What to do with the overpasses constructed in the urban areas?

An alternative vision on the overhead pedestrian bridges constructed in the city of Baku, Azerbaijan.

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Abstract

The overhead pedestrian bridges are usually built over the high-speed highway roads to allow pedestrians to cross such roads safely. The road traffic planners in Baku, Azerbaijan, construct such facilities within the urban areas trying to provide pedestrians with safe facilities for road crossing in conditions of rapidly growing motorization of the city. Despite the quite clear objective, the reliance on the overhead pedestrian bridges in the cities is usually associated with car-dependency and poor provision of all-accessible and safe facilities for non-motorized mobility. This study is normative in its nature and was designed based on a combination of the qualitative research traditions with some elements of quantitative methods. This research aims to understand the role and impacts of the overhead pedestrian bridges in the context of the city of Baku and suggest ways for improving transportation infrastructure. The research aim will be reached by answering the two research questions based on the results of the semi-structured interviews that were interpreted through the theoretical framework of transit-oriented development. The results identified the safety risks that still exist despite the presence of the overhead pedestrian bridges and demonstrated a considerable demand for at-grade road crossing in the city of Baku.

Keywords: *overhead pedestrian bridges, grade-separated facilities, transit-oriented development, pedestrian accessibility, pedestrian safety, motorization, non-motorized transportation, jaywalking.*

Note: The picture on the front page is retrieved from Trend.az (2019).

Contents

Glossary

The main term of this research is the *"overhead pedestrian bridge."* This term can be replaced throughout the research by the synonym terms like the following:

- overpasses

- grade-separated facilities

- grade-separated crossings

- overhead bridges

- elevated crossings

- overhead crossings

- pedestrian overpasses

- pedestrian bridges

The term *"grade-separated facilities"* can also be used to refer to the *underpasses*.

The term "at-grade road crossing facilities" or "crossing the road at grade" is referred to signalized zebra crossings with refuge islands.

Grade separation – is a method of aligning a junction of two or more surface transport axes at different heights (grades) so that they will not disrupt the traffic flow on other transit routes when they cross each other. (Wikipedia, 2020)

Jaywalking – the action of walking across a street at a place where it is not allowed or without taking care to avoid the traffic. (Cambridge Dictionary, 2020)

Motorization – the act of motorizing (equipping with motors or with motor vehicles). (Vocabulary.com, 2020)

Non-Motorized Transportation (NMT) - includes all forms of travel that do not rely on an engine or motor for movement. This include walking and bicycle, and using small-wheeled transport (skates, skateboards, push scooters, and hand carts) and wheelchair. These modes of transport can provide both recreation and transportation. (Mat Yazid et al., 2011)

Overpass (overhead pedestrian bridge) – is a bridge, road, railway, or similar structure that crosses over another road or railway. An *overpass* and *underpass* together form a grade separation. (Wikipedia, 2020)

Refuge islands – is a small section of pavement or sidewalk, completely surrounded by asphalt or other road materials, where pedestrians can stop before finishing crossing a road (Wikipedia, 2020).

Road diet – is a technique in transportation planning whereby the number of travel lanes and/or effective width of the road is reduced in order to achieve systemic improvements. (Wikipedia, 2020)

Sustainability – the quality of causing little or no damage to the environment and, therefore, able to continue for a long time. (Cambridge Dictionary, 2020)

Transit-oriented development (TOD) - a mixed-use residential and commercial area designed to maximize access to public transport. (Quizlet, 2020)

Traffic congestion – is a condition on transport that is characterized by slower speeds, longer trip times, and increased vehicular queueing. (Wikipedia, 2020)

Transit – conveyance or transportation from one place to another, as of persons or goods, especially, local public transportation. (Vocabulary.com, 2020)

Underpass – the path that goes under something such as a busy road, allowing vehicles or people to go from one side to another. (Cambridge Dictionary, 2020)

Vulnerable groups – groups that experience a higher risk of poverty and social exclusion than the general population. Ethnic minorities, migrants, disabled people, the homeless, those struggling with substance abuse, isolated elderly people and children all often face difficulties that can lead to further social exclusion, such as low levels of education and unemployment or underemployment (EQAVET, 2002).

