After the previous part, the question arises, why should we walk instead of using any other transportation method? On the basis of Giles-Corti et al. (2014), people can choose walking as a means of transport from a variety of reasons: it is cheap, it is easier than driving, some are unable to drive and it is convenient. As Litman (2014) sees it, walking is a multi-functional activity which not only insures mobility but also means pleasure and exercise; moreover, it is an affordable, basic transport so the improvement of it can help achieve social equity and economic opportunity objectives. Furthermore, these non-motorized transport modes, like walking or cycling, are a perfect way to incorporate physical activity into one's daily life (Eidmann et al. 2011) hence, improve public fitness and health; and from the point of view of environmental protection, increasing walking means reduced traffic, congestion, and energy consumption, pollution emissions (Litman 2014). On the other hand, walking is not always a real possibility when choosing the mode of transport because not every city is walkable.

To deal with the issues of walkability, one needs to be aware of what walkability exactly means. To be correct, I collected a couple of definitions which occurs in books, articles and research connected to walkability.

On the basis of Southworth (2005) pp. 247-248., *"Walkability is the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destination within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network."*

As stated in Benfield (2014), the definition put forth by Arizona State University, researchers Emily Talen and Julia Koschinsky in the opening paragraph of their study, Compact, Walkable, Diverse Neighbourhoods: Assessing Effects on Residents: *"It is a neighbourhood type defined by services within walking distance of residents, a pedestrian orientation that minimizes car dependence, and a level of density and land-use diversity that is higher than the typical American suburb ... Our focus is on the general parameters of the compact, walkable and diverse neighbourhood as a type distinct from auto-dependent, single-use suburbs."*

According to another study Eidmann et al. (2011) pp. 9-10.: *„A walkable city is appropriately scaled, making it possible and convenient to walk to a wide variety of locations from one's home, including recreational and commercial spaces, open public spaces, place of employment, public transit stops, and important locations for daily operations such as the post office, pharmacy, hospital, city hall and schools."*

As we see on the basis of these three definitions above, we can characterize neighbourhoods with the term walkability. **It means an extent to which it is easy, convenient, safe and desirable to walk, where every important, daily-used establishment is accessible within walking distance, i. e. it does not require a lot of time to reach them.**

Taking into account that we are talking about neighbourhoods, this term also needs some clarification. On the basis of Vernez Moudon et al. (2006), there are four scales of neighbourhood. The first one is the block face or where parents let their children play without supervision. The second one is the "defended neighbourhood", which is the smallest area that possesses a corporate identity contrast to another area. The third one is the "community of limited liability", which means a district that is represented by a local government body. The forth one is the "expanded community of limited liability", an entire sector of the city.

To tell the truth, there are a big number of factors which can have an impact on our decision of walking or not. There are various aspects that have to be taken into consideration. Firstly, street networks can significantly affect the amount of walking that takes place in a community (Benfield 2014). The author of this article (Benfield 2014) also remarks that if one can reach

his destination in a straight line, he is more likely to walk there, contrarily, if the street configuration requires more walking and there is no safe way to get across the street, chances are he is going to choose another kind of transportation. Ewing-Cervero (2010) also supports this conception and says that the decision, whether people choose walking for transport, strongly depends on the way their neighbourhood is designed, e.g. connection of streets or the existence of local destinations. People may think that weather has a significant effect on the amount of walking, but according to Florida (2014) walkability is not more common in warmer places.

Summing up, it can be said that walking should be a significant part of our daily routine because of its beneficial impacts, however there are countless other options of transportation. It does not mean that we should retrograde to the times when motorized transport systems were just a dream. We should combine motorized transport with non-motorized transport to create an efficient transport system, since both of them play an essential and important role (Litman 2014).

In the next section, I will demonstrate some positive effects of walkability, from the point of view of health, environment and economy.

1.5 Advantages and effects of walkability on the local economy

As mentioned before, this section of my research serves as a presentation of the effects of walkability. In walkable neighbourhood individuals and communities can enjoy concrete health, environmental and economic benefits (Giles-Corti et al. 2010): the level of physical activity is higher (TRB 2005), the risk of obesity is reduced (Frank et al. 2004), the level of the neighbourhood social capital is higher (Leyden 2003), the local economic spend is more significant (HF 2011), the greenhouse gas emission is lower (Frank et al. 2010) and the risk of traffic incidents is also less likely, just to mention a few. In other words, encouraging the active forms of transportation, not only benefits the health and wellbeing of residents but it is also beneficial for traffic management, the environment and the economy (Giles-Corti et al. 2014). Separating the beneficial factors is quite difficult because they are connected to each other; for instance if we say walking is good for the environment because it reduces the car traffic and with it the level of CO_2 emission, it is beneficial for our health at the same time since the air contamination is also lower.

However, I try to list some of the beneficial factors of walkability without being totally exhaustive in the following two subsections: positive impacts on the local economy and other (environmental and medical) benefits.

1.5.1 Economic impacts

In my case, as an economist-to-be, the most interesting group of impacts is the impacts on the economy. Walkability can influence our economy in ways that we would never think of, like appeal talented workers, spur creativity or generate higher incomes.

According to the report of Leinberger and Lynch (2014) walkable urbanism is a powerful driver of the economy and over the next generation walkable urban development will spur even greater economic growth. On the other hand, it is also stated in the report that this growth is only feasible with appropriate infrastructure, zoning and financing mechanism. Moreover, the study of Leinberger and Lynch (2014) also states that there is positive correlation between walkable urbanism and per capita GDP, which means that the most walkable urban metro areas have significantly higher GDPs per capita. Furthermore, as it is asserted, the number of college graduates over 25 years of age in the population is also higher in these walkable areas. The finding suggests that the above mentioned correlation may be due to the association with the educated population. Without any doubt more research is needed but the evidence of their study makes a clear suggestion that encouraging walkable urbanism could be a great strategy for regional economic development.

Another significant point is that walkable neighbourhoods attract businesses. The cause behind it could be that in the global market competition, the geographical location of economic activities, from which the corporate long-lasting competitive edges came from, is crucial (Lengyel, 2003). Furthermore, Lengyel et al. (2012) also claims that the closeness of key members of the economy is decisive because of lower transaction expenses, not to mention the necessity of face-to-face contacts where they can share hidden knowledge, impressions and experiences. Benfield (2016) claims in his article that nowadays more and more businesses are choosing to locate in walkable suburban locations. In this article we can read that businesses express their preference in several ways, some of them move from the suburbs to places with city amenities, others stay and wait for the suburb to be remade into more walkable and urban places and there are also some entrepreneurs who set up shop in

previously disinvested in-town neighbourhoods. The survey of SGA (2015) also claims that in the United States more and more companies are moving to new locations that are dramatically more walkable than before and this is not just the phenomenon of big cities in the middle of the country, this trend is also visible in small cities, by the coasts and in secondary markets within larger metropolitan areas as well. There are several aspects listed in the survey, why companies chose to be located in walkable downtowns: to attract and retain talented workers, to build brand identity and company culture, to support creative collaboration, to be closer to customers and business partners, to centralize operations and to support triple-bottom line business outcomes.

Besides propelling the economy and appealing businesses, in walkable metropolises there were higher levels of educated people, creative class and these metros also had higher incomes, higher housing values, more high-tech companies and greater levels of innovation; these factors can drive economic growth, too and raise housing values and generate higher incomes as stated in Florida (2010). Thinking in metaphors, we can say that walkability is a magnet because it attracts and retains educated and skilled people and the innovative business, too (Florida 2011). Consequently, it can be stated that creative class prefers walkable neighbourhoods and business in walkable neighbourhoods are looking for creative workers. Walkability is an ecological imperative, and to an increasing extent a financial one as well, as fuel and time costs continue to climb (Florida 2014). In addition, walking attracts tourists and adds vibrancy to the downtown and commercial districts that benefits local and small-owned businesses with the increased patronage and traffic (Eidmann et al. 2011). It is obvious that tourists prefer walkable cities, where they can discover all the attractions in a vibrant pedestrian environment dotted with parks, squares or cafés, for instance the city of Barcelona. Incomes from tourism are substantial, so if the number of tourists grew, accordingly the income of local economy would be also higher.

Moreover, Leinberger (2011) argues that two generations, the Boomers (born between 1946 and 1964) and the Millennials (born between 1979 and 1996) impact the current real estate market since these two groups together are roughly 50 percent of the total population. As stated in the article, elderly people tend to prefer walkable areas which free them from the necessity of driving, while the generation of Millennials might find it impractical to buy and maintain a car in the current circumstances of the economy and like living closer to jobs and entertainment. If we take into account the aspect of Millennieals, that maintaining a car goes hand in hand with high costs, such as fuel, amortization, insurance, repair costs and parking

charges, we can conclude that for the less wealthy members of the society cars are luxury goods. Moreover, as the bigger part of the money spent on car transport probably leaves the city, or even the country, there is no doubt that this is not beneficial for the local economy. While if citizens are not charged by the costs of maintaining a car, they can spend more money on purchases in local shops, or local services. As a result, both Millenials and Boomers wish to live in a walkable neighbourhood. Furthermore, in the study of Leinberger and Alfonzo (2012) five levels of walkability is determined and they discovered that every time an area becomes more walkable, it *"a one-level increase of walkability translated into a $8.88 value premium in office rents, a $6.92 premium in retail rents ... a $301.76/square foot premium in residential rents, and a $81.54/square foot premium in residential housing values"* (Leinberger and Alfonzo 2012, p. 9.).

1.5.2 Other (environmental and medical) benefits

Probably, this aspect is the most obvious from all, since if people walk instead of using individual car transport, the amount of congestion, contamination, greenhouse gas emission decrease significantly, hereby ensuring an enormous advantage for the environment.

In the case of places which are being made more walkable, the environment will benefit as car trips become shorter and can be replaced by transit and walking trips (Benfield 2016). On the basis of Eidmann et al. (2011), with walking, people save money on gas, car insurance and maintenance; it also reduces the released carbon dioxide from the burning of fossil fuels. It is cited in MARC (1998) that the 1995 Oregon Bicycle and Pedestrian Plan notes: the increased walking not only help reduce traffic congestion, air and noise pollution but also reduces the number of crashes, injuries, fatalities and the need for additional parking, roads or travel lanes, which also contributes to the local environment.

The reduced traffic congestion, air and noise pollution has a powerful influence on people's general wellbeing, too. Without recognising it, the frames of their lives become friendlier. Actually, it is a "vicious circle", if we walk more, the environment become cleaner, less polluted, and friendlier; and if the environment is cleaner, less polluted and friendlier, we walk more.

Medical impacts of walking are also quite self-explanatory, since walking is a physical activity and physical activity is good for our health. In the article of Benfield (2014) we can read about an exhaustive past research about walkable neighbourhoods and cities and their

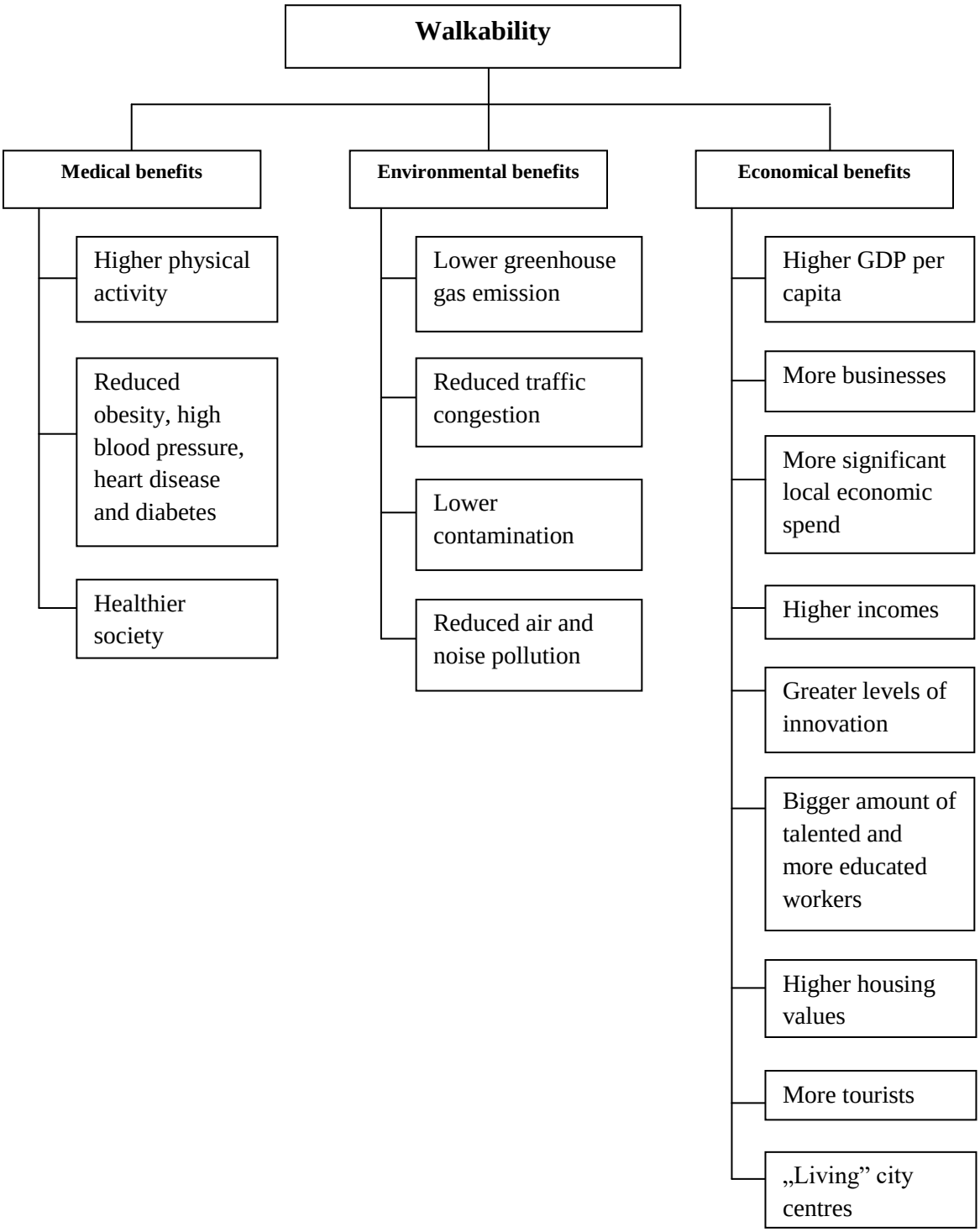
advantages. In this article it is demonstrated that these neighbourhoods and cities not only reduce driving, associated emissions but also good for our health. The author mentioned that one research, which examines different aspects of compact, walkable, and mixed-use communities comparing them with published government health data, reveals that in these neighbourhoods high blood pressure, obesity, diabetes and heart disease are reduced. The reason is that walkable environments encourage walking and walking facilitates good health, which means lower medical costs for citizens.

As mentioned earlier, street network can influence people's transportation choice. The study of Vernez Moudon et al. (2006) supports this sequence of ideas: in their opinion environmental attributes, such as residential density, block-size and the distances of food and daily retail facilities from home are associated positively with walking sufficiently to meet health recommendations. This study also claims that within current development practices in the urbanized areas of the country, the creation of supportive environments for walking could be achieved.

As a conclusion, it can be stated that walking has numerous benefits on people's life (Figure 1). To summarize these benefits and impacts I have created a figure which helps to understand them. With all the above mentioned in mind, we can be convinced of the importance of walkability. It not only benefits the environment with the reduced number of cars and CO_2 emission, but also ensures our health with being an active form of transportation. Furthermore, it should be highlighted that it has numerous positive effects on our economy since it is a powerful driver of economy, too.

Creating walkable compact cities is a global priority (Giles-Corti et al. 2014), since neighbourhoods with these features promote active modes of transport, like walking and cycling (TRB 2005). According to Giles-Corti et al. (2014), there are more and more evidence showing that city design can influence the willingness and ability of residents to walk for transport. According to Eidmann et al. (2011) too, nowadays, environmental design has an important role in maintaining a healthy society. A built environment, which is compact and walkable, encourages people to use active forms of transportations, so it can effectively integrate physical activity into everyday lives and in this way combat obesity and other health problems (Eidmann et al. 2011). A higher level of safety is also a crucial factor that contributes to the popularity of walking.

Figure 1 Some possible benefits of walking



Source: own construction

Regarding the drawbacks of walkability, little information is available because of the fact that fundamentally not many of them exist. Although walkability does not have disadvantages which would affect the overall society, it could have negative effects on certain societal groups. First of all, drivers can sense issues when slowed down or banned out of particular areas of the city, which problem can be solved if policy makers think every measure

thoroughly through and take into account the mobility needs of every member of the urban transport, with ensuring public transport alternatives, car-share systems or cycling lanes, just to mention a few. In addition, if drivers complain about their situation because of the fact that public transport vehicles do not mean the same level of comfort as cars; governments should also focus on making these vehicles as modern as possible. Furthermore, if the emphasis is put on the shops in the city centre, fewer citizens will purchase in the malls of suburbs, on the other hand, possibly the amount of purchases will grow on the whole.

2. How to quantify walkability in local economies?

In the first chapter I gave an overview of the specialized literature in the subject of walkability and in this way we got familiar with the necessary terms and effects of walkability. In this chapter of my study I would like to present walkability from a practical aspect in order to gather ideas and to establish the framework for my own empirical research. Walkability is something that can be quantified with more than one method. I am going to present these methods in the following sections: Walk Score, Walkability Audit and Walkability Index which all contributed to the preparation of the questions used in the questionnaire and interviews of my own research which I will demonstrate in the following chapter.

2.1 Walk Score

Walk score is a measurement of the walkability of any address that was developed by Walk Score advisory board. During the measurement a patented system is used. To get the points of a given address, hundreds of walking routes to nearby amenities are analyzed; the distance to amenities in each category is the base of points. If the amenity is just 5 minute far by walking, a maximum point is given. More distant amenities get points using a decay function, but if the amenity is further than 30 minutes, it does not get any points. I also applied a question in the course of my own empirical research in connection with the approachability of amenities; I asked citizens whether they are able to reach certain institutions by walk.

Walk Score also analyzes population density and road metrics such as block length and intersection density in order to measure pedestrian friendliness. Data is collected from different sources: Google, Education.com, Open Street Map, the U.s. Census, Localeze and places added by the Walk Score community.

On the basis of the given points, addresses are classified into the following categories from the lowest scores to the highest: 0-24: car-dependent, where almost all errands require a car; 25-49: car-dependent, where most errands require a car; 50-69: somewhat walkable, where some errands can be accomplished on foot; 70-89: very walkable, where most errands can be accomplished on foot; 90-100: walker’s paradise, where daily errands do not require a car (Table 1).

On the basis of the measurement of the level of walkability in cities, there are some rankings available of the most walkable cities and neighbourhoods in the world. These could serve as role models for cities and neighbourhoods that would like to improve their walkability. Here I would like to present some examples on the basis of the Walk Score method. Since the method is not applied in European cities, all the examples are from the United States of America, Canada and Australia.

