

# Alternate Pedestrian Routes in the Cities

László Jóna

(László Jóna, HAS Centre for Economic and Regional Studies Institute for Regional Studies West-Hungarian Research  
Department, Liszt Ferenc utca 10, 9022 Győr, Hungary, jonal@rkk.hu)

## 1 ABSTRACT

In 2014 the UN World Urbanization Prospects The Revision report has presented that 54% of the world's population has lived in cities. And according to the forecast made in the report in 2050, this rate will be 66%. So the cities of the future will have to face significant demographic and sociological problems because besides moving into the city various ethnic and religious groups according to the characteristic of the western countries the urban population shows an aging trend. And in addition the increasing number of the disabled people whose mobility even in a crowded city must be ensured. Therefore the public spaces will play an even more significant role in the cities life because this is the "space" in every city where regardless of gender, age, religion, qualification, etc. all social classes can be found. This is especially true for the public squares and parks where people can not only meet with each other from the different social groups but they can dialogue with each other as well; actively or passively relaxing, having fun, etc. All of this can significantly contribute so that these groups could get know each other (Thompson, 2002). However the public spaces of the cities including the squares and parks looking at their size are bounded. So for the expansion of the public spaces alternative routes could serve as opportunity. Therefore it's not accidental, that the National Development and Regional Development Concept 2030 of Hungary counts with the increasing of the alternative routes roles. According to the concept with the variability and rapidity of globalization processes, the transport infrastructure networks – because of their bounded nature – primarily with the alternative routes and with the ensuring of different modes of transport are they able to compete.

However there is a question what pedestrians mean under alternative route? Are they using such a route and if yes for what purpose?

Keywords: walking, pedestrian, route, alternate, city

## 2 METHODOLOGY

To find out what pedestrians think about the alternative routes and how they use them an online survey has been made in 2015. The online survey was held between July 16 and October 5 in 2015 which during 101 people were asked. Looking at the gender of the respondents 53% were female and 47% male (Fig. 1).

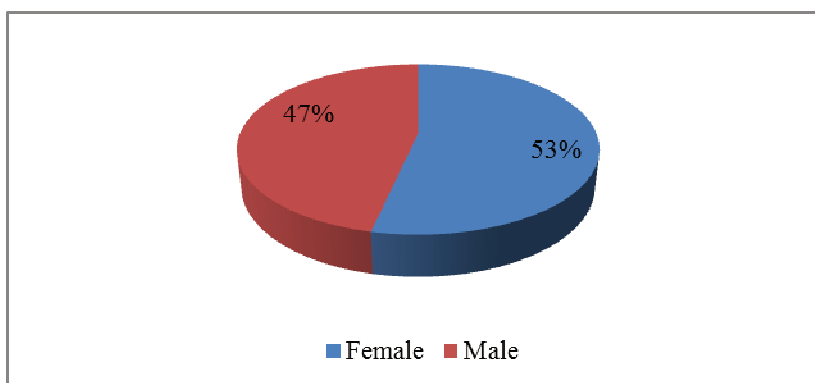


Fig. 1: The gender rate of the respondents

Looking at the highest graduate qualification 72% had Collage/University degree, 20% Secondary School, 5% Grammar school, 2% Vocational school, and 1% Primary school degree, and nobody marked the Vocational training school (0%) (Fig. 2).

According to the employment 68% of the respondents were Employed as a subordinate, 9% Employed in a senior position, 8% Contractor, 6% Student, 4% Pensioner, and 2% Unemployed (Fig. 3). Three people have marked the other category where 2 people wrote maternity leave and 1 person "Agent".