Walkability – is a measure of how friendly an area is to walking. (Wikipedia, 2020)

Zoning – the act of deciding, or the decision that has been taken about, what particular use an area should have (Cambridge Dictionary, 2020).

LRT – light rail transit (trams).

BRT – bus rapid transit.

1. Introduction

The city of Baku is the capital of Azerbaijan and the largest urban area in the country, which remains the most important economic powerhouse of the state and of the whole Transcaucasian Region (Valiyev, 2014; World Bank, 2018). From the mid-19th century onwards, Baku became a global center of oil production and attracted substantial investment in this industry (Blau & Rupnik, 2019). Being a part of the Russian Empire allowed Baku to open its doors to foreign entrepreneurs like the Nobel brothers to develop oil production on the Absheron Peninsula, where the metropolitan area of Baku is nowadays located (ibid.). Since those times the economic significance of the city made it attractive for people in terms of employment and today the population of greater Baku equals to a number varying between 2.6 and 3.3 million people (Guliyev, 2018; Jafarli, 2018). Today Baku is the main economic center of Azerbaijan and generates more than 90% of the national income (Jafarli, 2018).

The rapid development of the new economies in the Global South is generally associated with the growing wealth of the population and quite a weak participation of the governments in the development of good services for all segments of people. Quite a similar situation can be seen in the transportation sector of some developing countries where the political elites can make decisions that will probably have some immediate gains but consequently affect the whole population. For instance, the governments of such states can prioritize mobility for private vehicles over non-motorized modes of traffic like walking and cycling and neglect the interests of the latter category (Takamine, 2004). According to World Bank (2019), the city of Baku has to improve its pedestrian and cyclist friendly infrastructure to make the urban environment more inclusive towards all pedestrians including women, children and people with reduced mobility.

It is important to state that the city planners in Baku neglect the importance of providing accessible transit for all segment groups, which led to a situation when people tend to rely more on private vehicles for transportation. It is known that the rapid economic growth after the World War II and a high-scale development of car industry resulted in high reliance on private cars for travels (Dodson & Gleeson, 2009). Construction of roads and other car-oriented infrastructure resulted in urban sprawl several decades ago and today it is seen as a huge burden for planners who aim at building sustainable and walkable communities with non-motorized transport in their core (Knowles, 2020). Unfortunately, the city planners in Baku are making the same mistakes that were made in postwar West and the government allocates huge investments in road transport infrastructure which leads to an even greater reliance on private vehicles.

Today the transportation sector remains among the most invested fields in the national economy of Azerbaijan. Between 2003 and 2016 the government of Azerbaijan invested around 25 billion dollars in the development of the road infrastructure in the country which helped the state to reach the 36th position in the world for its road quality in 2017 (Jafarli, 2018). It worth mentioning, that both transportation and construction planning sectors are poorly controlled and are fragmented between different governmental bodies and actors (World Bank, 2018; Guliyev, 2018). This fact creates a substantial risk of using

the public funds that are being invested in redevelopment for private interests (Guliyev, 2018). According to Jafarli (2018), the absence of land use and planning regulations for construction and redevelopment (e.g. the strategic planning document for the city of Baku) coupled with sprawling neighborhoods created a situation when the poorly designed public transportation leads to a higher reliance on private vehicles, and consequently, to traffic congestion. It is known that the recent years of urban redevelopment in the city of Baku can be characterized by chaotic construction (Figure 1) with a poor consideration of the basic principles of urban planning (Guliyev, 2018). The public spaces are significantly reduced by large-scale construction projects that are located adjacent to each other and are poorly designed, usually neglecting the access to public transportation and lacking parking lots, public spaces and playgrounds (ibid.). It is also known that the urban governance in Baku is firmly centralized, while the mayors of the city are not elected by the population but appointed by the president of Azerbaijan (ibid.). Considering the mentioned issues, there is a need for drastic changes in city planning and creating facilities for sustainable transit (e.g. walking, cycling, public transport), while putting much more efforts for reducing car-dependency.

Figure 1. A typical newly developed neighborhood in Baku. Source: photo shot by author.