Table 1 Walk Score categories

Walk score	Description	Examples
90-100	**Walker's Paradise** Daily errands do not require a car.	**Downtown of Boston**
70-89	**Very Walkable** Most errands can be accomplished on foot.	**New York, San Francisco**
50-69	**Somewhat Walkable** Some errands can be accomplished on foot.	**Ottawa, Sydney**
25-49	**Car-Dependent** Most errands require a car.	**Gold Coast**
0-24	**Car-Dependent** Almost all errands require a car.	**Suburbs of Sydney**

Source: on the basis of https://www.walkscore.com/methodology.shtml, own construction

The information of this part of the chapter is essential from the point of view of my empirical research. When quantifying walkability this method analyzes several factors of neighbourhoods, from which I also used some: I was curious of people's opinion about the distance of amenities from their homes. In other words, the method of Walk Score contributed to the preparation and composition of my own investigation.

2.2 Walkability audit

In this section of my study I would like to demonstrate how walkability can be evaluated with the help of a walkability audit. I will present the method with an example from Eidmann et al. (2011); the authors of that study measured the level of walkability in the city of North Adams with a walkability audit.

The method used to evaluate streets for their walkable character is called walkability audit, which takes into account numerous criteria. The survey, that is designed to be administered while walking and evaluating the streets, is called audit tool. After the evaluation, every street section gets a quantitative score and a qualitative assessment, which serve to make recommendation in order to improve the quality of walking. The quantitative part of their audit tool is divided into several sections and the specific criteria are ranked in each section on a scale from 1 (worst) to 5 (best). The following description of the audit tool can be found for commercial streets in the research of Eidmann et al. (2011):

1. **Sidewalks**

   Since the sidewalks are the most important component of the streets' safety and commodity, their presence, condition, obstructions, overall connectivity and width are evaluated. They can be the best buffer against cars. Implicitly, discontinuous, damaged, narrow sidewalks, blocked with anything, like obstructions or parked cars, received lower ratings, while sidewalks that are wide enough for two people to walk side-by-side, continuous and are in a good condition, received higher scores. I also took this aspect into account while editing my own empirical research; I asked local people about their opinion regarding the safety, cleanness, condition and blockage of sidewalks.

2. **Crosswalks**

   For pedestrians, crosswalks are the most dangerous locations because they come into close proximity to vehicular traffic at this point of the streets. What makes a crosswalk safe is visibility for both pedestrians and drivers, therefore crossings should be placed in frequent and useful locations and have clear signage, smooth curb cuts and visible on-road indication. In this section the authors identified areas that lack crosswalks and also evaluated the wait time and the crossing time at intersections with traffic lights. Taking this also into consideration, I added questions to my empirical research about the safety of crossing and the consideration of the waiting and crossing time.

3. **Signage**

   Signage is most important from the point of view of tourists, since it helps them find amenities, attractions, like public restrooms, parking, information, historic sites, recreational sites, retail shops and restaurant. With the help of these signs, the feeling of the city is more welcoming. Not to mention the economic advantage for businesses

as well. Moreover, the relevant road signs, such as speed limit, street signs, are also evaluated in the audit.

4. **Aesthetics and Amenities**

   The overall appearance of streets, store fronts and houses can appeal people to walk and feel pleasant while walking; these appealing factors can be the presence of trees or other green areas and relevant amenities (benches or trash cans), too. I also find this factor important when evaluating the level of walkability of a city, therefore I asked people about their opinion of the presence or lack of amenities.

5. **Safety**

   It is one of the most important aspects of a walkable, pedestrian-friendly environment. A number of factors can influence our sense of security: presence of other pedestrians, appropriate traffic speed, night-time lighting, isolation from cars, abandoned houses or litter. These factors were also mentioned in my interviews and questionnaires.

The qualitative part of their audit tool includes the presence of bicycle amenities, public transit stops, type and number of people present in the segment, amount of parking available and the streets' overall connectivity, describing the dangerous and unpleasant parts of the evaluated segment. I also used this aspect in my research with questions about the connectivity and parking opportunities.

In case of residential streets, their audit needed to be changed to a certain extent because these streets have different characteristics. Regarding sidewalks, the presence of grass buffer that separated the sidewalks from streets was evaluated. As the evaluation of signage was not as important as on commercial streets, it was also omitted. Furthermore, benches and trash cans were also removed from the evaluation.

Additionally, in the course of their project, they conducted informal pedestrian interviews and formal stakeholder interviews to be able to obtain all the necessary data which I also applied in my research.

After all, the project group used Geographic Information System (GIS) in order to locate the evaluated segment on an aerial map and input their data into these segments. It helped them make comparisons.

The aim of surveying the level of walkability in cities with a walkability tool is to give recommendations for governments how they can improve the current level of walkability.

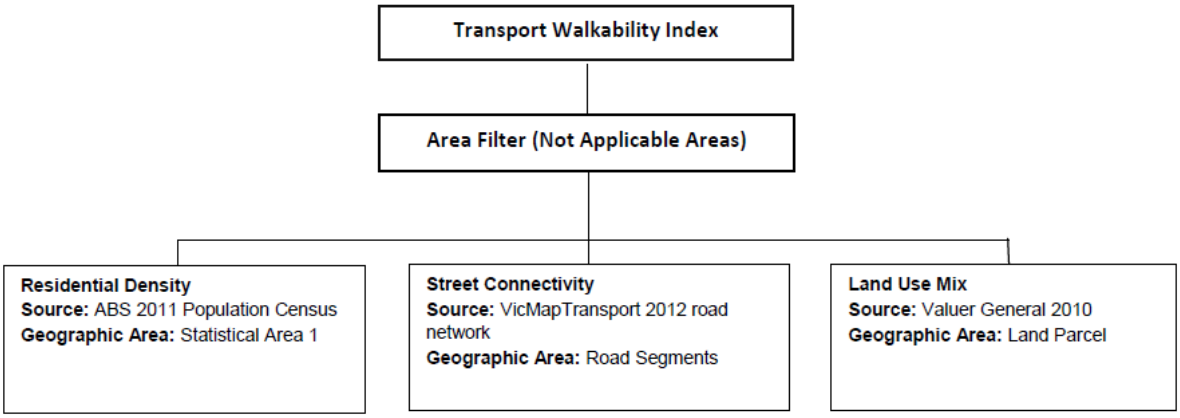
As a summary, it can be argued that a walkability tool is a very useful and quite comprehensive mode of evaluating the level of walkability in a city. As a consequence, I also used several aspects of this method when constructing my own empirical research including the evaluation of sidewalks, crossings, amenities, safety, and connectivity and parking possibilities. All of these took part of my observation, questionnaire and interviews.

2.3 Walkability Index

Another method to assess the walkability in neighbourhoods is the walkability index. In this section I also would like to demonstrate how the walkability index works with an example from Giles-Corti et al. (2014).

According to Giles-Corti et al. (2014), the goal of the Transport Walkability Index is to measure transport walkability and for the calculation three main datasets are required, such as residential density, street connectivity and land use mix (Figure 2). After the calculation and harmonization of these data, the researchers of Giles-Corti et al. (2014) have imported the obtained data within a Geographic Information Systems (GIS) platform. The figure below gives a draft of the source and geography of the three datasets.

Figure 2 Schematic diagram of data inputs for the Transport Walkability Index



Source: Giles-Corti et al. (2014) p.10.

First of all, to prepare the Transport Walkability Index those areas have to be determined, which are not applicable for walking for transport. In this case researchers have used the model of the Australian Bureau of Statistics (ABS) SEIFA index and their criteria.

Secondly, the gross dwelling density has to be calculated by dividing the number of dwellings within a small statistical area by the area of the statistical area. Some limitations have been defined: semi rural areas with low gross residential densities of less than 3 dwellings per hectare and areas without a population were excluded.

Then, the street connectivity was calculated by identifying intersections with three or more streets forming an intersection. Afterwards, they were divided by the area of SA1. They used the intersections from road network data.

The land use mix derived on the Valuer-General Victoria (2010) dataset, using the Australian Valuation Property Classification Coda they classified each land into categories: retail, residential, community, commercial and recreational facilities. They calculated the land use mix for a given SA1 area with the help of an entropy formula, resulting a value between 0 and 1, where 0 means single land use.

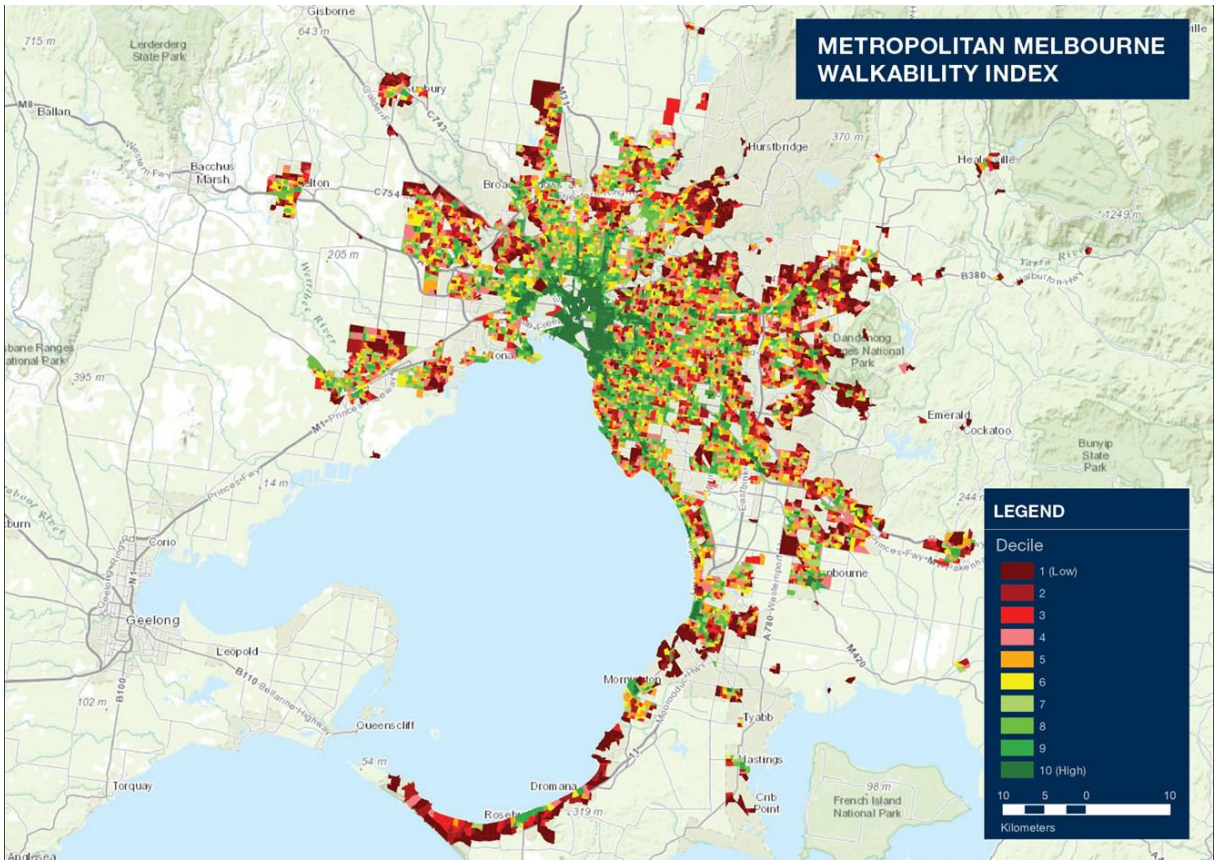
After they calculated the value of every segment of the index, they brought them into the range 0-1. The final Transport Walkability Index was calculated by summing the z-scores for dwelling density, street connectivity and land use mix. To simplify the method, the final scores have been scaled so they can be interpreted as deciles for visualisation and analyses.

To further ease the interpretation, the final Transport Walkability Index's scores have been part of the visualization in a geographic context on a map. On the following map, we can see the level of walkability (deciles of walkability) in the different parts of Melbourne (Figure 3). The colour of walkable areas is green; the darker the green, the more walkable the neighbourhood is. Low walkable areas are indicated in shades of orange to red, where red means the least walkable area.

The Transport Walkability Index can be applied in various ways; it can mean an outstanding information collection for policymakers and planners to see where they should work on improvements and where the investments are needed. It is also useful for monitoring progress over time, if an up-to-date version is available.

Without any doubts, this is just one example for a Walkability Index; it can be changed or further developed for example by adding other variables such as access to footpaths or to public transport.

Figure 3 Metropolitan Melbourne Transport Walkability Index



Source: Giles-Corti et al. (2014) p. 13.

Since the method of this walkability index requires a lot of up-to-date data which might be difficult to obtain, I decided to put the emphasis on the earlier methods.

Taking everything about how walkability is quantifiable into account, the lesson can be drawn that many aspects of the above demonstrated methods can be applied in the course of my own empirical research which will be presented in the following chapter.

3. Walkability survey in Szeged and in Valencia

In the previous chapters of my paper, I synthetized the scientific and practical achievements on the subject of walkability, with the help of an overview of the specialized literature. In the first chapter the most important terms, the challenges behind walkability as well as the impacts of this methodology were demonstrated. In the second chapter I investigated the practical aspects of walkability, including how it can be measured and applied. With all the previous in mind, I drew the lesson and grounded my own empirical research.

3.1 Methodology

In this part of my paper I would like to describe how I conducted my primer research in the light of the purpose of my study which is to interpret and apply the method of walkability in medium-sized cities and to investigate the level of walkability, its improvement opportunities and possible advantages using the example of two concrete cities, Szeged and Valencia. I try to tackle the challenge in hand by using multi-level empirical research, including:

1. observation,
2. questionnaire and
3. in-depth interviews.

I conducted my research in the cities of Szeged and Valencia, where I had the opportunity to accomplish all three levels since I lived in both cities and was able to investigate walkability. Before the explanation of my model, I present the cities where the research has been done and the reasons why I chose them to be part of my investigation.

3.1.1 Szeged and Valencia

The two chosen cities are Szeged in Hungary and Valencia in Spain. The question now arises, why these two cities, why these two countries? Frankly, I have been engaged in the subject of walkability for more than a year. Since I am studying and living in Szeged, I was mostly interested in the walkability of this city. On the other hand, evaluating the level of walkability in Szeged without a benchmark is very relative, therefore I realized that the city needed to be put into an international dimension. In case of any research, collecting data is the biggest challenge. I thought that exploiting the Erasmus opportunities of my university would be a

great way to conduct research in another country during months. As a consequence, I chose Valencia, as a comparator city, because Hungary and Spain are comparable from certain points of view of the economy and society. Without doubt, there are limitations that I explain after the presentation of my empirical research. Below, I give a short description of Szeged and Valencia, completed with maps.

Szeged[1]

Szeged is the third largest city of Hungary after Budapest and Debrecen, moreover the largest city and regional centre of the Southern Great Plain. The city is situated near to the southern border of Hungary on the Southern Great Plain, at the meeting of river Tisza and Maros. Szeged is the county seat of Csongrád County. Szeged and its area have been inhabited since Neolithic times, and nowadays there are 162,593 inhabitants.

Today's Szeged is an important university town; the University of Szeged is one of the most distinguished universities in Hungary. The city is also well-known for its food industry, especially for the products of paprika and Pick salami. Regarding public transportation, residents can use 5 tramways, 6 trolley buses and 33 bus lanes.

Due to the great flood of 1879, which literally wiped away the whole town (165 people died), today the inner city of Szeged has beautiful buildings and wide avenues. After the flood, King Ferenc József rebuilt the city, generating a new, modern layout.

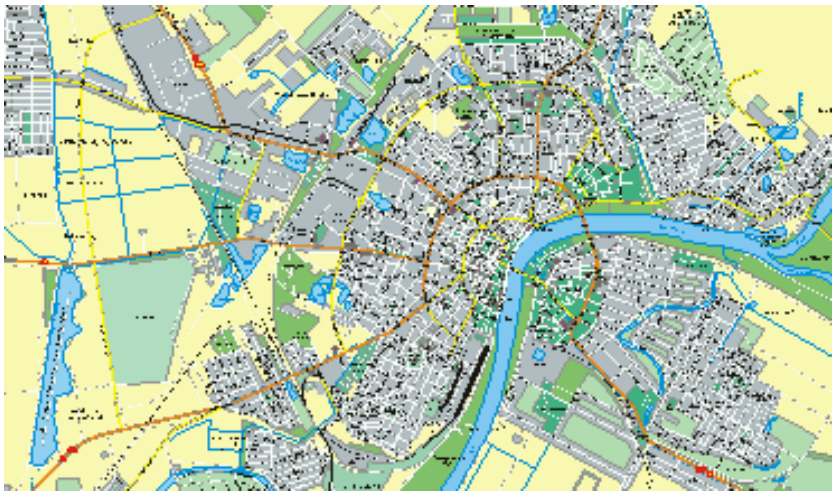
Szeged's climate is transitional between Oceanic climate and Continental climate, which means cold winters, hot summers and relatively low precipitation. Because of the high hours of sunlight reported annually, Szeged is frequently called the "City of Sunshine".

The main sights include Votive church, The Water Tower of Szent István Square, Ferenc Móra Museum, Reök Palace, City Hall, Szeged Synagogue, National Theare of Szeged, Gróf-palace, The Main Building of the University, Black House, the centre of the city, Zoo of Szeged, The Botanical Garden, etc.

To ensure the better transparency I provide a map of the city (Figure 4).

[1] https://www.szegedvaros.hu/

Figure 4 The map of Szeged



Source: http://www.terkepcentrum.hu/index.asp?go=map&mid=6&tid=33367&verzio=2008

Valencia[2]

Valencia is the third largest city in Spain after Madrid and Barcelona, furthermore the capital of the autonomous community of Valencia. The city is situated on the bank of river Turia, on the East coast of the Iberian Peninsula, fronting the Mediterranean Sea. The city was founded as a Roman colony in 138 BC, and nowadays there are 800,000 inhabitants in the administrative centre.

The Port of Valencia is the busiest port on the Mediterranean Sea. The historic centre of the city is one of the largest in Spain with heritage of ancient monuments, views and cultural attractions, which makes Valencia a popular tourist destination. Besides tourism, construction industry, telecommunication and transport have also contributed to the recovery of the country after the crises. There are numerous public transport opportunities in the city, buses or metros for instance. A bicycle sharing system, called Valenbisi, is also available for residents and visitors, too. The University of Valencia was founded in 1499, being the oldest surviving universities in Spain, but in today's Valencia there are more available universities.