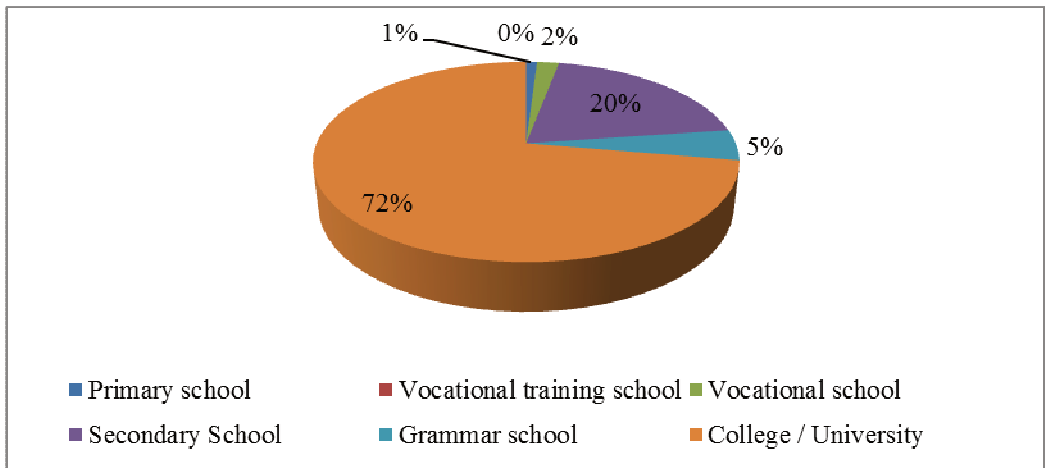


Fig. 2: The rate of the respondents according to the highest graduate qualification

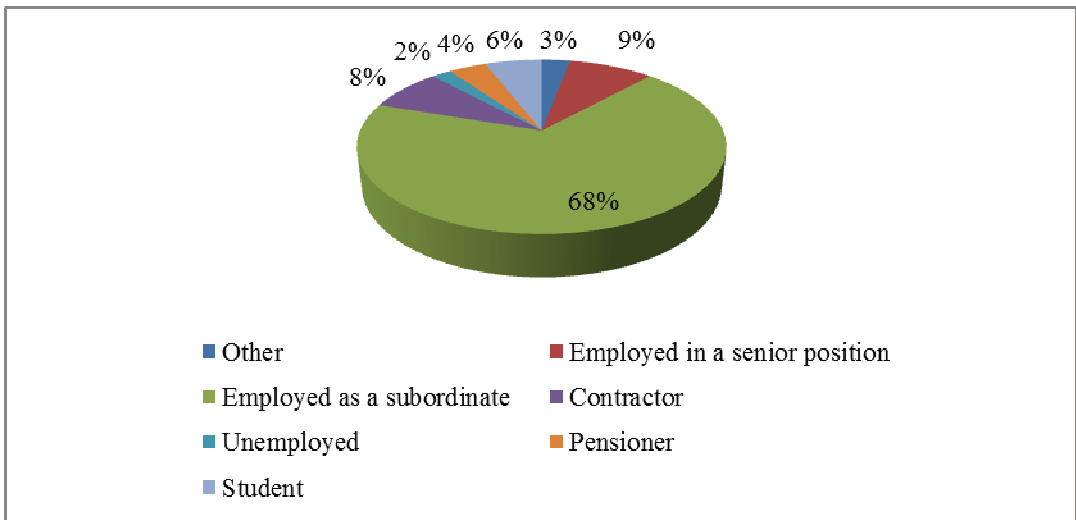


Fig. 3: The rate of the respondents according to employment

According to the age in a highest proportion between the 21 and 30 years, and the 31 and 40 years age group has represented themselves in the research equally with 38% (Fig. 4.). The other age groups have filled out the questionnaire in a significantly lower number. Therefore between the 41 and 50 years 9%, the 51 and 60 years 7%, the 14 and 20 years and the 61 and 70 years age groups in a 4% rate. From two age groups failed to take samples: the age under 14 and age over 70. The reason for this could be that the research hasn't raised the attention of the young generation and the elders using the internet in a low rate.