It worth mentioning that the environmental damages from a high reliance on private vehicles in the urban transportation system are proven by the notable global institutions including the World Health Organization (2000). According to the figures regarding car ownership in Azerbaijan for the year 2019, there are more than 1.4 million cars registered in Azerbaijan, while 80% of these vehicles are used in the city of Baku (World Bank, 2018; Marja.az, 2020). Transportation accounts for 11% of all greenhouse gas (GHG) emissions of the state, meaning that the 80% of the emissions produced by cars in Azerbaijan are concentrated in one city (World Bank, 2018). The existing situation does not fit the *Sustainable Development Goal 11* (SDG 11) of the United Nations Organization (UN) that stands for *'sustainable cities and communities'* (UN, 2015).

Moreover, it would be good to mention that since the people highly rely on private vehicles in Baku, it is possible to see a lot of old cars on the roads that are cheaper compared to the brand new and more environmentally friendly ones (BBC News, 2018). It is well-known that such vehicles produce a lot of poisonous particles like lead that increase air pollution and affect human health (WHO, 2014).

1.1 Background

Since the collapse of the Soviet Union, the city of Baku has experienced drastic and unprecedented changes. The last to the date master plan for the city of Baku was adopted in 1987 – in the Soviet era, when the government had a different vision on the future development of its cities (Barman, 2013). The urban planners those times were not paying too much attention on the road infrastructure because it was not thought to deal with a large number of private vehicles (Jafarli, 2018). Instead, the main emphasis was made on the development of public transportation that was quite successful in the Soviet era and was able to meet demands of the people living in the city (ibid.). The car ownership rate in Baku was equaling 35 vehicles per 1000 people between 1975 and 1990s, which constitutes one-eighth of the current number (ibid.). In reverse, the public transportation system of Baku was quite developed and was consisting of buses, the suburban rail, trams, trolleybuses and metro (ibid.). Unfortunately, these accomplishments in public transportation planning were not preserved after the collapse of the Soviet Union because maintaining the state budget-led public transportation became too expensive for the young nation in early 1990s (ibid.). The capacity of the once existing public transportation was replaced by the informal bus taxis called *'marshrutka'* that existed until late 2000s (Guliyev, 2018). Amid rapid economic growth in post-soviet period the city of Baku gradually transformed into a city where private vehicles became a dominant mode of transportation.

The absence of a strategic plan for Baku led to a poor control of the government over land use strategies and transportation planning. The city of Baku that was once famous for its developed and diverse public transportation, parks and green zones, turned to a place where all these features became victims of the rapidly growing motorization (ibid.). Today the formerly existing green areas along the roads are being replaced by extra lanes for car traffic, and the once wide sidewalks are getting narrow as the consequence of road widening (Babayev, 2020). The traffic planners in Baku fail to prevent the uncontrolled growth of motorization in the city and are doing not enough in order to improve the role of public transportation in the city. For instance, the state-led bus system called BakuBus was launched in 2015 and was aiming to provide the city of Baku with a high-quality bus service that would revive the importance of public transportation (World Bank, 2018). Despite the quite noticeable changes in the quality of bus transit, the reform still has too much to accomplish (e.g. separate bus lanes across the city). The creation of a brand-new bus transit service is barely enough to battle car-dependency in the context of Baku. The city authorities strictly divide the city into the areas for pedestrians and places that are designed mostly for car traffic.

The decisions taken in the recent years demonstrated more support towards meeting the demands of car traffic than improving transit in general. It seems that the non-motorized modes of transportation like walking and cycling are not seen as a matter of high priority

for the city. The public spaces in Baku are strongly divided between pedestrian zones and driveways, and pedestrians are usually split from the urban traffic. Such a design made private cars a dominant mode of transportation and its growing role negatively influences the urban environment of Baku. For instance, under such conditions, pedestrians are forced to use the underpasses and the overpasses for crossing the city roads. Excluding people from the road traffic this way can be understood as the desire of the city planners to ensure rapid movement of private vehicles with the aim to prevent traffic congestion. It is known that despite its dense main road network equaling around 1600 km, the investments made in such a design do not pay off and Baku remains a congested city (World Bank, 2018). Nowadays the State Road Agency (SRA) keeps constructing the grade-separated facilities. For instance, from the day I have started conducting this research (early February 2020), four overhead bridges were finished and put into operation by the SRA (Table 1). According to the press secretary of the State Road Agency of Azerbaijan Anar Najafov, there are 113 grade-separated facilities constructed in the city of Baku to the date: 41 overpasses and 72 underpasses (Varlamov, 2020a).