The city has suffered catastrophic floods in 1949 with dozens of deaths but unfortunately, it was followed by another even more tragic flood in 1957 when the river Turia killed many citizens. Eventually, the river was diverted to a new course in order to avoid further disaster. Afterwards, the old riverbed was transformed into a park, called "Garden of the Turia", where

[2] https://www.valencia.es/

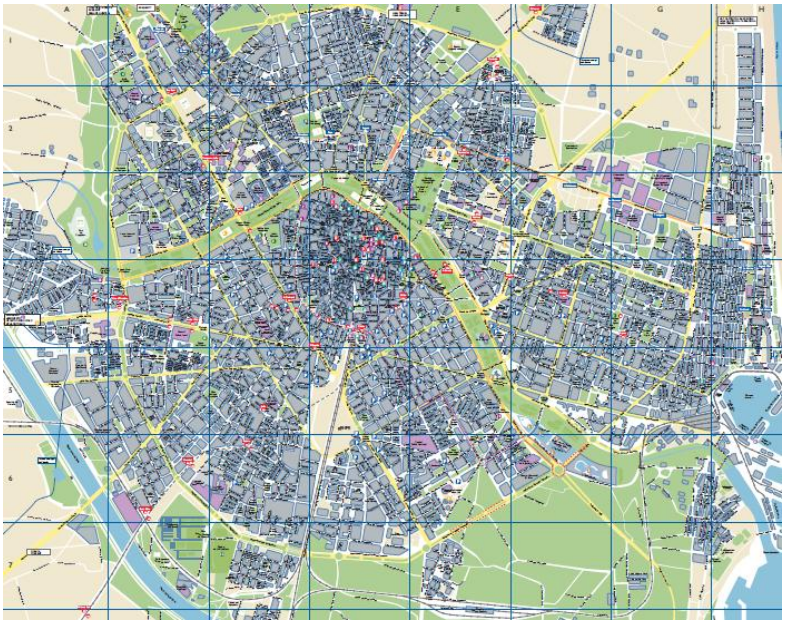
now pedestrians and cyclists can traverse the city without being disturbed by motorized transport.

Valencia has a semi-arid climate with very mild winters and long hot dry summers.

Speaking about the major monuments the following should be mentioned, Valencia Cathedral, Torres de Serrans, Lootja de la Seda, Ciudad de las Artes y Ciencias, Museo de Belllas Artes de Valencia, the historic centre of the city, etc.

As in case of Szeged, here I also provide a map of Valencia for the better comprehension (Figure 5).

Figure 5 The map of Valencia

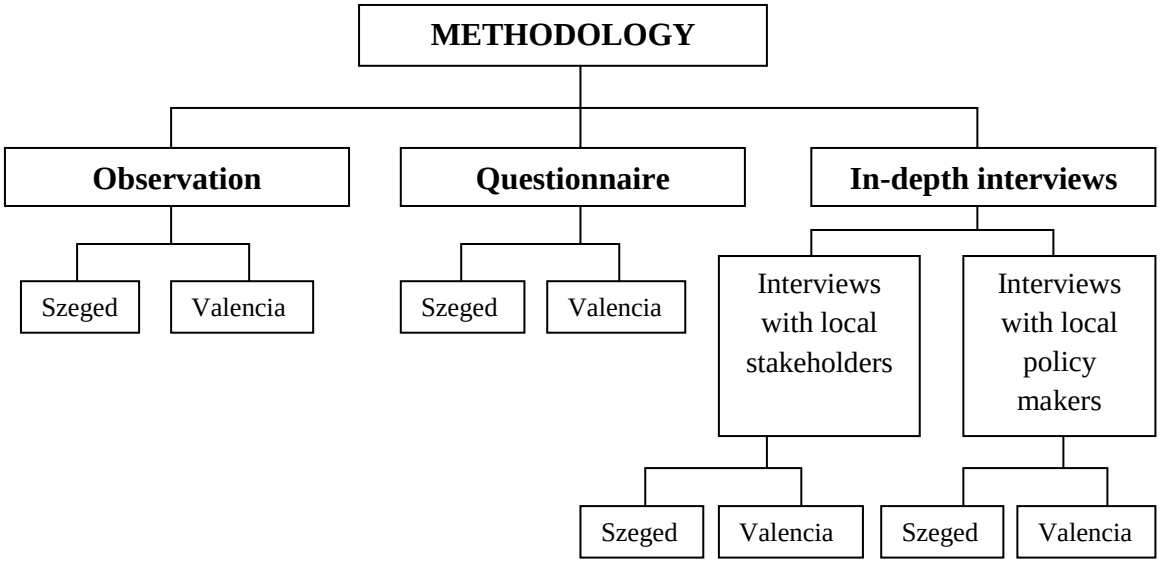


Source: http://www.valencia-cityguide.com/images/practical/pdfs/planovalencia2006.pdf

3.1.2 The structure of the methodology

After the city descriptions, I explain the methodology behind my research. As written before, three levels exist which are personal observation, questionnaire and some in-depth interviews with local stakeholders and local policy makers in both Szeged and Valencia (Figure 6).

Figure 6 The methodology of my research



Source: own construction

According to Kawulich (2005), participant observation is a process that enables researchers to learn about people under study in the natural setting. As it is cited in the study of Kawulich (2005), DeWALT- DeWALT (2002) said that fieldwork involves improving memory, informal interviewing, active looking, writing detailed field notes and patience. In these two authors opinion, it is a method that can increase the validity of one study and help to better understand the context and phenomenon under study. Furthermore, they add that validity can be increased by additional quantitative methods, interviewing, questionnaires or surveys. One really important requirement of participant observation is to keep a running observation record that can be found in Kawulich (2005) as she cites DeWALT- DeWALT (2002).

The first level of my primer research is personal observation that I conducted in both cities when I lived there. During my personal observation, which was participant observation, I wrote field notes in order to ensure records. I found it substantial to make these observations to have an insight into the situation of walkability of the cities before surveying the citizens.

In the course of the preparation of the questionnaire I created a list of questions with the help of some prior studies, the demonstrated methods of Walk Score and Walkability Audit and my own personal observation, when I walked in Szeged and in Valencia in order to monitor traffic, streets and people who walk. From the point of view of the methodology, I found it very important that the walkability of the two cities cannot be evaluated only by comparing Szeged and Valencia with each other but they have to be put into an international dimension

relying on already existing scientific achievements. I have analyzed numerous walkability surveys. To be able to compare my results with the results of these prior surveys, I needed the raw data of the answers of these questionnaires. Since this data is not available, I got in touch with researchers and asked for their contribution. Thanks to their help, my questionnaire contains 2 questions that were part of the questionnaire of prior international research so Szeged and Valencia can be placed into an international walkability dimension. I used questions from the study of Soutworth in Santa Rosa and also from the study of Toronto Public Health (2012).

The need for this online questionnaire was not questionable; I had to reach citizens who walk and know everything about the condition of the city regarding infrastructure connected to walkability. As I see, nowadays almost everyone uses the internet, so it seemed an obvious channel to contact a significant number of people which is essential from the point of view of the research. The questionnaire is prepared for citizens in their mother tongue so that they can understand everything clearly. In the questionnaire there are eighteen closed-ended questions, concentrated on the most important factors of walkability[3]. The benefits of the open-ended questionnaire are the easy statistical evaluation and the possible quantification if needed, but unfortunately people cannot elaborate their thoughts.

The third level is some in-depth interviews with which I tried to get rid of the imperfections of the online questionnaire. I asked 5-5 citizens in both Szeged and Valencia in order to get even more familiar with the thoughts of local people. These people are more connected to walkability from some aspects, e. g. they are part of a civil organisation fighting for the protection of the environment, or teachers/professors who have an influence on the future citizens, or people who are dedicated to live a healthy lifestyle and walk a lot, or someone who is part of the local government and can have an influence on the city planning. The structure of the in-depth interviews differs depending on interviewees: local stakeholders and local policy makers. In the course of the interviews with local stakeholders I only asked open-ended questions but similar to the ones that are in the online questionnaire to understand the motives why people in general think these certain things about the issues of walkability in their cities[4]. The interviews with local policy makers also included open-ended questions but more specifics to the current policy of the city regarding walkability[5].

[3] The questionnaire can be found in Appendix 1.
[4] The in-depth interview with local stakeholders can be found in Appendix 2.
[5] The in-depth interview with local policy makers can be found in Appendix 3.

3.1.3 Limitations of the survey

There are unquestionable limitations in connection with the survey I have conducted. To start with I have to acknowledge that the two cities differ in size and level of development. Szeged is 281 km^2 big with the population of 162, 593 people, while Valencia is 135 km^2 big with the population of 786, 189 people. Not to mention the disparities in the system of transport of the two cities, from which the biggest is that Valencia has an underground system with several lines. All of these can have an effect on the interpretability of the survey's results. On the other hand, this might not happen thanks to the fact that Szeged and Valencia both have a city centre which is well circumscribed. This is substantial since the walkability of a city centre is decisive in every city.

3.2 Observation

At this part of the chapter I am going to demonstrate my experience of the participant observation I conducted in Szeged and in Valencia.

As I have written before, I got engaged in the subject of walkability more than a year ago. After a few months I realised that I would like to make a research on my own, therefore I started to make participant observation in Szeged in October 2015, which lasted for 2 months. I dedicated 30-90 minutes almost every day but in different hours for the observation of pedestrian traffic. When I moved to Valencia, I was able to do the same in that city, too. My observation there lasted from the beginning of February to the end of March 2016. This means that the total time dedicated for the observation in one city was an average 50 minutes every day during 2 months.

In order to be able to meet the requirements of participant observations, I made field notes during the observation. This also contributed to the possibility of information retrieval, which is substantial for the posterior evaluation of data. Furthermore, I also used several tools from the list of Gehl and Svarre (2013): counting, mapping, tracing, photographing and test walks. Just for the better understanding, I am demonstrating the cores of these tools in a few sentences. Counting is providing numbers of what I judged to be relevant for my research, for instance people passing by. Mapping means drawing of symbols on a plan of the area studied in order to mark the number and type of activities that took place (Gehl and Svarre 2013). The authors define tracing as lines of movement drawn on a plan of people movements inside or

crossing a limited space. Photographing is quite self-explanatory but it can be an essential part of the study to document the situation. According to Gehl and Svarre (2013), test walks provide a tool to observe potentials and problems of the city life, for example discovering an intersection with inappropriate waiting time.

As for me, I used these tools in the following way. I counted people entering a certain shop and a gym for example in order to decide which the most important establishments are in people's everyday life. In the course of mapping I drew symbols in a map to find out how frequently do disabled use certain streets. Tracing served as a tool to assess the number of pedestrians who avoid certain streets because of the lack of proper lighting. I also took photos to record the condition of walking paths and crossings. Furthermore, I applied test walks as a part of my observation, when I followed tourists to find out where they go and which route they use. I was curious whether there are typical routes that they use, since tourist guides usually show the city on an optimized way, that they created by themselves. If typical routes exist, conjectures for thematic routes could be defined.

The purpose of my participant observation was to prepare and base the questionnaire and the in-depth interview. Taking my observation into consideration, I was able to define questions that are relevant to the walkability of the given city and at the same time ensuring the comparability. Besides the observation of infrastructure, pavements, crossings, lightings, etc., I also paid attention to the accessibility of some of the most important establishments, such as schools, banks, post offices, shops, restaurants, public transport stations, churches and medical centres. Moreover, I also observed the route of tourist groups in the cities and how much are the most important tourist-attractions approachable.

Taking everything into consideration, the walkability of the two cities is different from certain standpoints yet there are some features which are similar. I would like to highlight that in both cities, the layout of the city centres are far better than the layout of the neighbourhoods, which is understandable from the point of view of local governments since they would like to make the city more appealing for visitors and they are more likely to visit the centres. The outcomes are just elementary results based on my personal participant observation at which I tried to minimize the subjectivity that is obviously impossible. I would like to use these results to help the more exhaustive questionnaires and interviews.

3.3 Questionnaires

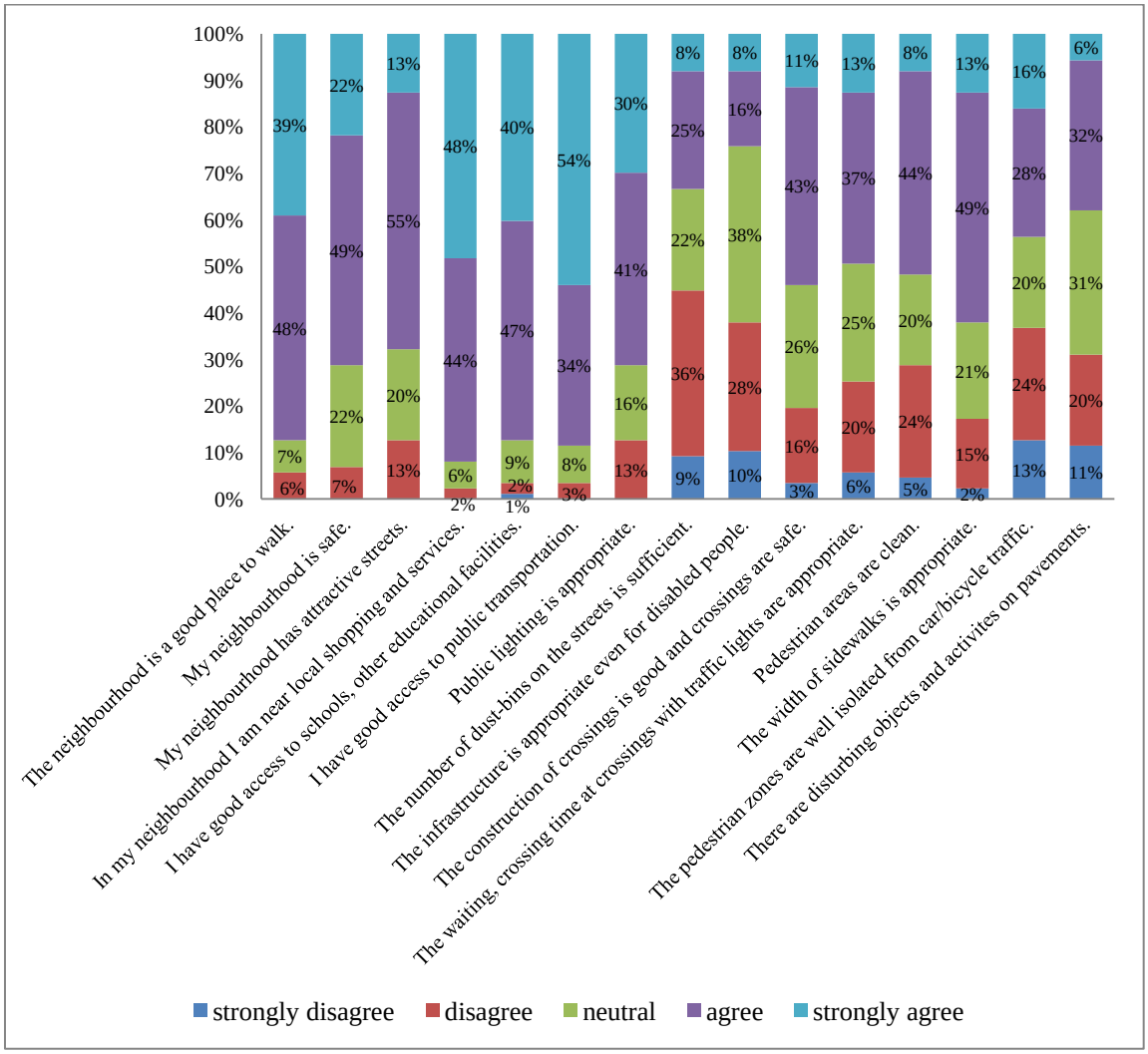
As mentioned previously, the questions of the questionnaires are based on prior studies, the previously demonstrated methodologies and my own personal observation. Not to mention that the cities are put into an international dimension, this means that they are compared to the results of some prior international research in case of two questions. I wanted to reach as many people as possible therefore I used the help of the internet as well. I shared the questionnaires via e-mails, Facebook groups and pages, too. To ease the filling, I translated the questionnaires to the mother tongue of the asked locals (Hungarian and Spanish). The questionnaire includes eighteen closed-ended questions, which helps to quantify the data; however people cannot elaborate their thoughts in details. This limitation will be solved by the in-depth interviews where participants can elaborate their thoughts. Altogether 129 respondents filled out the questionnaires in the two cities and the sample size in Szeged and in Valencia was approximately equal. The sample was not representative.

In the first part of the questionnaire I was curious about what people think of their neighbourhood from different standpoints. They had five options to choose from whether they strongly disagree, disagree, neutral, agree or strongly agree in case of every statement. Here are the statements:

1. The neighbourhood is a good place to walk.
2. My neighbourhood is safe.
3. My neighbourhood has attractive streets (street trees, landscaping, paving, lighting, houses).
4. In my neighbourhood I am near local shopping and services.
5. My neighbourhood has good access to schools and other educational facilities.
6. I have good access to public transportation.
7. Public lighting is appropriate.
8. The number of dust-bins on the streets is sufficient.
9. The infrastructure is appropriate even for disabled people.
10. The construction of crossings is good and crossings are safe.
11. The waiting and crossing time at intersections with traffic lights are appropriate.
12. Pedestrian areas are clean.
13. The width of sidewalks is appropriate.
14. The pedestrian zones are well isolated from car/bicycle traffic.
15. The location of obstruction, fire-hydrants, columns, lampposts is disturbing while walking.

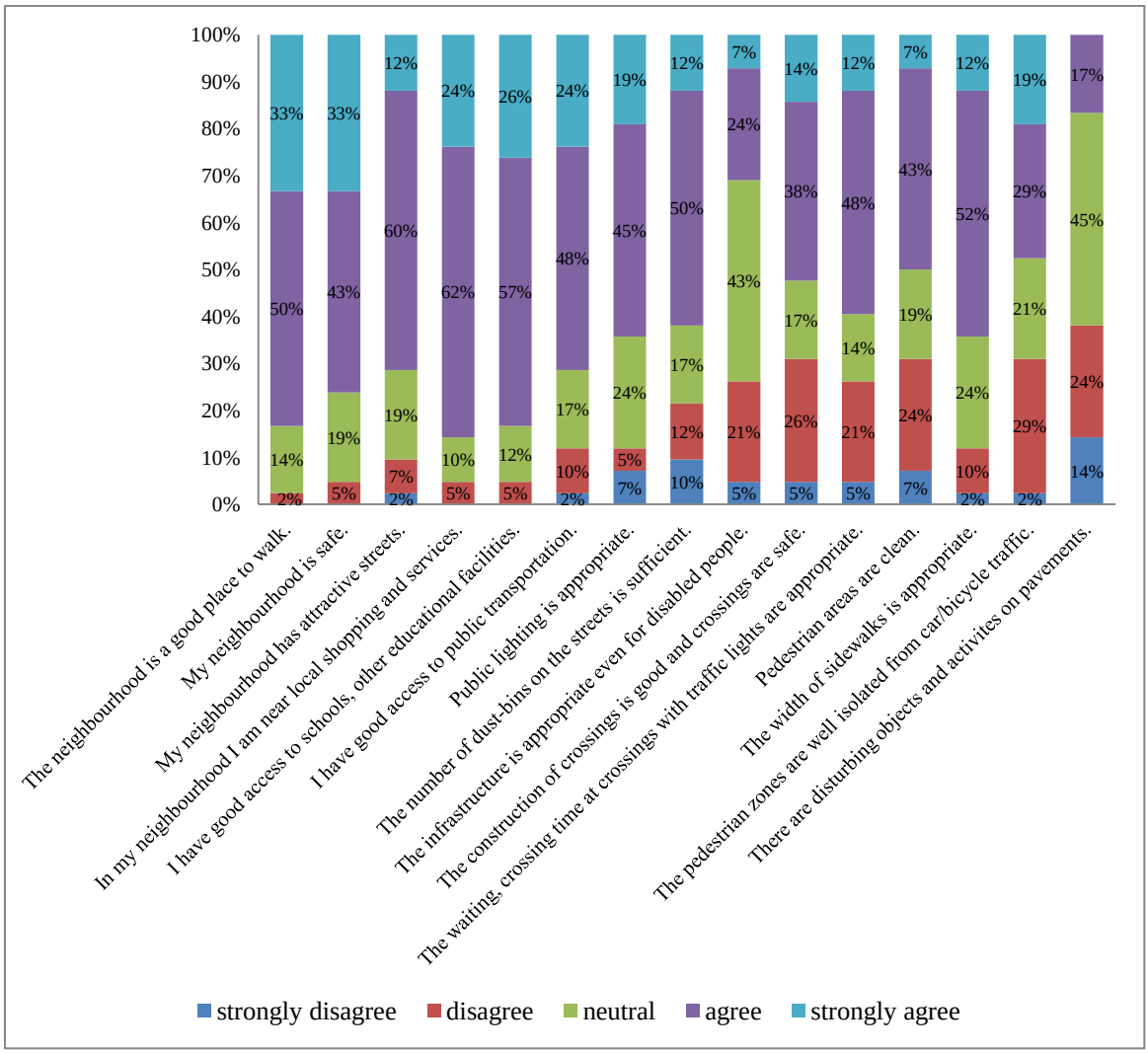
The results are demonstrated in the two figures below. As it can be seen from the diagrams, the opinion of citizens from the two cities significantly differs in case of some statements. Firstly, probably the most outstanding is the number of dust-bins on the streets in neighbourhoods. Only 33% of locals in Szeged agreed that the number of dust bins is sufficient (Figure 7), while this number in Valencia was 62% (Figure 8). Secondly, it is also visible that at statement 6 88% of respondents from Szeged agreed that they have a good access to public transport stations and only 11% disagreed with it. Speaking about the same issue in Valencia, 72% of respondents agreed with the good accessibility, which is 16 percentage points less than the 88% in Szeged, and 12% disagreed to a certain extent. It seems that people are more satisfied with public lighting of neighbourhoods in Szeged than in Valencia since there 7 percentage points more respondents agreed with the appropriateness of public lighting in neighbourhoods.