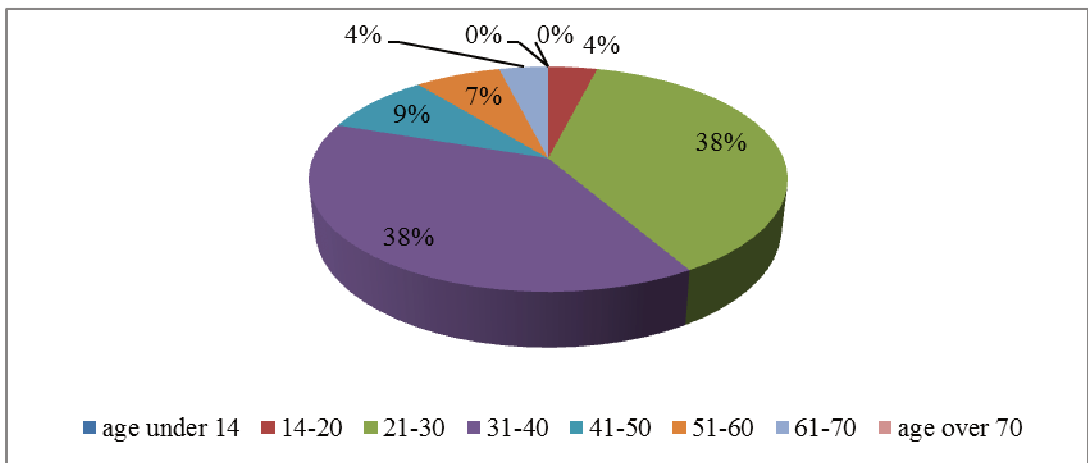


Fig. 4: The rate of the respondents by age

### 3 THE ASPECTS OF THE SURVEYED ROUTE CHOICE

In the first question the respondents has to answer how they approach their workplace or school form home the most often. The most people have marked the car but in the second place surprisingly they indicate the bicycle instead of public transport (Fig. 5). With 15% the Bus was only the third in a row, which was followed with 11% the walking. The other category choose 6% where two people wrote the train and one people the scooter another one “by bus and/or on foot” and two people “by train and on foot”.

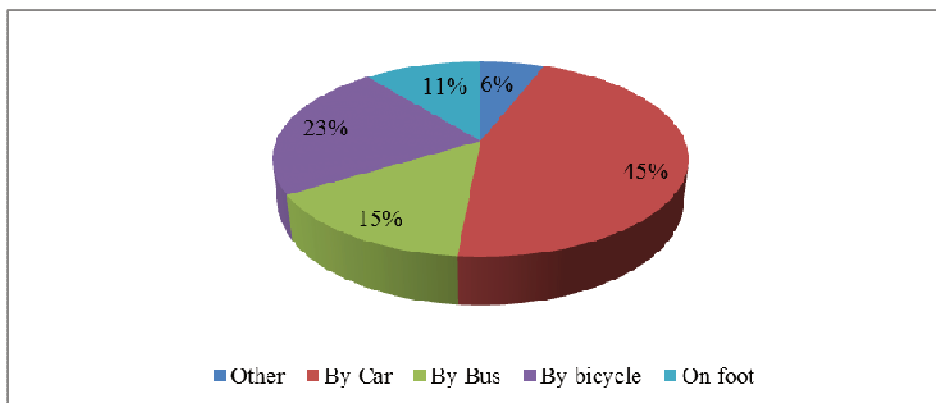


Fig. 5: The rate of the most common approaches to the workplace / school of the respondents

Then the respondents had to be justified why they choosing the route which they the most commonly use between their home and workplace or school. All of this the respondents could mark more than one answer to the defined categories. Among the reasons the most highlighted was the “shortest way” which has been marked more than three quarters of the of respondents (76,2%) (Fig. 6). The other categories even not reached 20% so the second most nominated "safe" was chosen by only 15%. The “By public transport (eg bus) is the shortest one” 13% the “It leads through pleasant environment (plants, fountain, street furniture, etc.)” 11% of the respondents have marked. The “on the way are important Business, shop, etc.” and the “I’ve always travelled on that route, never thought of any other” answer by 10% and the “your friends / colleagues are also choosing it” and the other categories were also selected by 3%. Within the other category the other three aspects of the route choice were “This is the only way”, “Faster, even if it’s not shorter” and the “Lowest traffic”. It turned out clearly that the large part of the respondents choose the shortest route between their workplace and their school. All this supports the former researches of pedestrian movements which according the pedestrians always choose the shortest route to achieve their destination (Helbing et al., 2001) (Daamen, 2004).