DATE	EVENT
3 April, 2020	A new overhead pedestrian bridge built on the intersection of Moskva Ave and 20 Yanvar St was opened by the president of Azerbaijan, Ilham Aliyev.
22 June, 2020	A new overhead pedestrian bridge built on the Neapol St was opened by the president of Azerbaijan, Ilham Aliyev.
19 August, 2020	A new overhead pedestrian bridge was opened on the Azadliq Ave.
9 September, 2020	A new overhead pedestrian bridge built on the Mardakan - Buzovna - Bilgah higway was opened by the president of Azerbaijan, Ilham Aliyev.
12 September, 2020	Famous Russian journalist and urbanism activist Ilya Varlamov wrote an article about the ongoing construction of overhead pedestrian bridges in Baku.
17 September, 2020	Press secretary of the Main Police Department of Baku City Vagif Asadov said that the majority of the road traffic accidents with pedestrians occur in the areas close to the grade-separated facilities.

Table 1. The timeline of events related to the research topic happened in Baku. Source: created by author.

I worth mentioning, that the provision of pedestrian safety in urban areas of Baku by constructing grade-separated facilities like the overpasses and underpasses has faced quite a large amount of criticism among researchers, independent experts based in Baku and activists. For instance, according to the *Global Designing Cities Initiative*, elevated crossings increase the walking distances and time, take the valuable space that could be used for designing sidewalks and can cost 20 times more than the at-grade road crossing facilities (GDCI, 2007). Moreover, according to Varlamov (2020b), since the overhead pedestrian bridges are usually not used by the pedestrians due to the physical efforts and time required for their use, these facilities can rather lead to even more traffic accidents between pedestrians and cars. On the figures below it is possible to see the traffic accidents (Figure 2) in Moscow at the locations with grade-separated facilities (Figure 1). Based on the aforementioned, it becomes obvious that constructing overpasses within the urban environment is a poor way of providing pedestrians with accessible facilities for road crossing.

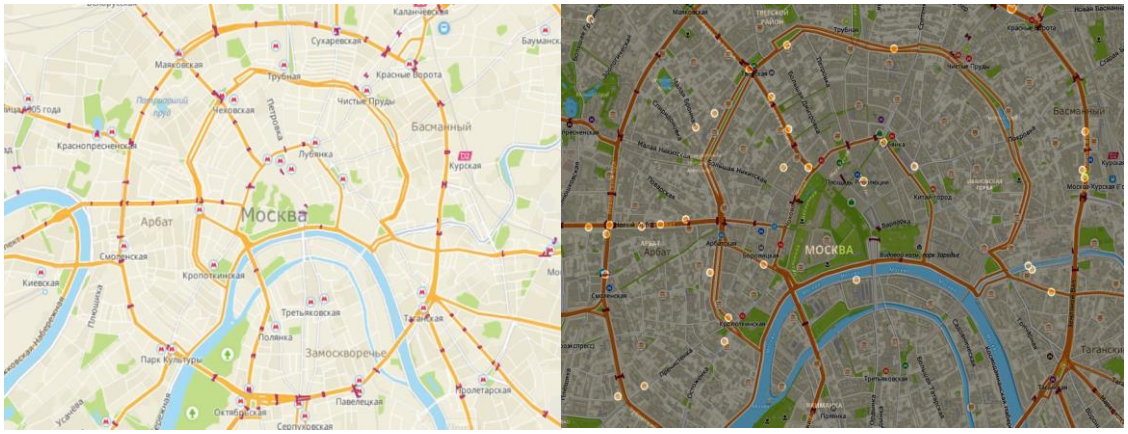


Figure 2. Grade-separated facilities in Moscow (violet lines) (Varlamov.ru, 2020b).

Figure 3. Pedestrian fatalities between 2015 and 2020 at some locations in Moscow (white circles) (Varlamov.ru, 2020b).