Figure 7 The opinion of the citizens from Szeged of their neighbourhood (%)



Source: own construction

Figure 8 The opinion of citizens from Valencia of their neighbourhood (%)



Source: own construction

The biggest amount of neutral answers (38% in Szeged and 43% in Valencia) can be found at statement 9, so it can be concluded that people in both cities are not really bothered whether the infrastructure is appropriate for disabled people or they cannot evaluate it properly. At statement 10, the difference between Szeged and Valencia reveals itself in the rate of disagreements: 19% of the locals in Szeged and 31% of the locals in Valencia disagreed with the statement that the construction of crossings is good and crossings are safe, which means that a 12 percentage point difference exist between the two cities. Another significant difference can be discovered regarding the disturbing objects on pavements. In Szeged 38% of respondents agreed to a certain extent that obstructions, fire-hydrants, columns or lampposts are disturbing while walking, however in Valencia the same issue bothers 21 percentage points less respondents, which means 17%.

The second part of the questionnaire is very similar to the first one, except for the fact that in the second part people were asked about their viewpoint about the city centre from the same aspects as they were asked in connection with their neighbourhood. They could choose from the same five options, whether they strongly disagree, disagree, neutral, agree or strongly agree. The fifteen statements in this case were these:

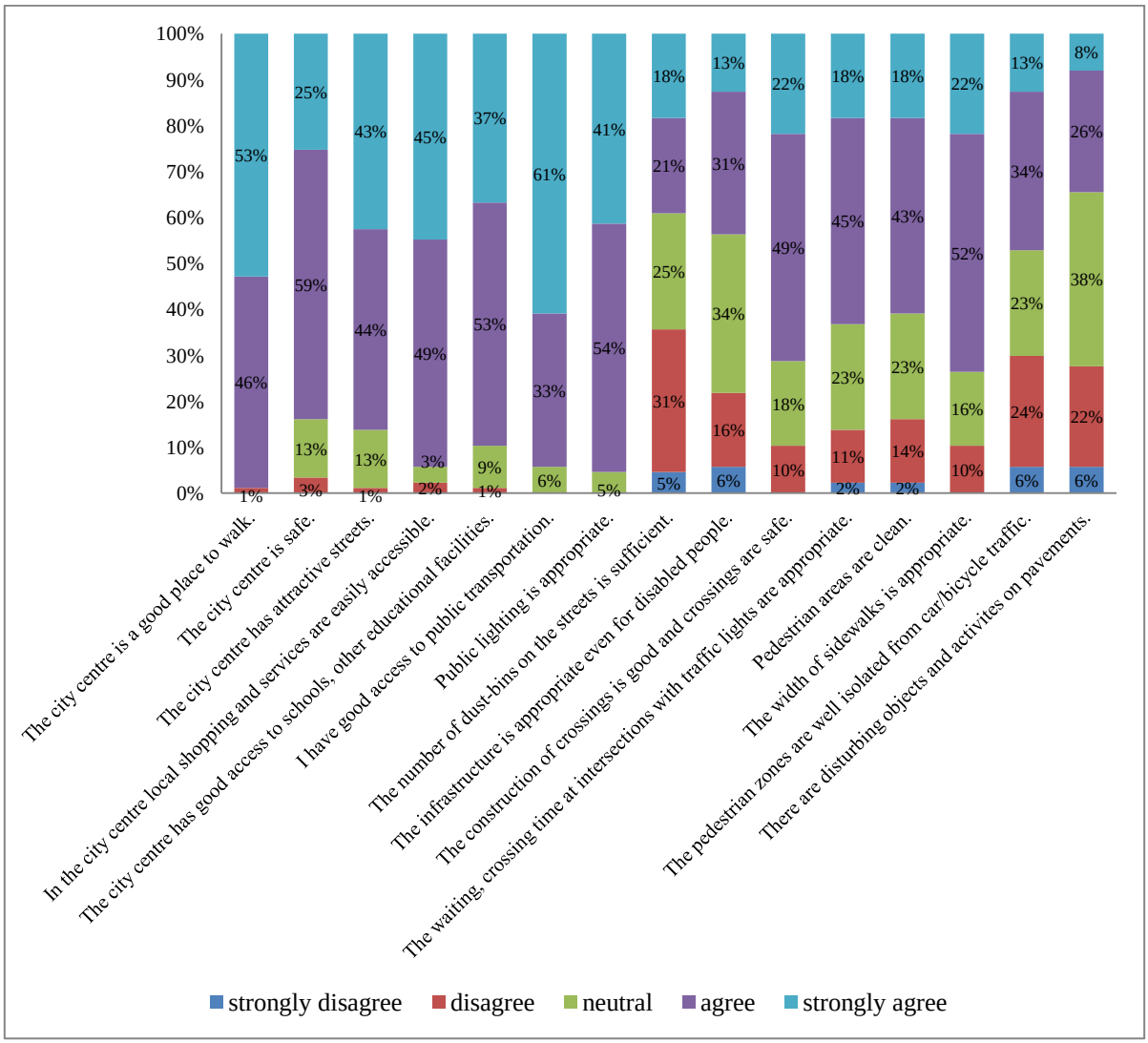
1. The city centre is a good place to walk.
2. The city centre is safe.
3. The city centre has attractive streets (street trees, landscaping, paving, lighting, houses).
4. In the city centre local shopping and services are easily accessible.
5. The city centre has good access to schools and other educational facilities.
6. I have good access to public transportation.
7. Public lighting is appropriate.
8. The number of dust-bins on the streets is sufficient.
9. The infrastructure is appropriate even for disabled people.
10. The construction of crossings is good and crossings are safe.
11. The waiting and crossing time at intersections with traffic lights are appropriate.
12. Pedestrian areas are clean.
13. The width of sidewalks is appropriate.
14. The pedestrian zones are well isolated from car/bicycle traffic.
15. The location of obstruction, fire-hydrants, columns, lampposts is disturbing while walking.

The results are demonstrated in the two figures below. Overall, it seems that the situation is better in city centres than in neighbourhoods based on the answer of citizens from Szeged and Valencia.

On the other hand, by comparing the two cities we can see that the answers are more positive in case of Szeged (Figure 9): for instance if we check the answers for the statements number 1-7, we can hardly meet any disagreements in Szeged and here the maximum rate of disagreements is 3%, which is insignificant. In case of Valencia, the rate of disagreement in connection with statements number 1-7 is also low, although it is higher than in Szeged, with a maximum 9% (Figure 10). There are several outstanding phenomena in these two diagrams. To start with, statement one in case of Szeged earned 99% of agreements that means almost every citizen agrees that the city centre of Szeged is a good place to walk, from which the majority, 53% said that they strongly agree with that statement. There are more exceptional agreement rates in Szeged, with 90% or more: people are satisfied with the accessibility of local shopping, services, schools, other educational facilities and public transportation, not to

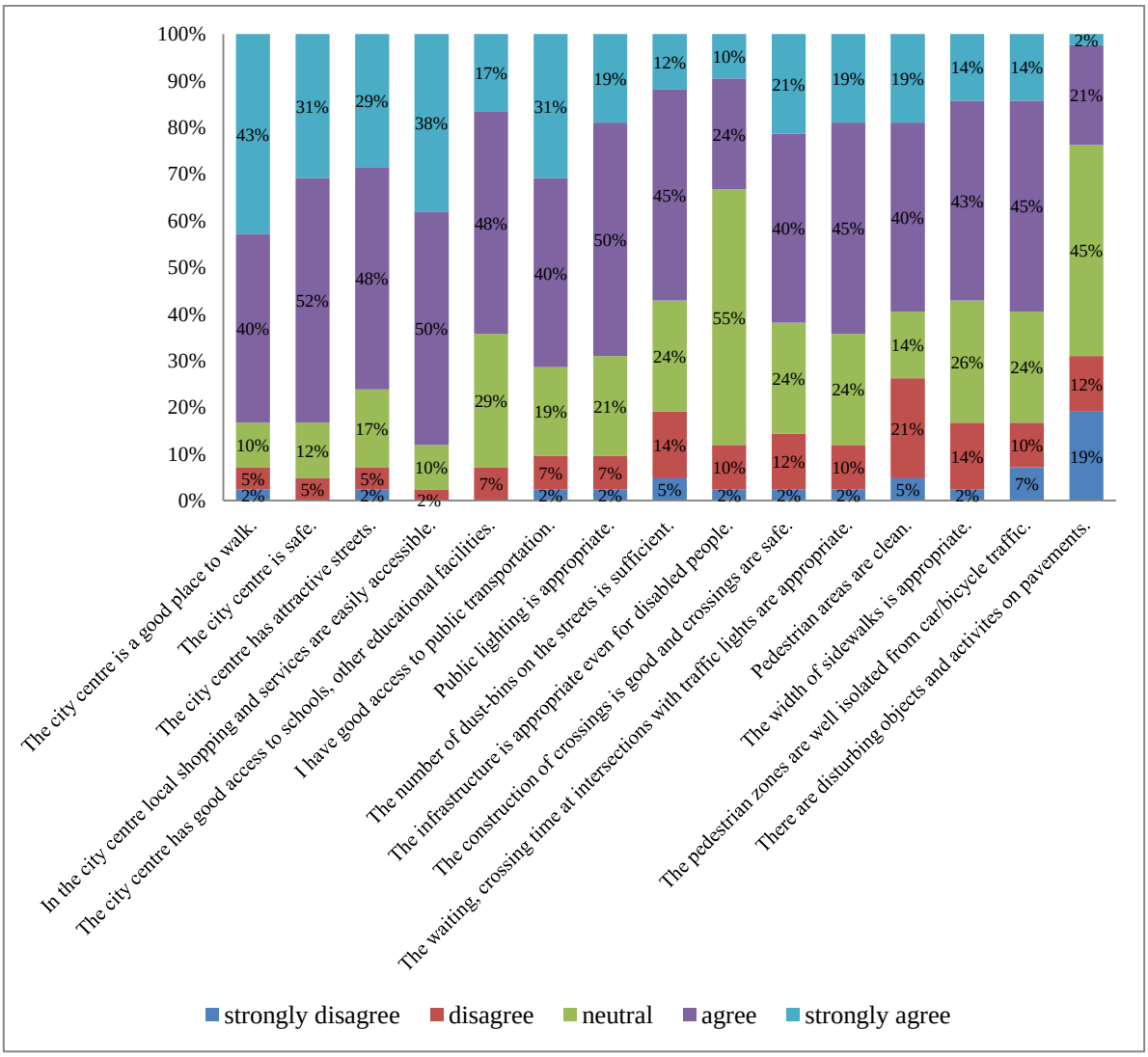
mention the public lighting. It is eye-catching that 61% of the respondents from Szeged strongly agreed with the appropriateness of public lighting in the city centre. Generally, citizens of Valencia also seem to be satisfied with the previously mentioned, however not as much as the citizens of Szeged. Just to mention a few examples, only 65% of the respondents of Valencia agreed with the good accessibility of schools and other educational facilities in the city centre, which is 25 percentage points less than in Szeged. Furthermore, a strong difference can be seen regarding public lighting in the city centres. Compared to Szeged, 26 percentage points less respondents agreed in Valencia with the appropriateness of public lighting. Problematic issues are similar in the city centre as they were in neighbourhoods. In Szeged the emphasis is on the number of dust-bins.

Figure 9 The opinion of citizens from Szeged of the city centre (%)



Source: own construction

Figure 10 The opinion of citizens from Valencia of the city centre (%)



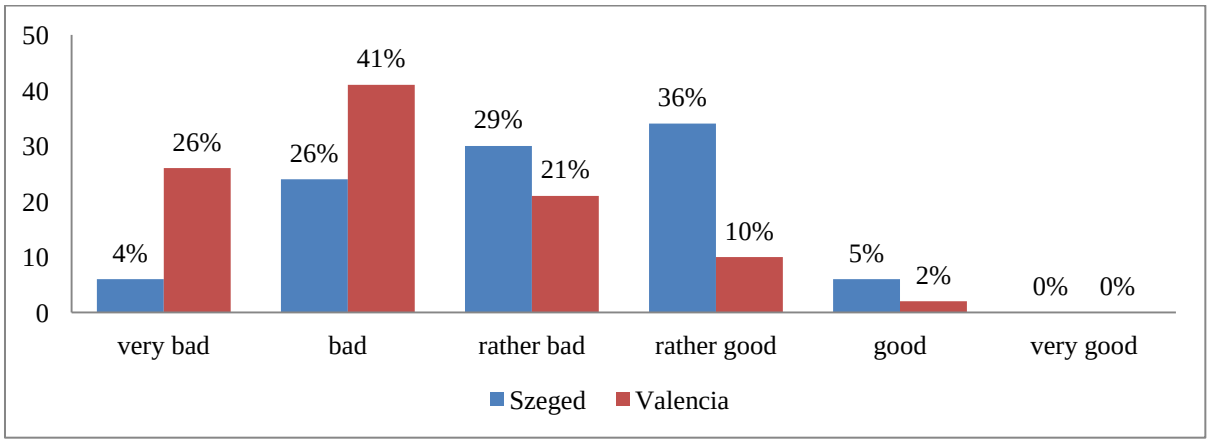
Source: own construction

The third question concerns the availability of the important establishments from people's home by walk. Without doubt, the list of the establishments is not fully comprehensive. I asked citizens about the accessibility of school, workplace, shop, bank, post office, restaurant, hospital/medical centre, stations of public transport and church. In the case of Szeged, the majority of respondents answered that except for bank and hospital/medical centre they can reach all the important institutions by walk. However, the rate of answers regarding workplace and bank was very close to each other, this means 55% yes and 45% no speaking about the accessibility of workplace and 47% yes and 53% no in case of banks. The more outstanding data are visible in case of shops and stations of public transport, where 97.7% of the respondents said that they can reach these destinations by walk. As for Valencia, the

figures are different since we cannot find any institutions where the majority of people answered no. However, the highest rate of no (26.2%) is in case of workplace. On the other hand, it seems that they are more likely to reach easily any of the listed institutions. In this city three establishments stand out with the highest accessibility: shops, hospital/medical centre and stations of public transport, all of them with 97.6%.

From question 4 to question 9 people were supposed to choose a value on a scale of 6. Question 4 asked them about their opinion, to what extent someone arriving to the city centre by car has a chance to park. The answers from the two cities show a different picture that the diagram below demonstrates. It is visible from the diagram that in neither of the cities would anyone say that the situation regarding parking places close to the city centre would be perfect. On the other hand, a strong difference can be seen in the two cities: in Szeged, the biggest percent is at rather good – 36%, while in Valencia at bad – 41% (Figure 11). It can be concluded that for drivers in Szeged parking close to the city centre is slightly easier than for drivers in Valencia, though in Szeged too, the majority of respondents – 59% - chose options very bad, bad and rather bad.

Figure 11 Parking chances close to the city centre in Szeged and in Valencia (%)

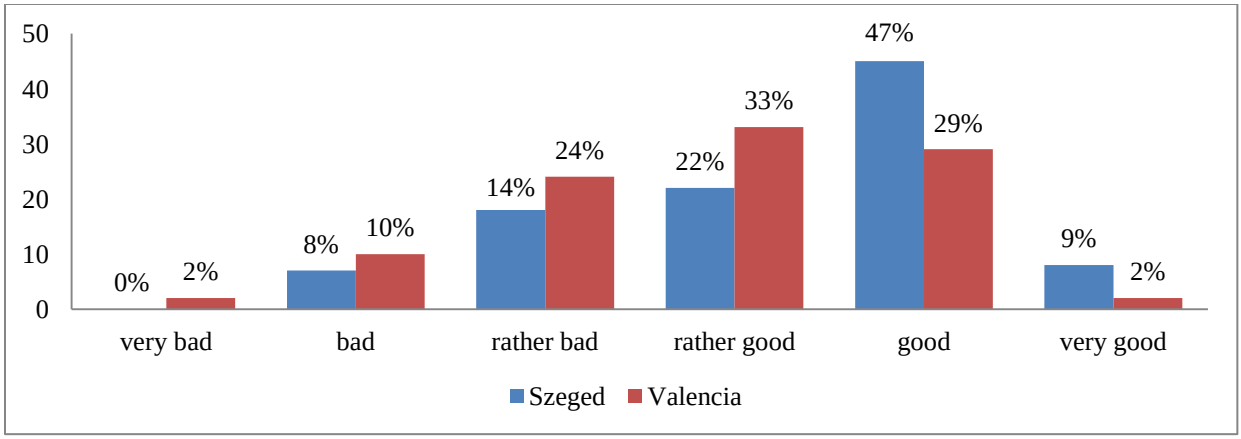


Source: own construction

This significant difference has not appeared at question 5, which is about the interconnection of suburbs and city centres. Although the biggest amount of citizens (33%) in Valencia rated their situation as rather good, in Szeged the biggest rate (47%) is at good, therefore it can be stated that suburbs are slightly better connected in Szeged than in Valencia (Figure 12). Altogether, it can be claimed that according to locals, the interconnection is quite good

because 78% of respondents from Szeged and 64% of respondents from Valencia answered rather good, good and very good to this question.