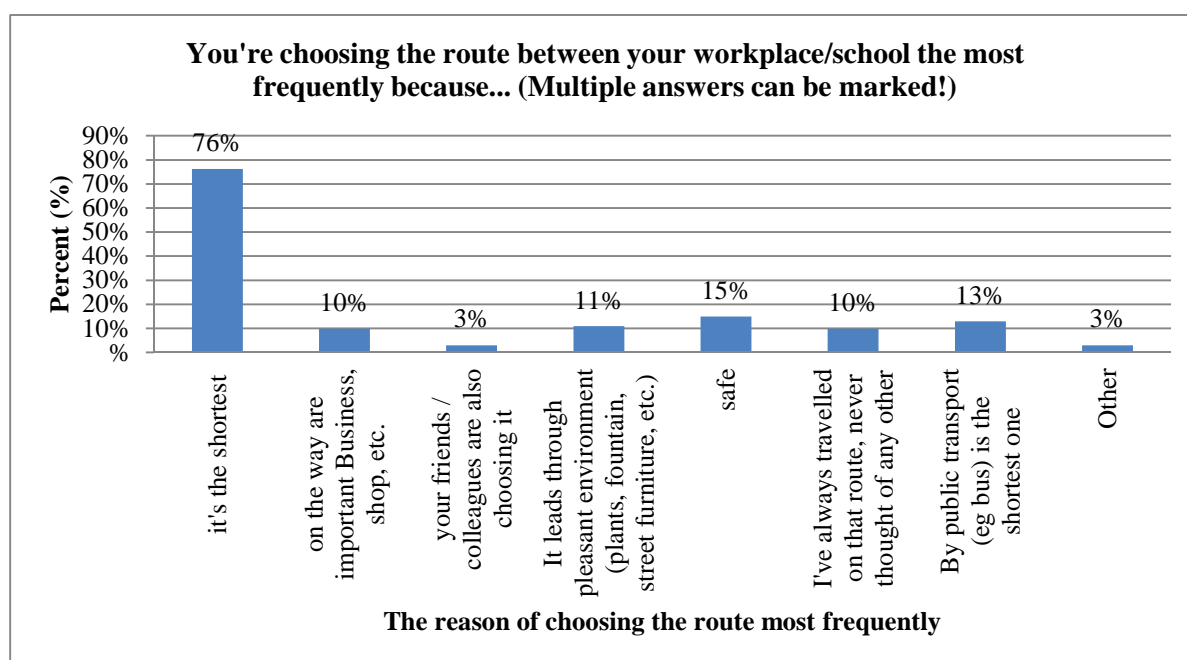


Fig. 6: The reason for choosing the most frequently the route between the home and workplace/school of the respondents

#### 4 THE ASPECTS OF THE ALTERNATIVE ROUTE CHOICE

It arises the question if someone walks on foot then in every case he chooses the usual (shortest) route to achieve his destination or in certain situations alternative routes may also be considered. From the answers it turned out that more than half of the surveyed (48%) usually choose an alternative route when he walks (Fig. 7).

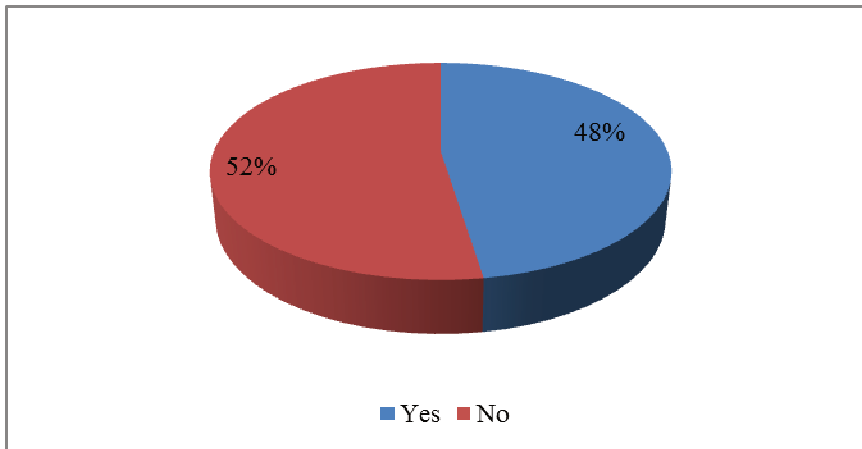


Fig. 7: The rate of the respondents alternative route choice in the case of pedestrian traffic