1.2 Rationale

The growing car-dependency in the cities located in the Global South, including the city of Baku, can be tackled by improving conditions for non-motorized transport like walking and cycling, as well as enhancing the role of public transportation for transit. The construction of the overhead pedestrian bridges in the urban areas can increase the role of private vehicles and can spoil the national and global efforts towards reducing the GHG emissions produced by the transportation sector. This objective can be reached by designing safe, accessible and inclusive urban environments, while improving mobility for all segments of people. The overhead pedestrian bridges that are designed in Baku for ensuring pedestrian safety, and are thought to reduce traffic congestion, raise a lot of questions regarding the both tasks. This study will examine these facilities in terms of pedestrian safety and accessibility and suggest the ways to improve the existing transport infrastructure in a way that could be beneficial for both pedestrians and drivers.

1.3 Motivation

The main motivation of this research is to shed light on the both positive and negative impacts of the overhead pedestrian bridges and to illustrate the ways to avoid constructing these expensive facilities.

This research started with my desire to conduct a research on my home city – the city of Baku. It was quite challenging to find a research problem matching my initial plan while being a student abroad, so I was checking social media for some inspiration and was also trying to find some differences between Stockholm and Baku that also helped to identify the problem that gained my interest. It is important to mention that considering the field of my studies and my deep interest in topics regarding urban environments, I have spent quite a long time contacting scholars that conduct research on Baku to identify the main issues that deserve attention. The growing number of grade-separated pedestrian facilities

in Baku as well as the problem of gradually increasing motorization in the city were voiced a lot of times by independent experts and Facebook bloggers in Azerbaijan, while nobody (based on my literature review) has conducted such a research that would discuss the both issues and the connection between them. I decided to travel to Baku for a fieldwork and to find out whether the citizens use the overhead pedestrian bridges, and what are the issues that they usually face while using these facilities.

Throughout my research in Baku, I have realized that the research topic chosen for my Master's thesis is highly relevant considering the existing trend of ensuring pedestrian safety by constructing pedestrian overpasses and underpasses. By conducting this research, I want to reduce the existing research gap regarding the grade-separated pedestrian facilities built in the city of Baku. Also, there is an obvious knowledge gap regarding the issues in the city's transportation planning, while the number of studies conducted in English language is even more limited. Since, the image of the city of Baku is usually promoted as a place attractive for tourism and entertainment, this research project is also thought to fill the gap of a critical viewpoint on the city itself with a focus on transportation and mobility.

1.4 Aim and research questions

Generally, it is known that the overhead pedestrian bridges are constructed as facilities that provide pedestrians with safe crossing over the busy and high-speed highways (Hasan & Napiah, 2017). From another perspective, it is understandable that having these facilities within the urban environment is associated with increasing car-dependency and separation of pedestrians zones from the roads. In such conditions, pedestrians that should be able to cross the urban roads at grade using safe and all-accessible pedestrian facilities are unable to do so due to the safety risks. With respect to the ideas mentioned earlier, the ***aim*** of this research is to understand the role and the impacts of the overhead pedestrian bridges on the urban realm and to suggest some solutions for designing both all-accessible and safe pedestrian facilities in the city of Baku. The aim of this research will be reached by interpreting the collected empirical data based on the contextual and theoretical frameworks chosen for this study. This research project will be conducted based on the following research questions:

1. What do the pedestrians in Baku think about the constructed overhead pedestrian bridges and their role as the road crossing facilities?

2. What kind of infrastructure can be designed in Baku to both facilitate road crossing and meet pedestrians' preferences?

The first question was formulated to explore to what extent do the pedestrians in Baku use the overhead pedestrian crossings and to learn about the preferences of the pedestrians in Baku regarding road crossing. The second research question was designed in order to allow me suggesting the possible solutions based on the preferences of the interviewed people, and the issues that they suggested to be addressed. Since, the construction of the

overpasses is seen as a response to the increasing demand for pedestrian safety amid rapidly growing motorization of Baku, answering these research questions requires a good understanding of the existing issues in the transportation sector. The issues will be discussed in the following chapters alongside discussing the ways the pedestrian infrastructure can be designed to be accessible and safe for all segments of people.

2. Literature review

The chosen literature for this paper helps to understand the impacts of the overhead pedestrian bridges on the urban realm. The topic and the research questions for this research were chosen based on my observations during a year and a half of living and studying in Stockholm. This city applies quite successful policies for designing pedestrian-friendly environments. The noticeable infrastructural differences between my home city Baku and Stockholm drove my desire to understand why the overhead bridges are used in one city and are not widely used in another. In order to avoid preconceptions before the interviews, this literature review was developed based on the empirical data retrieved from the interviews. This research examines the main difficulties of pedestrians when faced with the overhead pedestrian bridges in Baku. In other words, this paper tries to understand what are the key factors that influence the decisions of people to use these facilities or to find alternative routes for crossing the roads with already constructed overpasses. The concepts of pedestrian accessibility and pedestrian safety are key aspects that can help to explain the way people behave in different situations.