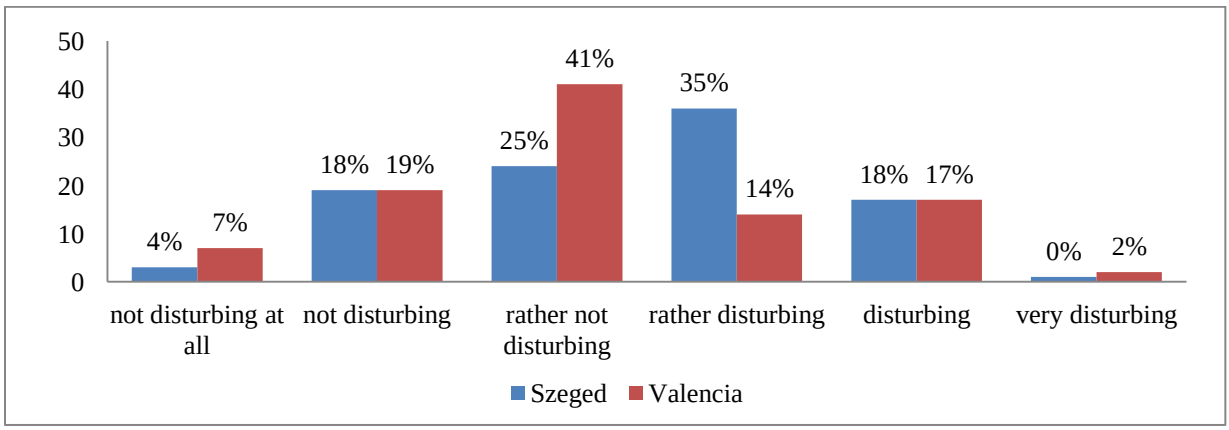
Figure 12 The interconnection of suburbs and city centres in Szeged and in Valencia (%)



Source: own construction

In the 6th question I inquired about how many parked cars and how much greenery disturb visibility. As we can see on the chart, citizens from Szeged and Valencia assess their situation differently. In Szeged slightly the bigger part of citizens, 53%, assessed the disturbance of visibility rather serious (rather disturbing and disturbing), while in Valencia 67% of locals voted for the opposite (not disturbing at all, not disturbing and rather not disturbing). However, the most "popular" categories were rather not disturbing (from Valencia 41%) and rather disturbing (from Szeged 35%) and the biggest difference between the two cities also appeared at these two categories, in case of rather not disturbing 16 percentage points, while in case of rather disturbing 21 percentage points (Figure 13).

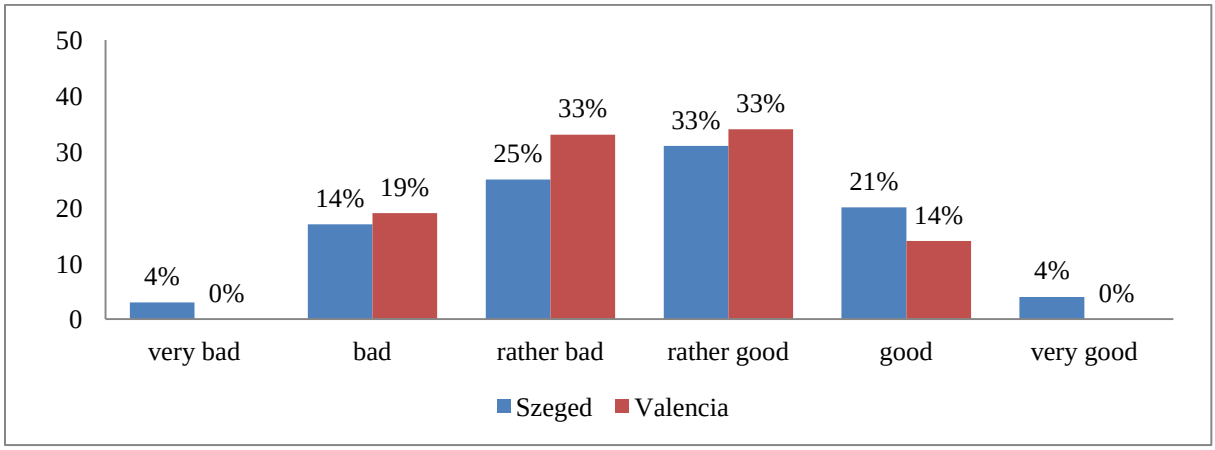
Figure 13 The amount of disturbance of visibility by parked cars and greenery (%)



Source: own construction

At question 7 people needed to answer, how they assess the respect of other participants of traffic towards pedestrians. As the chart shows, there is no significant difference regarding the opinion of locals of the two cities in connection with respect towards pedestrians (Figure 14). The assessments mostly split between bad, rather bad, rather good and good, especially between rather bad and rather good; they don not really claim that the respect from other participants of traffic is the worst possible or the best possible.

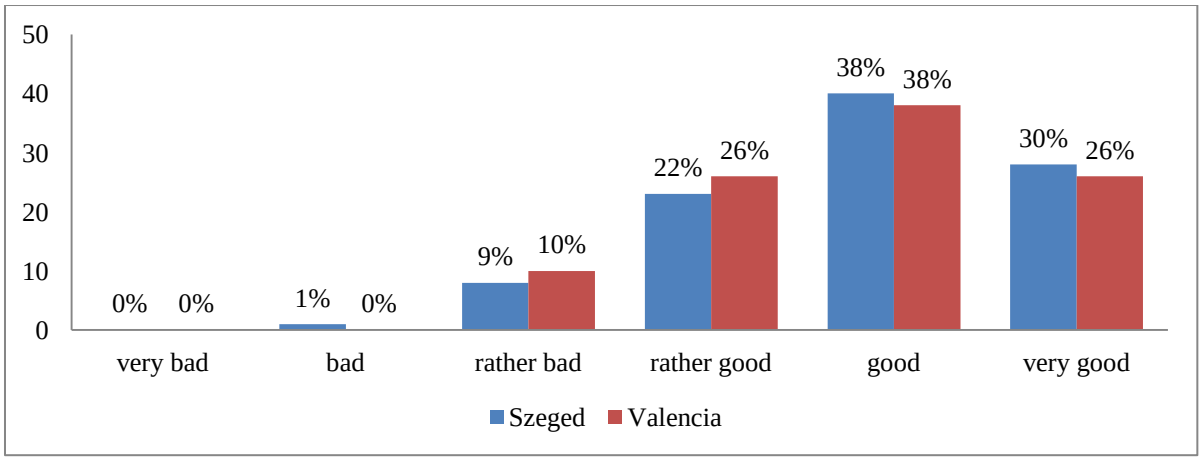
Figure 14 The assessment of respect towards pedestrians in the two cities (%)



Source: own construction

According to the assessment of citizens of the two cities, the most important tourist-attractions are approachable by walk. Hardly anyone gave points very bad or bad (Figure 15) and if we add up the percentage points of good and very good, we get 68% in case of Szeged and 64% in case of Valencia, which are outstandingly high. This can be attributable to the fact that tourist attractions are more likely to be located in city centres and city centres are more likely to be walkable.

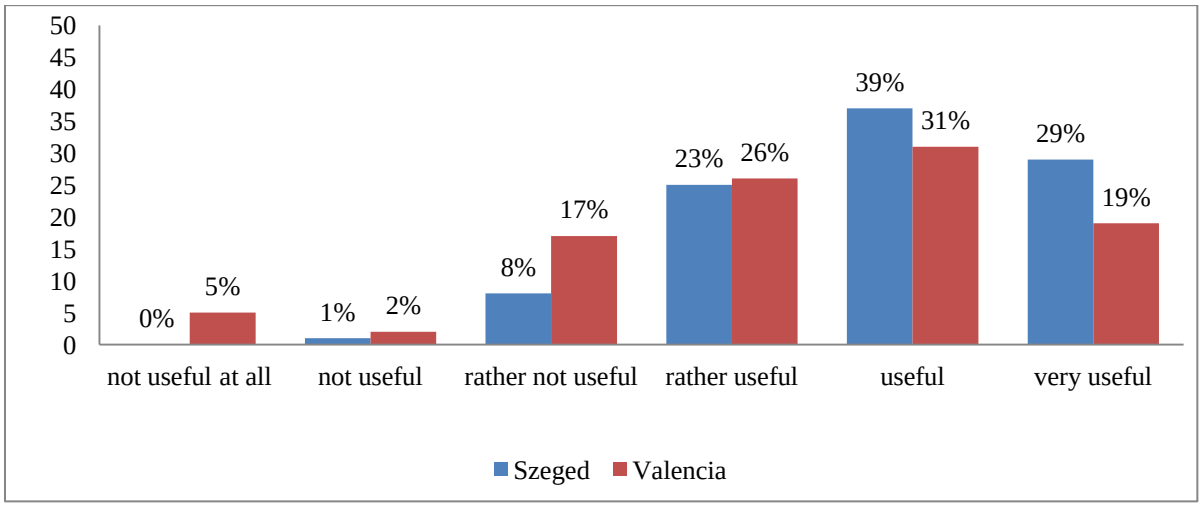
Figure 15 The approachability of the most important tourist-attractions (%)



Source: own construction

My last question in this section concerned people's opinion about the usefulness of increasing the walkability in Szeged and in Valencia. On the whole, it can be stated that locals of the two cities would appreciate if the level of walkability would be improved, which is supported by the numbers of the chart below. Altogether 91% from Szeged and 76% from Valencia answered rather useful, useful or very useful to this question (Figure 16).

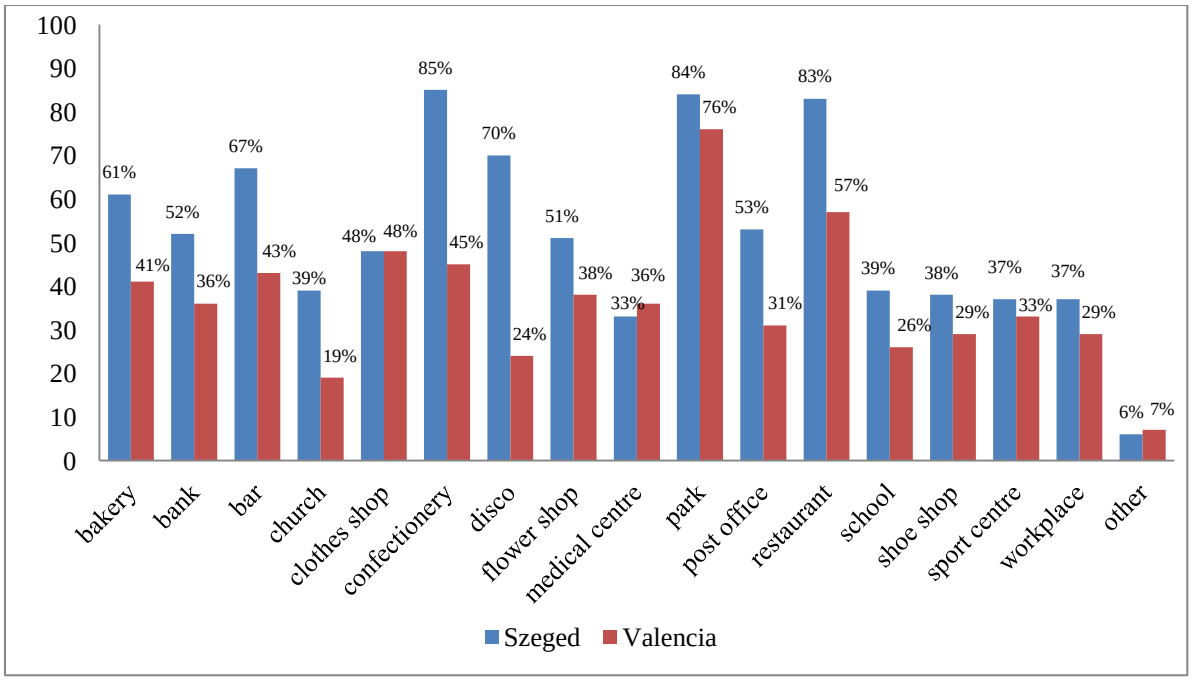
Figure 16 The assessment of the usefulness of increasing the level of walkability (%)



Source: own construction

The following diagram shows the extent to which people would like to see certain institutions in the walkable city centre. As it can be seen, people are eager to see parks, restaurants in Szeged and in Valencia too and in case of Szeged confectioneries and discos are also preferred (Figure 17).

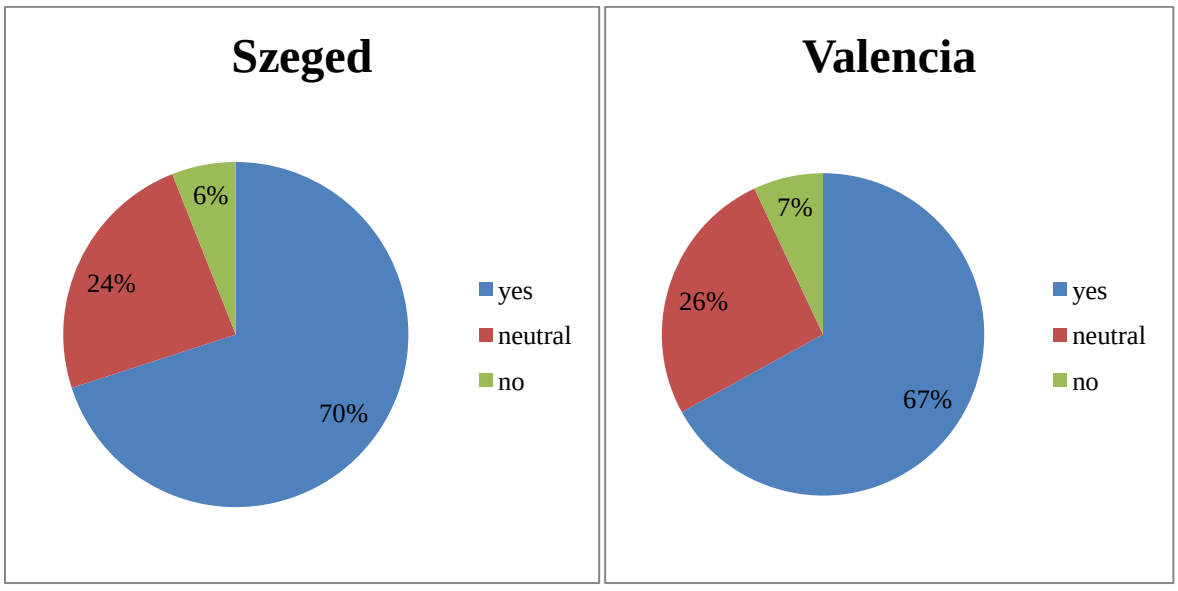
Figure 17 Desired institutions in the walkable city centres (%)



Source: own construction

As locals in Szeged and in Valencia both see it, people would more willingly walk if the circumstances would be better (Figure 18), which is supported by the big rate of answers "yes", 70% in Szeged and 67% in Valencia.

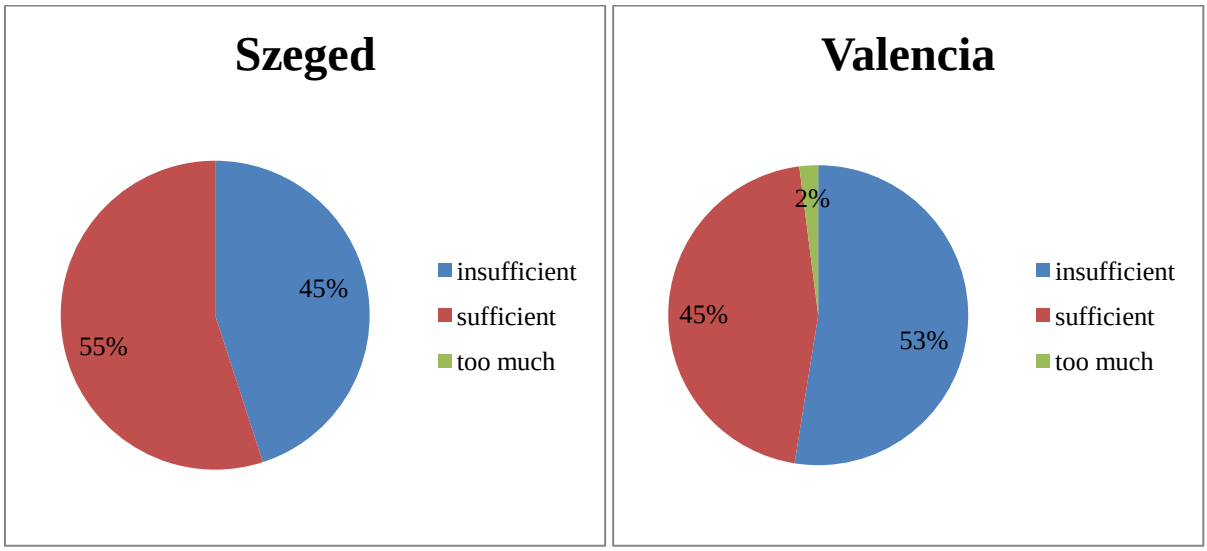
Figure 18 The impact of better circumstances on the willingness of walking (%)



Source: own construction

Citizen's opinion regarding the amount of pedestrian zones differs in the two cities. In Szeged no one said that the amount is too much, however the majority of people, that is 55%, claimed that it is sufficient (Figure 19). In Valencia 2% of the respondents argued that the amount of pedestrian zones is too much, yet 53% of them consider it insufficient.

Figure 19 The amount of pedestrian zones in Szeged and in Valencia (%)

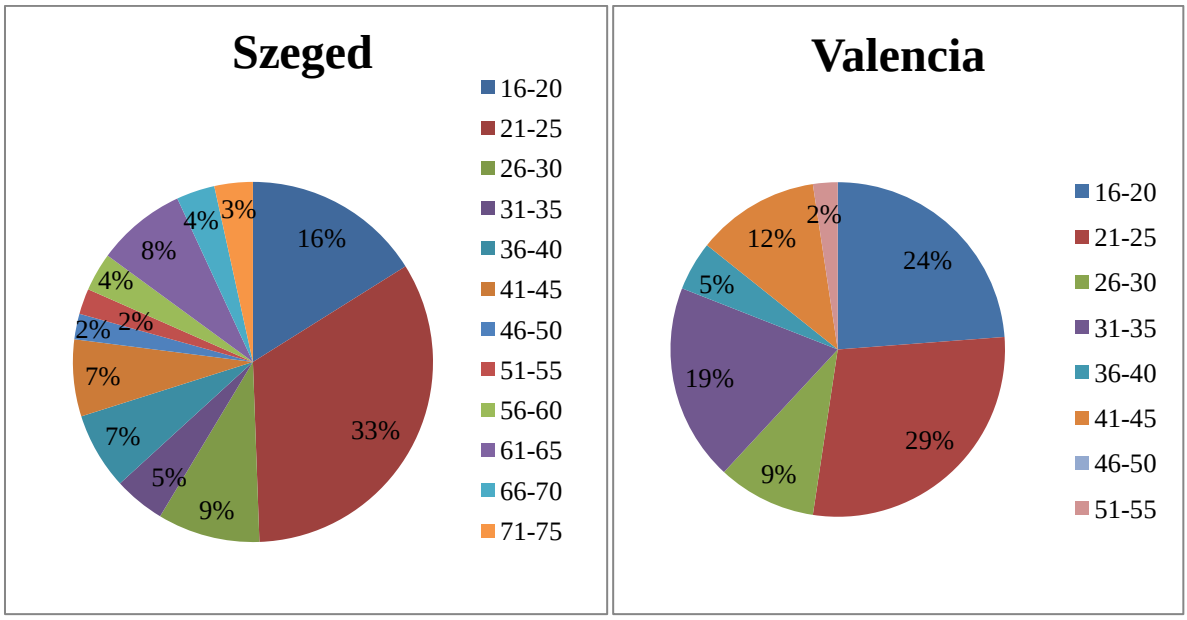


Source: own construction

There is another difference between Szeged and Valencia regarding the average number of days, people walk for any reason. It has turned out from the questionnaire that citizens of Szeged walk more than citizens of Valencia; there is more than a three quarters day difference between the averages of the two cities: 5.09 and 4.31 days. If we take into account the time citizens walk daily, it can be stated that in both cities the majority of locals, 78% in Szeged and 72% in Valencia, walk 0-2 hours a day.