Then the respondents in a short text answer had to justify that in what kind of cases they choosing an alternative route. The most people wrote that if their time allows or if they have something to do. But many people also mentioned that if the weather is nice or he walks. Summary, it can be said that most of the respondents choose alternative paths if there is an intermediate destination between their starting point and the end goal that is outside their usual route. Typically, they are all done this on foot and in good time.

After all this it was interesting to see that what kind of public space types the surveyed walking through when they are on foot. In the two-thirds of the answers (66%) the park has been marked which from not far stays away the public space (59%) (Fig. 8). All this confirms that for people are especially important the parks and public spaces around them (Madden, 2008). Interestingly, the third most marking received the underpass (41%), which is only 18% less form the square. The 25% chose the overpass, 22% the alley, and 18% the inner courtyard and the other category 3 people where the “Anything” the “I do not” and the “industrial railroad, embankment, industrial area” were included as justifications.

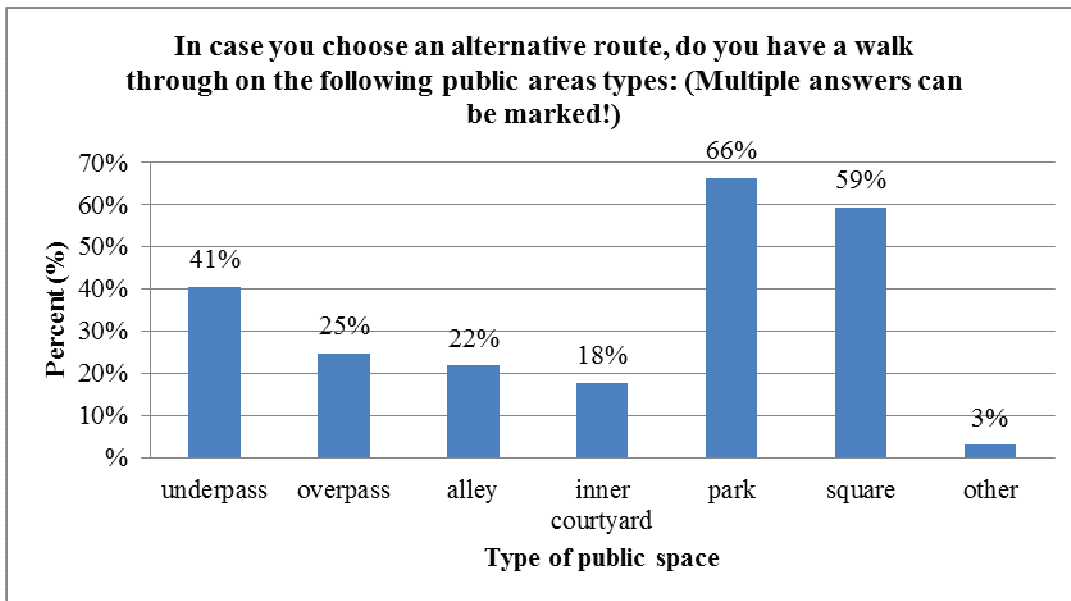


Fig. 8: Public space types affected as alternative routes by the respondents

Based on the previous chapter, it is also possible to say that people on foot are also tying walking through in a pleasant environment when they choosing an alternative route. Because vegetation, relaxation, and water have also a prominent role in public spaces and parks. (Thompson, 2002) Therefore it wasn't surprising that