The last part of the questionnaire is about statistical data: what their gender is, what their age is, which part of the city they live in and if their health is appropriate for walking. In Szeged the sex rate is 65.5% women and 34.5% men, while in Valencia 69% women and 31% men. The respondents are from different age groups yet the participation of youth is more substantial in both cities, with the rate of 49% in Szeged and 53% in Valencia from people aged 16-25 (Figure 20).

Figure 20 Distribution by age groups in the two cities (%)



Source: own construction

The respondents are from different parts of the city but in Szeged there are 5 city parts which are outstanding from the point of view of the number of respondents: Felsőváros, Újszeged, Belváros, Tarján and Rókus, which altogether means 67.8% of the whole sample from Szeged. The same can be told of Valencia, there are 5 outstanding city parts regarding the number of respondents; they are the following Algirós, Camins al Grau, Benimaclet, Afueras and Ciutat Vella, which together adds up to 59.5% of the whole sample from Valencia. Regarding their health, each respondent said that his/her health is appropriate for walking.

As a conclusion, it can be argued that overall the level of walkability in Szeged and Valencia could be improved and citizens would appreciate it. Based on the answers of respondents, the two cities share some problems regarding their layout but there are some issues which are more present in one or the other city. For instance, it seems that in Szeged everything is more centralized and the major problems occur in neighbourhoods, while in Valencia this big contrast is not noticeable. Fields of development could be improving the lighting, the infrastructure for disabled people, increasing the number of dust-bins, establishing more parks, parking places and other appealing features, just to mention a few.

3.4 The results of the questionnaire in international context

In order to ensure the international dimension, I compared the results of the first question of my questionnaire with an international survey conducted in Santa Rosa by Southworth among 59 residents[6]. In this question I was curious about what people think of their neighbourhood from different standpoints. They had five options to choose from whether they strongly disagree, disagree, neutral, agree or strongly agree in case of every statement. Since Southworth evaluated the answers in a quantified form, I need to do so, where strongly disagree equals 1, disagree 2, neutral 3, agree 4 and strongly agree 5. To get the final point I calculated the arithmetical average. I was able to compare the answers of 6 statements:

- The neighbourhood is a good place to walk.
- My neighbourhood is safe.
- My neighbourhood has attractive streets.
- In my neighbourhood I am near local shopping and services.
- My neighbourhood has good access to schools and other educational facilities.
- I have good access to public transport.

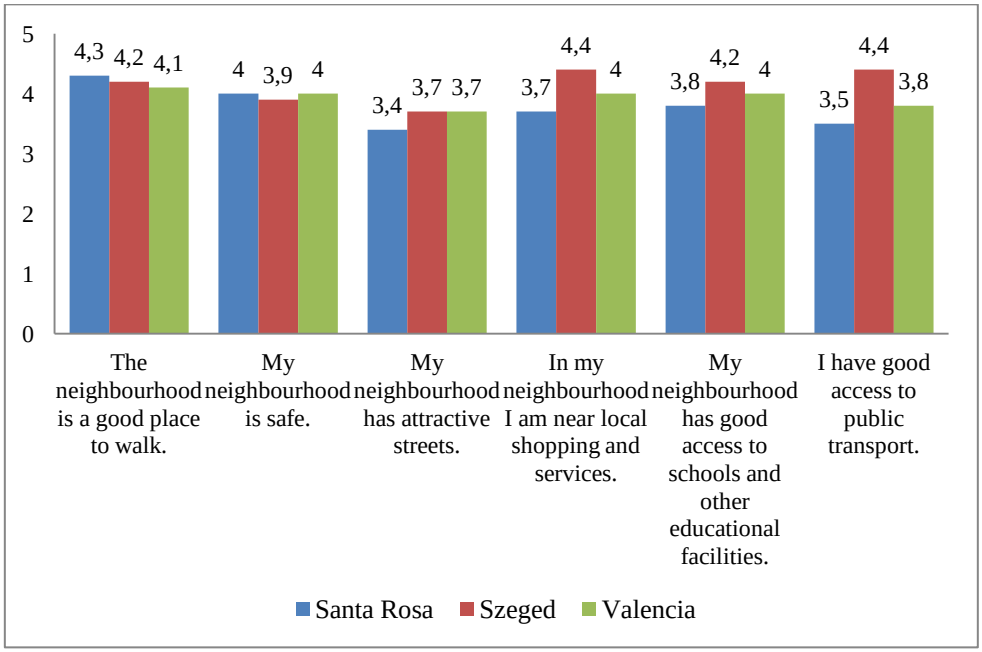
Although the term and method of walkability is more common and well-known in the USA, people from Europe evaluate their situation better in the majority of cases. In Szeged the two exceptions were how many people find their neighbourhood to be a good place to walk and how safe they find it. In Valencia, there was only one statement where the city scored less than Santa Rosa and that was how many people think their neighbourhood is a good place to walk and regarding safety they scored the same, 4 points (Figure 21). All the other statements got more points in Szeged and in Valencia than in Santa Rosa and not just slightly, significantly. Distinctions are bigger between Szeged and Santa Rosa, where the assessment of the access to public transport differs almost with 1 point in favour of Szeged, so it is very likely that Szeged has better accessibility to public transport in neighbourhoods. On the basis of the data, from this aspect the ranking of the three cities is the following:

1. Szeged

[6] I got in touch with Michael Southworth via e-mail in order to ask for his papers in connection with walkability. He sent me a questionnaire that was conducted in Santa Rosa to assess the liveability there. Since the questionnaire seemed useful for my research I asked him to send me the spreadsheets related to it and the evaluation so I can compare it with my results. Unfortunately, the final study is not available in electronic form so I was just able to use a non-final version of the study.

2. Valencia
3. Santa Rosa

Figure 21 Walkability scores of Szeged, Valencia and Santa Rosa

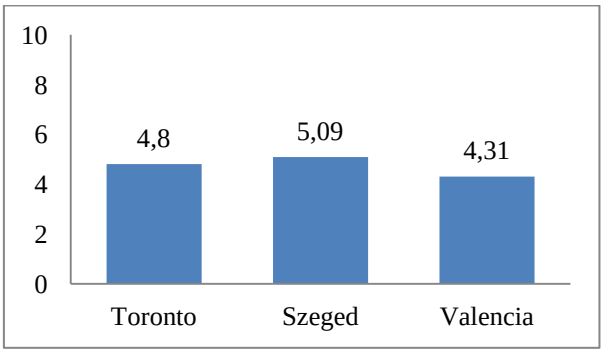


Source: own construction

I can also put the average number of days, people walk for any reason in Szeged and in Valencia into an international dimension by comparing it to the result of the study of Frank et al. (2012) that had 1,133 respondents from Toronto. Residents of Toronto walk a mean 4,8 days for any purpose which is in between of the values from Szeged -5.09 days- and Valencia -4.31 days- (Figure 22). From this viewpoint, the ranking of the three cities is the following:

1. Szeged
2. Toronto
3. Valencia

Figure 22 Average number of days, people walk for any reason in Szeged, Valencia and Toronto



Source: own construction

As a consequence, it can be stated that Szeged has better walkability than Santa Rosa and Toronto regarding the given aspects, while Valencia is more walkable than Santa Rosa and less walkable than Toronto.

3.5 In-depth interviews

In this part of my study I present the results of the in-depth interviews I conducted in Szeged and in Valencia in order to understand the nature of walkability more profoundly in the two cities. I wished to reach this purpose by exploiting the opportunities of the open-ended questions in the course of the interviews, so the limitation of the closed-ended questions in the questionnaire terminates contrary to loosing the possibility to summarize and quantify the data easily - that are the benefits of the questionnaire. The framework of the interviews is based on the methodologies I demonstrated in chapter 2 and also on my observation and the questionnaires. As a result, the two investigations complete each other synergistically, and they are correctly interpretable together. In the course of the in-depth interviews, such correspondences can be revealed that are not possible in the closed framework of the questionnaire. I made an attempt to accomplish this with two target groups:

- local stakeholders and
- local policy makers.

I am going to demonstrate the results of interviews with local stakeholders first and thereafter the interviews with local policy makers.

3.5.1 Interviews with local stakeholders

In this part as I mentioned previously, I demonstrate and compare the results of the interviews with 4-4 local stakeholders in both cities who are more concerned in the subject of walkability than an average citizen. This means that for example they are either eager to live a healthy life and walk extremely much, or engaged in the protection of the environment with being a part of a civil organisation, or a university professor who has direct influence on the generations of the future, or a colleague from the governmental public road operator company of Szeged. I conducted the interview with them individually and the average timeframe of the interviews were about 25 minutes.

The first question I asked them was if they have ever heard about walkability. Without one exception everyone answered no, so it is very well visible that the method of walkability has not reached this area on the level of locals. The reason, why the only exception has already heard about the term, is the fact that he lived in the USA for a period of time, where walkability is more commonly known as it was demonstrated through the examples of the presentation of the specialized literature. Before moving forward, I gave them a short description of the subject in order to make them get familiar with the term.

The second question was about the approachability of some important institutions by walk. In both cities all the interviewees said that they can reach the majority of important establishments, such as school, workplace, church, bank, post office, restaurant, public transport stations, easily. A respondent in Valencia highlighted that "*in Valencia everything is within walking distance and you can go from one place to another on foot*", while another mentioned that "*all of the establishments are quite accessible because there is quite a few of the things that you mentioned*" and a third added that "*Valencia is flat so it is very comfortable to walk.*" A person from Szeged claimed that "*as we are talking about a big city, the suburbs are better accessible by public transport*." A respondent from Szeged also added that she cannot reach the hospital/ medical centre by walk and this issue turned out from the questionnaire as well.

In the third question I inquired about the condition of walking paths. More or less the respondents from the two cities answered the same by saying that more attention is paid to centric areas regarding quality and cleanness. However, some from Szeged said that pavements are dirtier in the centre because of the nightlife and the regular events, like wine

festival, when more people are staying in the centre. A colleague from the county centre of Magyar Közút Nonprofit Zrt. stated that "*The condition of walking paths is different depending on the neighbourhood. In case of highlighted projects, the pavement has good quality and the city pays attention to the improvement of sidewalks within the confines of wall-to-wall investments. The problem is located in areas that have not been improved yet or the improvement was not qualitatively successful*." In Valencia cockroaches in summer mean a problem because they are overpopulated and people do not care about collection of the droppings of their animals on pavements that significantly influence the cleanness of sidewalks.

In the fourth question I was curious about the amount of amenities that attract people to walk, for instance benches, public lighting or public toilets, trees, green areas. An issue that Szeged and Valencia has in common is the lack of public toilets, although according to a citizen from Szeged during city events some extra mobile toilets are available. From the point of view of positive features of the city, every citizen from Valencia emphasized the existence of Río Turia, a former river which ran across the city but has been transformed into a park after a big flood and now serves as a place to relax, have a picnic or do sports, there are plenty of trees, sport facilities, different activities taking place there, one of them claimed that "*I do believe that Río Turia is highly attractive for people living here and also for tourists*." Furthermore, a citizen added that "*Valencia is a really nice city to be outdoors, it really invites you to be outdoors because there is always nature everywhere*." Moreover, they agreed on having a lot of places to sit down, whether be in a little square, park or anywhere. The interviews in Szeged supported the result of the questionnaire that there are not any dust-bins in the city. Another significant issue that every interviewee evaluated as a problem is the lack of benches or the bad condition of them thanks to homeless people. People also expressed their satisfaction with the amount of green areas in the centre of Szeged; one of them told me that "*the seasonal flowers make the centre lovely*." According to the citizens of Valencia, the city is well lit, while the citizens of Szeged complained about the lack of proper lighting in neighbourhoods.

Regarding safety, generally there is not any problem in the two cities. However, people have some complaints, for example in Valencia people find it disturbing when cars have access even to narrow streets in the city centre where no one would expect them. Another issue to mention could be that locals in Spain do not really respect zebra crossings. Despite of the previously mentioned, Valencia is said to be safe because "*there are a lot of people in the*

streets, during the night as well because Spanish people live during the night." In Szeged people tend to feel unsafe because of the inappropriate lighting in the neighbourhoods. More of the interviewees also mentioned the nights of bigger festivals when there is a bigger chance of robberies. One other field of improvement could be the better organisation of the separation from cyclists. Separation from cars is perfect but in many cases cyclists and pedestrians have to share the same path, which can be very dangerous.

Generally locals in Valencia think that they have too many crossings even if not everyone of them is reasonable. Furthermore, as one respondent said *"if you follow all the rules, you need to wait a lot",* therefore "*Spanish people usually do not cross during the greens light; they cross during the red light."* Some of them suggested improvements, for example a timer at crossings or the button that people can push indicating that they are waiting so they will get access to cross the road earlier. In Szeged, people in general find the crossings safe and well-marked which can be a result of the strict requirements. Their main problem is the transport culture because drivers tend to be disrespectful with pedestrians.

In the next question interviewees were asked about the possibly disturbing objects and activities in pavements, such as obstructions, fire-hydrants, columns, etc. According to citizens from Szeged, usually obstructions mean the biggest inconvenience. However, an expert in this subject said *"in order to construct or reconstruct something, sometimes we need to destroy and obstruct."* Moreover, one respondent added that the condition of the sidewalks on the Bertalan Bridge is not appropriate, there is not any separation from cars and there are metal pole that disturb walking. On the basis of the answers from citizens of Valencia, they have the same issue, e.g. obstructions *"maybe because of the new local government, there have been plenty of changes in terms of distribution of the streets, the directions and also for pedestrians and cars."* Furthermore, another citizen mentioned that *"the meter tall metal poles on the corners can be disturbing where there are a lot of people."*

In case of disability infrastructure, there is a difference between Szeged and Valencia, based on the answers of the interviewees. People from Szeged claim that *"more attention is paid to this issue in the city centre but I do not consider Szeged as a city that devotes particular attention to make the city friendlier for disabled people."* They also told me their opinion about crossings with sound signal and tactile paving that help blind people to orientate. As they see it, tactile paving exist but sadly in bad condition, *"the majority of tactile paving is in such bad condition that even unblind cannot see them."* Crossings with sound signal are also

something that needs to be improved. There are two possible scenarios either the signals cannot be heard because of heavy traffic or they are so loud that nearby dwellers are irritated. In order to tackle the issue, "*the Magyar Közút Nonprofi Zrt. and the city of Szeged constructed an intersection where the blind and the partially sighted can enter the system with a sensor when they are at the crossings so sound signals will only be issued if someone need it.*" Luckily, in Valencia the circumstances are better, as a citizen phrased "*Valencia is a very friendly city for disabled people"* and another added that "*Valencia, and in general Spain, have paid particular attention to suit people in need.*" Usually, tactile pavements can be found in neighbourhoods too but there is a lack of sound signals. Another positive side of Valencia is that it is flat and the streets are wide enough, so people in wheelchairs will not have any problems.

After the discussion of the situation of walkability in Szeged and Valencia, when interviewees got familiar with the subject, I asked them about their opinion, what makes a neighbourhood walkable. As a summary, I made a table about the thoughts of the citizens in Szeged and Valencia, which demonstrates the different priorities (Table 2).

Table 2 Factors that make a neighbourhood walkable

The opinion of citizens in Szeged	**The opinion of citizens in Valencia**
the existence of parks and benches	friendly vibe thanks to benches and trees nearby
cleanness	cleanness
safety- public lighting, because where it is appropriate there is a higher amount of pedestrian traffic	safety – signs and good lights
good separation of pedestrian traffic from other means of transport	balance between the different participants of traffic and clear limit between the lanes of them
the good layout of roads, pavements and crossings	wide sidewalks because it gives access for a large amount of people to walk relatively easily
the closeness of nature – trees which make the air cleaner and provide shadow	visibility
nice environment	accessibility

Source: own construction

I also asked them about what specific improvements would they do in their cities. It is obvious that the citizens of Szeged and Valencia would improve different matters. Dwellers of Szeged put the emphasis on green areas. A member of a civil organisation for protecting the environment mentioned an opportunity: *"Green wall and the green balcony network is an opportunity for cities that the government should apply for by the European Union, as part of the Life programme. On the course of this programme, free plants are provided for dwellers to their balcony or to the wall of their own gardens to increase the greenery in the city which lower the level of CO and increase the O emission.*" They would also improve the public lighting in neighbourhoods, place out more dust bins and benches and improve the infrastructure to suit for the disabled. *"The city has started to head in a good direction regarding improvements but more sources need to be involved."* In Valencia, the new government has carried out some improvements already and it seems that citizens are not 100% satisfied. In connection to it a citizen said "*they decided something which could be advantageous and comfortable for the city but at the same time there are many people, many businesses that are complaining about those decisions.*" Some other ideas are to put timers at crossings, and with agreement to clean more.

The last couple of questions were about statistical facts such as their age, their medical status, the reason why they walk, how frequent they walk and how much they walk. The average age of the interviewees from Szeged is 26.75 and from Valencia 29.25. All of them have good medical condition that is appropriate for walking. The general reasons why citizens walk are either they enjoy outdoors or want to get to specific places. While all the 4 respondents I asked in Valencia answered that they walk every day for any kind of reason, the same cannot be stated of respondents from Szeged, there 2 respondents said they walk daily and 2 of them only walk on weekdays. On the other hand, it turned out that despite locals in Valencia walk more frequently, they only walk an average 70 minutes daily and this value in case of citizens of Szeged is 110 minutes.

3.5.2 Interviews with local policy makers

In this part I am demonstrating and comparing the results of the two interviews I conducted with one-one member of the local government in Szeged and in Valencia. The aim of these interviews were to have a better understanding what happens in the cities, what improvement can we expect and which measures are lacking. The interviews contained 13 open-ended questions and took about 40 minutes each.

In spite of the fact that in Szeged, the term walkability was not known, the city has dealt with it without calling it so. In Valencia, my interviewee was familiar with the term and said that they have also dedicated attention to this issue. With both interviewees the SUMP, Sustainable Urban Mobility Plan, came up and it is clear that this is part of the mobility concept of Szeged and Valencia, too. According to my interviewee from Szeged, "*the Transport Concept of the city from 2007 was already forward-looking since the preference of sustainable transport modes was one of its aims, which means that the transport pyramid contains the following from the bottom to the top: individual motorized transport, public transport, cycling and walking.*" It was highlighted that the sustainable mobility and the transport modes accompanying are usually handled together and walkability cannot really be separated. When I asked them about the reasons why they started to deal with the sustainable mobility, especially walkability, they gave me different answers. In Szeged: *"there is a complex reason: partially there is a need to deal with it, partially there is a given situation, partially there are local issues and probably the most important is that we have a truly committed deputy mayor*." In Valencia: "*first of all, the Kyoto Protocol Plan and besides the SUMP guide from the European Union called Planning for People.*"

It was mentioned in both cities that the European Union ensures them resources. Since emphasis is put on social legitimacy, citizens of Szeged and Valencia are involved in the decision-making process. "*In the new Mobility Plan there will be different work-groups, such as an inner managerial directional group, a wider transport professional group, civil group, etc.",* as it was said in Szeged. *"In Valencia there is a public participation process, called Open Mobility Table, where different sectors, different collectives that are related to the city, from neighbourhoods, public transport, private transport or handicapped people can meet with politician at the regular meetings."*

The timing of the concept of the two cities is different because the government of Szeged is developing the concept of SUMP right now; they just started the planning period a few weeks ago. However, as mentioned before the Transport Concept of 2007 was forward-looking, therefore there will not be any paradigm shift; socialization will rather mean a change and some activities overarch periods. There are several projects taking place now, too, but not the one of SUMP. On the other hand, Valencia is already in the period of realization: they are working on redesigning the public transport lines in order to connect the different parts of the city even which are almost outside of Valencia and there are also measures in the city centre, near the Central Market, where they are trying to close or at least limit the access of cars to

the centre, and changing the directions of certain streets. During the realization usually not everything is smooth, neither in Valencia. The main issue with citizens occurred when closing the traffic out from the neighbourhood of the Central Market. Businessmen were worried about the load and unload of their goods and also about the possible decrease in the number of purchasers. Day by day the situation is getting better, businessmen got better feedback than they expected and vehicles for loading goods also got permission to complete their duty. Speaking about problems during the realization period, in Szeged the interviewee told me that those colleagues who are responsible for the projects are project managers and have to know everything about the complex projects, other problematic factors are the deadline of applications, the call for applications are not always straightforward and there are many modifications of requirements during the application period.

From the budgetary aspect, development of walkability is a complex issue and the costs cannot be defined strictly. Furthermore, as the interviewee from Szeged emphasized *"The sustainable modes of transport cannot be contrasted. Here, practically the individual motorized transport and all the other type are against each other."* First of all, it is hard to deal with the different sustainable modes of transport one by one and the costs that can be measured are not the only costs. In case of Valencia it is also claimed that direct and indirect costs need to be separated. Since a year ago there was a change in the management of the city of Valencia, now they do not have a huge budget allocation for the mobility so low tech and cheap measures are being done that I elaborated in the previous paragraph.

The interviewees from Szeged and Valencia strongly agreed on recommending walkability for other cities. As the government of Szeged is part of the initiative called CIVITAS which was started by the European Commission in order to ensure the relation between cities of Europe concerned about the issues of urban transport, they clearly promote walkability. The interviewee from Valencia said that *"I strongly believe that walkability, cycling and public transport should be the ABC of every mobility policy."*

Concerning the advantages and disadvantages of walkability, the interviewees highlighted different factors. "*When we are trying to promote the use of a certain transport mode, there could be a tendency negatively influencing one another because we can only distribute the already existing surface among the modes of transport*", said the interviewee from Szeged. Moreover he also added that "*only those should use sustainable transport modes that are able to use them",* for example we cannot expect a painter to cycle through the city with all his

instruments because it is impossible. He mentioned health as a medical advantage of walkability: someone who works in an office is likely to need 20-30 minutes of physical exercise during the day that walking can solve. The interviewee from Valencia focused on the importance of the historical city centre: *"The historical city centre was built centuries ago and not designed for heavy traffic; therefore we have to redesign it to be able to maintain its beauty. People also would be able to enjoy the sightseeing attractions without cars that disturb them."* He also said that with the limitation of traffic children can play in safer circumstances.

3.6 Conclusion of the survey

By comparing the results of the observation, questionnaires, the interviews with local stakeholders and the interviews with local policy makers in Szeged and Valencia we can find numerous similarities and differences among the opinion of respondents in both cities. Without being comprehensive, I would like to demonstrate some of the most outstanding examples.

First of all, the participant observation in Szeged and Valencia gave a strong base to the other parts of my empirical research. Thanks to the observation, I was able to determine the key factors that have to be taken into consideration when investigating the level of walkability in Szeged and in Valencia.

According to the in-depth interviews with local policy makers, the term walkability is known and used in Valencia in the local government; however in Szeged it is not called so. Based on the interviews with local stakeholders, neither of the citizens of Szeged and Valencia was familiar with the term, except for one respondent who has lived in the USA for a while. Both local governments are working on the promotion of sustainable urban mobility modes, including walkability and it can be seen in the answers of the local stakeholders and citizens too, who mostly find the neighbourhoods and the city centres a good place to walk. The in-depth interviews also supported the results of the questionnaire in connection with the accessibility of some important institutions. As it turned out, in Valencia everything is within walking distance and Szeged has also good accessibility, however there, there are some deficiencies in case of the accessibility of banks and hospitals/ medical centres.

Regarding cleanness and condition of sidewalks, more attention is paid to the city centres in both cities based on the answers of the questionnaire and in-depth interviews, too. Without

doubt, the lack of dust-bins in Szeged is a significant issue. Comparing the answers of the questionnaire and the in-depth interviews, crossing are found to be more safe and better laid out in Szeged than in Valencia. There is an interesting difference between the assessments of the disability infrastructure in case of Valencia, because the respondents of the questionnaire did not agree on the appropriateness of the disability infrastructure while all the interviewees declared that the city take into account the disabled people when making the layout of Valencia. Speaking about amenities, such as benches or lighting, the subjects of the interviews expressed their concerns about the lack of benches in the entire city of Szeged and appropriate lighting in the neighbourhoods; the same cannot be stated on the basis of the questionnaires. More or less, people find their city a safe place to live both in Szeged and Valencia, which is supported by the answers of both the questionnaire and the in-depth interviews.

The channels that are better comparable thanks to the similarity of questions are the questionnaire and the in-depth interviews with local stakeholders. In general, bigger differences between the two cities can be seen on the basis of the in-depth interviews probably because of the fact that they could elaborate their thoughts and be more specific in the course of this method. On the whole, both Szeged and Valencia still have room for improvement, however taking some of the most important factors into account, it seems that the level of walkability is better in Valencia right now. There are several aspects, in which the two cities do not differ but in case of the accessibility of hospital/ medical centre, disability infrastructure, safety and attractiveness of streets, Valencia proved to be better (Table 2).

All in all, we can see that both cities are trying to improve the use of sustainable transport modes, including walkability. Although they are approaching the situation differently, both of them agree on the fact that walkability is something that is worth recommending and it has plenty of positive effects on the city and its dwellers. In the following chapter I am going to suggest some solutions to increase the level of walkability in Szeged and in Valencia.

Table 3 Comparison of the walkability of the two cities on the basis of the different survey channels

	Questionnaires	**In-depth interviews with local stakeholders**
Accessibility of shops and services	insignificant difference	insignificant difference
Accessibility of public transport	Szeged	insignificant difference
Accessibility of hospital/ medical centre	Valencia	Valencia
Crossings	insignificant difference	Szeged
Disability infrastructure	insignificant difference	Valencia
Safety	insignificant difference	Valencia
Attractiveness of street	Szeged	Valencia
Cleanness	insignificant difference	insignificant difference

Source: own construction

Remark: in the inner cells of the table the more walkable city is indicated from the point of view of the given aspect.

4. Suggestions to reach the economic benefits with city development tools

In the first three chapters we got familiar with the subject of walkability through the demonstration of the challenges behind it, its concept, advantages with the help of the specialized literature and we also got an insight into the practical aspect of the term and the methodologies that we can use to quantify the level of walkability of a given neighbourhood or the city. Last but not least, in the third chapter the steps and the results of my own research were presented through a comparison of Szeged and Valencia. Here in the forth chapter I would like to suggest some possible solutions to increase the level of walkability of the two cities.

The actions – mentioned below - could be part of the innovative city development toolbars of Szeged and Valencia. Here, I feel the urge to clarify the concept of regional and local economic development. As Lengyel (2010) states, regional economic development is a highlighted field of the regional science; it is the improvement of the regions' competitive edges and the research of the connected theoretical and practical questions. On the basis of Bajmócy (2011), local economic development is conscious intervention into local economic processes. Since the engines of development are cities, the network of cities had to be developed and their competitive edges have to be improved (Filep 2014). From the point of view of city development, walkability could be very useful since it has **numerous positive effects on the economy**. First of all, walkability could boost the turnover of local retailers because the number of impulse purchases could grow if people walked more in the area where they are located. Moreover, the quality of labour force could also increase because if people walked more, they could become healthier and would be less likely to go on sick payment. Other factors that could contribute to the better health of citizens are better environmental circumstances, such as lower level of contamination, congestion, noise and air pollution. If the city would be more walkable, it would also attract educated and skilled people who could be the key drivers of the economy.

4.1 General solutions to the issue

Taking everything into consideration, it is clear that the level of walkability in both cities should be improved. As it can be seen in the second section of my study, there are numerous

ways to assess the level of walkability and to give advice how it can be developed. In this section of my paper I would like to give some general recommendations how it is feasible to improve in the field of walkability.

On the basis of MARC (1998), sadly, in the planning, design and development of our communities walking has received little or no attention at all. This paper suggests that the conditions of walking could be improved with exploiting the opportunities: land use planning, zoning, subdivision, site-plan review, and street and highway design. According to this article, the Campaign to Make America Walkable has developed a list of statements in connection with what you generally expect in a walkable community. The list contains the following aspects:

- Cars are not needed every time when people would like to take a trip, the community is easily accessible by walking for people of all ages and abilities.
- Children being outside in their neighbourhood are not in danger because of motor vehicles.
- Streets and highways provide safe and comfortable facilities for pedestrians and crossings do not mean a threat.
- The speed of motor vehicles is reduced or they are eliminated entirely in some areas to ensure the compatibility with pedestrian traffic. Pedestrians are given priority.
- The air quality is good.
- Drivers of motor vehicles behave responsible since they know that they can be held accountable for any threat, injury or death which they caused by the lack of care or ignoring the vehicle code.

With the previous list in mind, we can state that when building the overall town layout, the focus should be on people and not on cars; and walking can be promoted with little changes, too (Eidmann et al. 2011):

- speed control on key streets to ensure pedestrian safety,
- ubiquitous sidewalks in good condition,
- well-marked and easily accessible crosswalks,
- aesthetically pleasing, useful and enjoyable streets,
- well-linked and interconnected streets, trails and paths, and

- the sense of safety for the whole community.

There are several other aspects which make walking enjoyable, they are the following: fine-grained and well-connected pedestrian routes with visual interest, cohesive streetscapes, and sensitivity to the landscape, interesting streets and pedestrian ways (Southworth 1997). Taking this into account, there are many ways to improve walkability including the improvement of the street network connections for walking, designing new Greenfield developments, focussing urban densification and development around public transport hubs and retrofitting sprawling neighbourhoods, with medium to high density developments with active street frontages (CM 2009) or developing sidewalk quality, signage, crosswalks, interconnection of different parts of the city and adding curb cuts (Eidmann et al. 2011).

To be able to revitalize the currently not very walkable areas of a city, collaboration by the public and private sector is essential, states TPH (2012). This means that new neighbourhoods have to be designed to be walkable and the already existing but not yet walkable neighbourhoods have to be redesigned by adding more walkable features. Additionally, old neighbourhoods can also be transformed into a pedestrian-friendly neighbourhood with shops and services. A walkable place can be achieved by working together on planning and implementation with the community (Eidmann et al. 2011). On the basis of TPH (2012) both the public and private sector can contribute to make a city walkable:

1. The role of governments is to establish policies, capital programs, plans that support the development of walkable neighbourhoods. Obviously, the ministry of transportation is more concerned in this subject: walkable, complete communities can be achieved only when the transportation systems are coordinated with land use planning. Investments in infrastructure can create long-lasting benefits in communities that are eager to create more walkable, pedestrian-friendlier public spaces.
2. Cities can also be involved in the action; they can create policies, programs and initiatives to undertake design work and investments in transportation improvements.
3. There are things that residents can do to make their neighbourhood walkable:
    - Support increased residential and commercial density.
    - Ensure the viability of local shops and services by taking your business there.

- Buy fresh and healthy foods at small food shops and restaurants at your neighbourhood.
- Encourage and support the development of sidewalks.
- Demand better designed streetscapes.
- Support lower speed limits and innovative street designs, they will make your streets safer.
- Plant trees in your front yard in order to make your neighbourhood more appealing, provide shade and cooling in the summer.

According to the article of Benfield (2012), which is about the book - Jeff Speck: Walkable city; he even framed a list with which we can create walkable cities:

1. *Put cars in their place.* America has a car-first approach and it has hurt its cities because increased roadway traffic capacity lead to more cars on the road that traffic engineers have failed to acknowledge. This growing demand has lead to unanticipated consequences for traffic on freeways and in neighbourhoods as well, where the streets are treated as conveyances for motor vehicles and not as critical public spaces for animating city life. The author supports congestion pricing.
2. *Mix the uses.* His paper shows that there is more walking in neighbourhoods with a diversity of uses, i.e. places to walk to. He says that in American downtowns there is a lack of housing – places to walk from.
3. *Get the parking right.* Jeff Speck point out that there is an oversupply of underpriced parking thank to the minimum parking requirements for buildings and businesses. The recommendation of the author is consolidated parking for multiple buildings and business and higher prices.
4. *Let transit work.* Walkability benefits from good transit and this situation has two sides, as good transit relies on walkability. He mentions examples what not to do to support transit: too much downtown parking, routes separated from the busiest area, insufficient residential densities, infrequent service and a lack of mixed-use, walkable neighbourhoods near the stops. His advice is to improve transit corridors.
5. *Protect the pedestrian.* Instead of improving roadways and facilitating car traffic with wider lanes and one-way streets, we should use narrow lanes and two-way streets that do not encourage higher speeds. He supports the idea of on-street curb side parking as it ensures safety for pedestrians from moving vehicles.

6. *Welcome bikes.* It is connected to walkability in the sense that bike traffic slows down car traffic.
7. *Shape the spaces.* At this point, the author recommends getting the urban design right, consequently people will walk, no matter what the weather is like. The sense of enclosure is essential while walking.
8. *Plant trees.* However many public transportation agencies try the limit the number of trees on the streets because they believe they interfere with visibility, trees provide numerous public benefits, such as natural cooling, reduce emissions and energy demand for air conditioning, storm water pollution, and contribute to auto safety.
9. *Make friendly and unique (building) faces.* Besides feeling safe and comfortable during the walk, the entertainment is also important. Street-level windows of stores and businesses, vertical building lines, architectural details and lined parking help to complete this requirement.
10. *Pick your winners.* The author argues for concentrating on one issue at once. His advice is focusing on downtowns and short corridors that connect walkable neighbourhoods.

As a summary, it can be stated that there are plenty of methods to make a neighbourhood or a city more walkable and these measures do not necessarily mean spending a lot of money. For the more effective implementation public and private sector need to collaborate. Cities usually prepare a plan if they would like to dedicate their attention to the improvement of walkability, these plans are called walkability plans and I am going to introduce them in the next part.

4.2 Walkability Plans

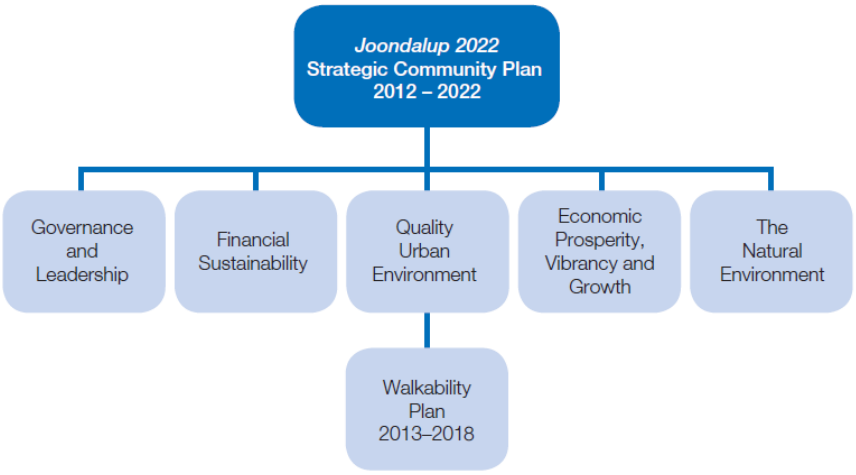
Walkability plan is a tool that helps a city in improving its level of walkability. Usually cities ask experts to gather all the necessary information to construct a plan like this. These plans often include a survey of the present circumstances in the city, demonstrating the walkability elements and their evaluations. On the basis of the survey, recommendations, action plans and objectives are defined. For the better understanding I will present it in details through an example.

To start with, here is the example of the Walkability Plan 2013-2018 of the City of Joondalup. According to this plan, which is designed for a five-year-long period, it was created in order to encourage and enable safe and accessible environment for everyone within the city. It is

based on a detailed audit and presents its analysis, results and recommendations. This plan especially focuses on five major, so-called Key Walking Areas. There are numerous internal and external plans and strategies in relation with the Walkability Plan of Joondalup. The following figure is about the internal planning context of the city. It is visible that the Walkability Plan 2013-2018 is part of the Joondalup 2022 Strategic Community Plan 2012-2022 in connection with the Quality Urban Environment (Figure 21).

The five Key Walking Areas have been examined through a detailed analysis of accessibility and walkability but recommendations are not only given to the improvement of these areas. In case of the five Key Walking Areas besides of recommendations, community feedback, condition audit and Key Routes are provided.

Figure 23 The context of the Walkability Plan 2013-2018 of the city of Joondalup



Source: Walkability Plan 2013-2018 of the City of Joondalup p.5.

According to The Walking Plan for London (2004), there are 5 aspects that make a city walkable and these factors are called the 5 "Cs" in the London Planning Advisory Committee's Walking Strategy for London. On the basis of it, walkable cities are Connected, Convivial, Conspicuous, Comfortable and Convenient. The Walkability Plan of Joondalup applies a Walkability Audit Tool that examines seven elements: general impressions, pathways, crossings, street furniture and signage, personal safety, adjacent traffic, aesthetics and amenities, whether they meet the requirements of 5 Cs.

The City of Joondalup also informed the community about the development of the Walkability Plan 2013-2018 with the help of community consultation, whose target were the general community, user groups and major stakeholders. They were reached through different

channels, such as a City-wide public survey and strategic on-site interview questionnaires. On the basis of initial research and the community consultation, general recommendations have been developed. Thereafter, the Key Walking Areas are demonstrated, analyzed and evaluated, recommendations are given.