the respondents have marked the categories “Provides the fastest route to achieve your goal” (54%) after then 44% “It leads through a pleasant environment (eg. park, square, pedestrian street, etc.)” to the question on what kind of aspects they choose an alternative route (Fig. 9). But it wasn't surprise the fastest route either because as it was shown in Fig. 6. the most people choose it to reach his goal. But what is should be definitely noticed is that the “It's located in a safe environment” (31%) and “The route affects important stores / shops / institutions (eg. school)” categories in the same proportion nearly one third of the respondents have chosen. Interestingly, it was more important for the surveyed to reach their goal quickly and in a pleasant environment such as the route should be safe or to affect some institution or business. At this question also three people have chosen the other category where the “Healthy, due to movement fresh air is needed before and after work” the “I don't” and the “Avoid road closure” was given as additional aspects.

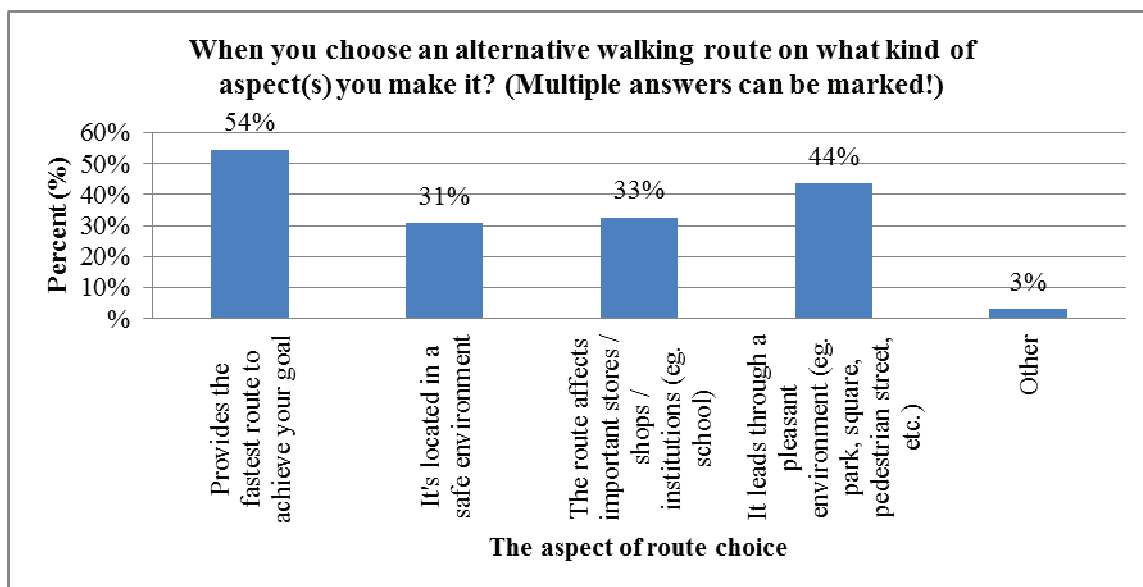


Fig. 9: The aspects of alternative route choice of the respondents

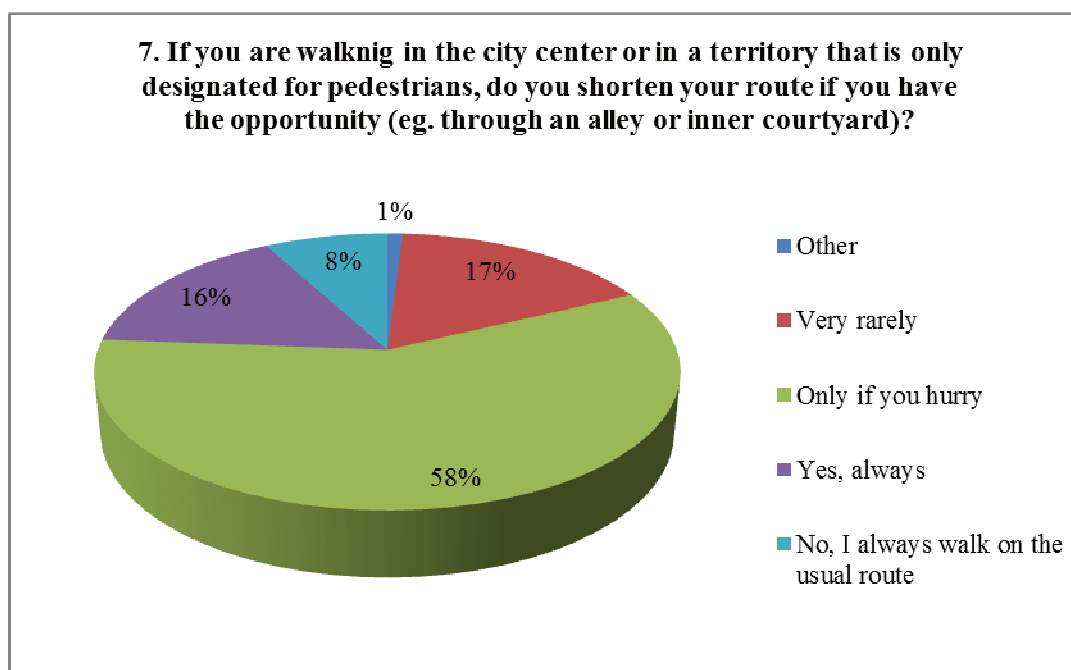


Fig. 10: The reason for route shortening of the respondents in the case of pedestrian traffic

As an analysis of the shortest route, pedestrian movement and alternative route choice, in the last question the respondents had to answer, if they are on foot in the city center do they usually shorten their route, if it's possible for example through an alley or an inner courtyard. From the results it turned out that more than half of the respondents (58%) only in that case if they are in hurry somewhere. From this significantly lagging behind, but nearly the same proportion were of those who always shortened their route (16%) and those who

rarely (17%). Only 8% answered that they always walking on their usual route and 1 person have marked the other category.

## 5 CONCLUSION

According to the results of the online survey most of the respondents choose an alternative route to achieve his destination if:

- the alternative route shortens his route
- it leads through a pleasant environment
- there is an intermediate destination between the starting and ending goals
- primarily walks on foot

However as it was shown in Figure 5. most of the respondents travels between they workplace and home next to the car often with a bicycle. So in most cases outside of the pedestrians the bicyclists can also use in a significant number the alternative routes.