To summarize, it can be said that an elaborated foundation is essential when working on the improvement of the level of walkability in a certain city. Szeged and Valencia also have to be completely prepared if they would like to make developments in this field, therefore on the basis of my investigation and research I try to give possible scenarios for the two cities to be able to make progress in city development, which I present in the next part of my paper.

4.3 Specific improvements in Szeged and in Valencia

If we take everything from the previous parts into consideration, we can have a number of ideas how to handle the situation, although, in my humble opinion, the best alternative would be for both Szeged and Valencia, if they stayed on the path they are already on as for working on Sustainable Urban Mobility Plans that highlight the importance of pedestrian traffic. As I see it, one possible solution for improvements could be establishing multi-modal transport systems with a strong emphasis on walkability in Szeged and in Valencia, too. It means that besides the emphasized improvement of walkability, governments should focus on the other sustainable modes of transport, such as cycling and public transport too because walking is not always an option for everyone. On the other hand, it is obvious that we cannot ban motorized transport forms, like cars or motorcycles, therefore the best alternative is to try to establish a transportation system which allows sustainable forms of transport to expand as much as possible between certain frames.

I support the concept of Lerner-Lam et al. (1992), which means that rethinking our approach to development and planning can be a key to creating walkable communities. They assert that a more balanced transportation system which supports automobiles, bicycles, transit and walking, that is a „multimodal" community should be developed, since it would have most of the following features.

- The majority of the residents in the neighbourhood lives within 5 minutes walking distance from the neighbourhood centre, where they can do the shopping and services are also provided.

- There are alternative automobile and pedestrian routes to every destination, which means that the streets are laid out in a well-connected pattern.
- The streets are complex public spaces so they include trees, sidewalks, buildings, traffic and parking.
- To discourage high-speed automobile traffic, the streets are relatively narrow.
- Parking is permitted on the streets since they can serve as an extra protection between pedestrians and moving vehicles.
- Besides streets, squares can also be found that form public commons and there are larger shops, offices and apartments around them.

So the first steps for both cities would be the creation of multi-modal transport systems in the light of the requirements of the Sustainable Urban Mobility Plans (Figure 22). Regarding the question of walkability, I would personally advice to policy makers of Szeged and Valencia to have regular contact with citizens, as it is a requirement of the European Union too, in order to be able to adjust the measures to their needs as much as possible. In this way, they would be truly encouraged to choose this healthy, environmentally friendly and economically beneficial mode of transport. Not to mention that according to the questionnaire, citizens of Szeged and Valencia agreed that if the circumstances would be better, they would walk more.

In the frames of creating multi-modal transport systems, I would recommend for Szeged and Valencia to develop a Walkability Plan. These Walkability Plans could include specific objectives to accomplish in order to get rid of the existing deficiencies regarding walkability in both cities. On the basis of my empirical research and the investigation of general solutions to increase the level of walkability, I have created a list for both Szeged and Valencia with possible actions. As it turned out from the survey, the two cities are similar in some aspects, therefore some of the possible actions are also similar or just the same, these are the following:

1. Cars mustn’t park on the pavements.
2. Improve the disability infrastructure.
3. Establish more parking places close to the city centre.
4. Establish thematic pedestrian routes.

Wit banning cars from parking on the pavements we can ensure that pavements are available for pedestrians in their total width, which is very important for a mother with her baby in a stroller. Regarding the improvement of disability infrastructure, it is true, that on the basis of

in-depth interviews with local stakeholders, citizens of Valencia seemed to be satisfied but the findings of questionnaire show a different picture. Taking the results of the questionnaires into account, the establishment of more parking places close to the city centre is essential in both cities. The establishment of thematic pedestrian routes with placing out signs can appeal more tourists to the cities and ease their situation.

Certainly, there are specific improvement recommendations for Szeged and Valencia as well. In Szeged, they are as follows:

1. Improve the conditions of walking paths.
2. Separate pedestrian traffic from cyclist physically.
3. Ensure better lighting.
4. Make medical centres better accessible.

Possible actions in Valencia to increase the level of walkability:

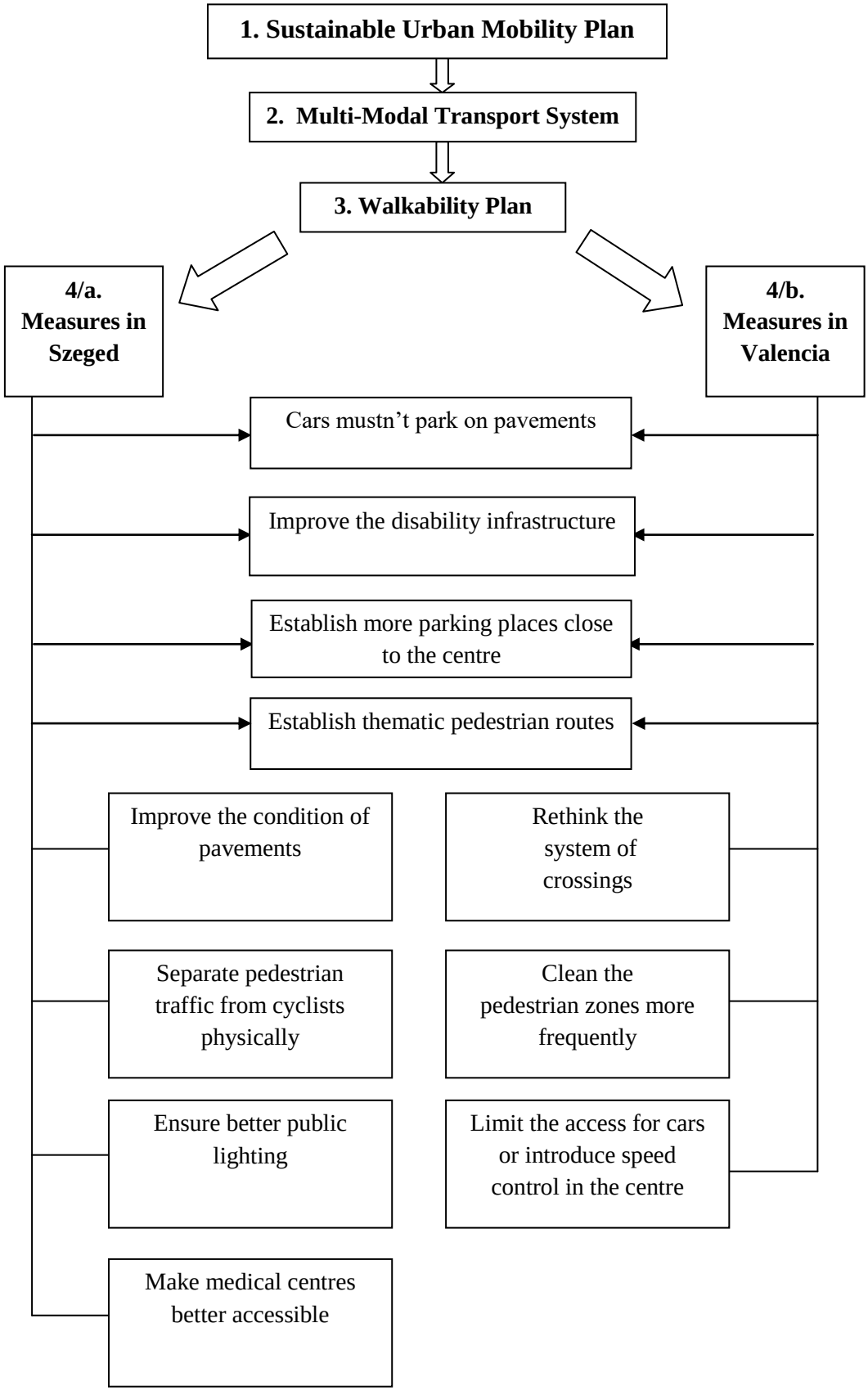
1. Rethink the system of crossings.
2. Clean more in pedestrian zones.
3. Limit the access to narrow streets in the city centre for cars or introduce speed limit.

Although the government of Valencia is already working on the last point, they are not finished yet, so I found it substantial to list it, as well.

The most important factor of these measures is that they are very simple and cost-efficient, since most of them only concern organizational questions.

I would like to emphasize that these actions are just demonstrating a possible scenario and are not the only good solution. On the other hand, the first four steps could be interpretable and applicable in any other cities that are eager to create a better place to live for citizens and would like to increase the level of walkability. After the 4th step, the measures are specific for Szeged and Valencia based on my empirical research. Similar steps can be defined after a comprehensive study, which reveals the areas that need to be improved, in any other city. Another significant aspect that needs consideration is the fact that these **measures cannot be made without proper grounding** and thinking everything through. Any wrong decision could lead to a negative judgement of walkability.

Figure 24 Possible scenarios in Szeged and in Valencia for improving the level of walkability



Source: own construction

4.4 Walkability, as a possible economic development tool in Szeged and in Valencia

Taking every single aspect that was demonstrated before into account, it can be claimed that making a city more walkable could serve as a possible economic development tool, which is true in case of Szeged and Valencia, too. To support this statement, I am going to summarize which benefits could be achieved and how they serve the development of the local economy.

All in all, if cities would follow the recommended sequence of steps, they could exploit the benefits that were mentioned in chapter 1.4. From the point of view of environment, the amount of congestion, contamination, greenhouse gas emission, air and noise pollution would decrease; people would save money on gas, car insurance and maintenance and the number of crashes, injuries and fatalities would also decline. Moreover, if people walked more, their physical activity would increase, resulting better health with reduced high blood pressure, obesity, diabetes and heart diseases thus lower medical costs. Regarding the local economy, if cities became walkable, it would spur economic growth, which would mean higher GDP per capita. Educated, talented and skilled workers would be attracted too, more businesses and more high-tech companies would be present and the incomes, housing values, the level of innovation would also increase. Furthermore, walkability would add vibrancy to the downtown and commercial districts that would benefit local retailers with increased traffic.

What is more, the implementation of the previously mentioned actions to develop an innovative city could have an effect on the local economy as mentioned in the beginning of the 4th chapter. Walkability could boost the turnover of local retailers with the increased number of impulse purchases. The quality of labour force could also be better, if citizens walked more and the environmental circumstances were more favourable and thus people became healthier. A key driver of economy could be creative class as well. The reason of it is that creative people - usually scientists, engineers, artists, designers and professionals - are usually more connected to innovations (Davies 2013). It is also cited in this article, what Charles Landry said *"the creative city allows ordinary people to make extra-ordinary happen, if given the chance."* In this way, the competitiveness of the city is also enhanced.

Thinking about specific cases in Szeged and Valencia, some examples turned out from the survey. During my observation in Szeged, I remarked an issue regarding the crisis of the exhaustion of business properties in the city centre and the failure of the retail trades' relative

position in favour of the Árkád mall. Increasing the level of walkability in Szeged could solve this problem, since it could enhance the amount of purchases in the centre, if people walked more there. The in-depth interviews in Valencia drew the attention to the importance of the grounding of every measure, because it can cause resistances, dissatisfactions and disagreements if implemented non-carefully. This aspect is crucial and occurred in both cities. In Szeged, making Dugonics square a pedestrian zone for weekends might not be the best answer to the situation, because for drivers it means a waste of time and it does not mean that much for pedestrians neither since there was not that much car traffic there during weekends. In Valencia, the case of banning cars out of Central Market's area received indignation because it meant a difficulty for suppliers in loading and unloading goods.

5. Summary

The purpose of my study was to interpret and apply the method of walkability in medium-sized cities and to investigate the level of walkability, its improvement opportunities and possible advantages using the example of two concrete cities, Szeged and Valencia. To reach this purpose, four main steps were taken and afterwards demonstrated in the main chapters of this study.

First of all, in the beginning we got familiar with the basic issue that this study would like to tackle: the transport-related negative side effects of urbanization. Generally, experts try to handle this situation with the help of electric transport systems but walkability is also another alternative solution, which is less known, more innovative and has similar positive impacts both on the environment, our health and more importantly on the economy, too. To reveal these facts, I used numerous specialized literatures from all over the world, since the method of walkability is more popular in more developed countries, especially in the United States of America. With the help of this literature, I was able to demonstrate the challenges behind walking, the evident solutions to these challenges, the concept of walkability and its benefits, positive impacts on the economy, health and environment.

Secondly, three methods to quantify walkability in local economies were presented through examples in the next main chapter: Walk Score, Walkability audit and Walkability Index. These methods take into account various factors that can have influence on the level of walkability in neighbourhoods and cities. In this chapter I also used specialized literatures as sources. From the point of view of my empirical research this chapter was crucial because I was able to use several aspects in my questionnaire on the basis of them, such as approachability of certain institutions, condition of pavements, safety, crossings, amenities, and so on.

In the third chapter, the emphasis was on my empirical research that I personally conducted in Szeged and Valencia. The structure of the methodology includes three levels: participant observation, questionnaire and in-depth interviews, the last one splits up into two parts interviews with local stakeholders and interviews with local policy makers. The two cities have been put into an international dimension for better interpretation in case of two questions of the questionnaire. It turned out from the survey that Szeged and Valencia could be

considered as similar cities in connection with some aspects of walkability; however there are also significant differences between them. According to respondents, increasing the level of walkability would be greatly appreciated and necessary in both of the cities.

Last but not least, suggestions were given in order to increase the level of walkability of a given city. There are general solutions that can help any city to make their neighbourhoods walkable, but I also find it essential to give specific recommendations for Szeged and Valencia how they can make progress in this field. Finally, based on my investigation of theoretical and practical specialised literature and my empirical research, I reached the conclusion that both cities should focus on creating multi-modal transport systems with a strong emphasis on walkability in the light of ensuring sustainable urban mobility. This action plan is also feasible in any other cities that would like to improve their local economy and transportation system with an innovative city development toolbar.

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Appendix 1 The questionnaire

1. To what extent do you agree with the following statements regarding your neighbourhood? (strongly disagree, disagree, neutral, agree, strongly agree)
    - The neighbourhood is a good place to walk.
    - My neighbourhood is safe.
    - My neighbourhood has attractive streets (street trees, landscaping, paving, lighting, houses).
    - In my neighbourhood I am near local shopping and services.
    - My neighbourhood has good access to schools and other educational facilities.
    - I have good access to public transportation.
    - Public lighting is appropriate.
    - The number of dust-bins on the streets is sufficient.
    - The infrastructure is appropriate even for disabled people.
    - The construction of crossings is good and crossings are safe.
    - The waiting and crossing time at intersections with traffic lights are appropriate.
    - Pedestrian areas are clean.
    - The width of sidewalks is appropriate.
    - The pedestrian zones are well isolated from car/bicycle traffic.
    - The location of obstruction, fire-hydrants, columns, lampposts is disturbing while walking.

2. To what extent do you agree with the following statements regarding the centre of Szeged/Valencia? (strongly disagree, disagree, neutral, agree, strongly agree)
    - The city centre is a good place to walk.
    - The city centre is safe.
    - The city centre has attractive streets (street trees, landscaping, paving, lighting, houses).
    - In the city centre local shopping and services are easily accessible.
    - The city centre has good access to schools and other educational facilities.
    - I have good access to public transportation.
    - Public lighting is appropriate.
    - The number of dust-bins on the streets is sufficient.
    - The infrastructure is appropriate even for disabled people.
    - The construction of crossings is good and crossings are safe.
    - The waiting and crossing time at intersections with traffic lights are appropriate.
    - Pedestrian areas are clean.
    - The width of sidewalks is appropriate.

- The pedestrian zones are well isolated from car/bicycle traffic.
- The location of obstruction, fire-hydrants, columns, lampposts is disturbing while walking.

3. Are the following institutions accessible from your home by walk? (yes, no)
    - school
    - workplace
    - shop
    - bank
    - post office
    - restaurant
    - hospital/ medical centre
    - stations of public transport
    - church

4. In your opinion, if someone arrives to the city centre by car, to what extent does she/he has a chance to park? (1-6, where 1 is the smallest and 6 is the biggest extent)

5. In your opinion, how much are the suburbs well connected with the city centre? (1-6, where 1 is the smallest and 6 is the biggest extent)

6. How much do the parked cars and greenery disturb the conditions of visibility? (1-6, where 1 is the smallest and 6 is the biggest extent)

7. How do you assess the respect of other participants of traffic towards pedestrians? (1-6, where 1 is the smallest and 6 is the biggest extent)

8. How much, do you think, are the most important tourist-attractions approachable? (1-6, where 1 is the smallest and 6 is the biggest extent)

9. In your opinion, to what extent would it be useful to increase the level of walkability in the city? (1-6, where 1 is the smallest and 6 is the biggest extent)

10. Which institutions would you like to see in the walkable city centre?
    - restaurant
    - confectionery
    - bar
    - disco
    - shoe shop
    - flower shop
    - clothes shop
    - park
    - medical centre

- school
- workplace
- bank
- post office
- church
- sport centre
- bakery
- other

11. In your opinion, would people more willingly walk, if the circumstances would be better? (e. g. better connection between walkable areas and other transportation modes) (yes, neutral, no)

12. What do you think about the amount of pedestrian zones? (insufficient, sufficient, too much)

13. How many days do you walk in a week in general because of any reason? (1-7)

14. In one occasion how many minutes do you walk in general?

15. Your gender? (male, female)

16. Your age?

17. In which part of Szeged/Valencia do you live?

18. Is your health appropriate for walking?

Appendix 2 The in-depth interview with local stakeholders

1. Have you ever heard about walkability? (If yes, can you tell me what you know about it?)
2. Do you have any problem with the availability of the most important establishments by walk? (supermarket, workplace, church, hospital, school, post office, bank, restaurant, public transport station)
3. What do you think about the condition of walking paths? (e.g. cleanness)
4. Are there enough amenities (benches, street lights, public toilets, trees) which attract you to walk?
5. How secure is walking during the day and night? (e.g. separation from cars, robbers)
6. What do you think about crossings? (signs, safety, time to wait and cross)
7. Are obstructions because of buildings, or e. g. fire hydrants, signs disturbing?
8. What is your opinion of the disability infrastructure?
9. What, do you think, makes a good pedestrian environment? What makes a neighbourhood walkable?
10. What specific improvements would you do here, in Szeged/ Valencia to increase the level of walkability?
11. How old are you?
12. Is your health suitable for walking?
13. Why do you walk in general? (to walk pets, to reach public transport station, to do exercise, to go to specific places, to enjoy outdoors)
14. How often do you walk? (days per a week)
15. How long do you walk usually? (minutes per session, and minutes per day)

Appendix 3 The in-depth interview with local policy makers

1. Have you ever heard about walkability?
2. Has the city of Szeged/Valencia dealt with this question yet?
3. Can you tell me your experience?
4. What was the reason to start this initiative?
5. Was it a controversial discussion in the City Council?
6. What decision has been made?
7. What is the conception?
8. Have you examined the budgetary aspect? What was the result compared to other city development intervention (electric transport development)?
9. How smooth was the realization? Have you experienced some resistance from locals?
10. How long was the realization period?
11. Can you mention a few issues that occurred during the realization?
12. Would you recommend walkability to other cities? Please, justify your choice.
13. In your opinion, what advantages and disadvantages does this conception have?