Therefore based on the results of the survey, the cities should strive to ensure such alternative routes to the inhabitants which connect important nodes, provide a pleasant environment and function as an intermediate destination. Such routes can be primarily the public open spaces, the inner courtyards and the parks which providing traffic opportunities not only for pedestrians and bicyclists but they also have many other features. In the case of public spaces and the inner courtyards such features are the shops, and the restaurants with terrace which playing an important role in how significant the pedestrian traffic in the given part of the city (Gehl, 2014) (Jóna, 2013). Besides that these can also serve as an intermediate destination providing an interesting and diverse environment. But the same is true of the parks where the playground or the sports field can fill the same function, and in a lot of parks are a smaller café, restaurant or even a shop. However for both is particularly important ensuring the appropriate green space. This is especially true of parks where it's essential to have a diverse and rich flora. However, for pedestrians to discover, these routes should be introducing it to the inhabitants. One way to do this is can be the replacement of the pavement cover, which can better highlight the routes that allows pedestrians to provide another route to reach their destination. The placement of information boards can also help this as well as the designation of new bike trails. But in the case of the Smart Cities the use of the different applications could significantly contribute the promotion of the alternative routes. Because if someone is looking for a particular business through his smartphone the application can not only show where it's closest to him, but also on which route can get there the fastest. Therefore on the track of these routes it's worth developing alternative routes or even transform the route itself. For example in many cities in the city center a bigger car park has been removed or a road with car traffic was transformed into a public open space for pedestrians (Gehl, 2014). And on these squares and roads restaurants, cafes, terraces, shops, etc. have been established, which thanks to the volume of the pedestrian traffic have increased significantly. But the opening of the buildings with an inner courtyard for the pedestrians has generated similar traffic (Jóna, 2013). With this the city has become much more liveable and these routes have become popular among the inhabitants. Therefore the cities of the future could remain liveable, and sustainable should be strive to create the appropriate alternative routes based on the results of the survey.

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