2.1 Pedestrian accessibility

One of the key concepts chosen for this research is the term of *accessibility* that was defined by Hansen (1959) as the potential of opportunities for interaction (Gutierrez & Garcia-Palomares, 2020). Also, the term 'accessibility' is defined as the ease of reaching places where people want to go (Cervero et al., 2017). The concept of accessibility is widely used in transport geography as a crucial characteristic for locations and as a measure that shows whether some locations are easy to access or not (Gutierrez & Garcia-Palomares, 2020). As a measure, accessibility is usually used to evaluate the potential of transport infrastructure to be accessed and deliver different actors of traffic from one point to another (ibid.). Also, this concept is seen from the perspective of proximity and facility to social interaction and can examine social, political and economic factors of access such as the extent to what all social groups can afford the access to transportation and other private and public services (ibid.). In the context of the overhead bridges, the concept of accessibility explains whether people from different social and mobility groups are able to access and use the built facilities. The level of accessibility can depend based on different variables including the conditions of the overhead bridge, the distance to it, the

physical and mental state of pedestrians that are crossing the road and time spent on the use of the facility (Obeng-Atuah, 2016).

The central term to the concept of accessibility is *walking* that is seen as the basic mode for mobility of people. Alongside being an environmentally friendly and non-polluting mode of traffic, walking is known for its proven benefits to human health (Sinclair & Zuidgeest, 2016). In transport geography the role of walking is associated with involvement of wider groups of people that increases the share of non-motorized mobility in the city and creates inclusive communities for all people (Fabian et al., 2010). Based on a number of studies it is known that the growth of welfare in the developing countries leads to a higher reliance on private vehicles, while reducing the role of walking in transportation. (Fabian et al., 2010; Takamine, 2004) It is known that some people can deliberately choose walking as the main mode of transportation due to the financial limitations or the inability to drive (Fabian et al., 2010). Considering such factors, it is important to provide pedestrians with an adequate and accessible pedestrian infrastructure that would allow to secure their interests as walkers. The poor provision of pedestrian infrastructure creates obstacles for safe walking and can lead to jaywalking, or the situations of walking on roads that increases the risks of road traffic accidents with pedestrians (Lasmini & Indriastuti, 2010). Since the concept of accessibility describes such a design that considers the maximum range of potential users, the conditions under which pedestrians are unable to reach their target destination on foot is associated with poor accessibility.

The concept of accessibility can explain and demonstrate the way the publically and privately owned spaces should be designed in order to be accessible for all people. While talking about accessibility for all, it would be good to mention the term *disability* that is central to the concept of accessibility. This term describes a situation when the people are physically or mentally unable to do the things that people are normally able to do (Oxford Dictionary, 2020). A person who experiences a disability is physically unable to access some places and locations that are considered as accessible by the people who do not have disabilities. The infrastructural constraints existing within the environment surrounding the people with disabilities can put such individuals under a risk of exclusion from the normal rhythm of life. Disability should not be confused with the term *social exclusion*. Social exclusion describes a situation when individuals are blocked from integration into the society where they live based on unequal access to opportunities and resources that are accessible to more privileged social groups (Hine, 2020). It worth mentioning that physical and mental disabilities can be also among the reasons of social exclusion.

It worth mentioning that the concept of accessibility should not be seen only within the context of vulnerable groups; the ordinary groups of people can be also seen as "vulnerable" against the heavy road traffic. Despite the fact that the target group chosen for this research project is not seen as "vulnerable" in the traditional understanding of this term, this research accepts the position that considers both the pedestrians without disabilities and those who experience disabilities in relation to safety and accessibility. While the overhead pedestrian bridges usually lack facilities like escalators and elevators that ensure accessibility for vulnerable groups, they also provide relatively limited level of accessibility to the people who do not choose using them due to the physical efforts and the additional time required for using these facilities. The interviewees mentioned various reasons that make the overhead bridges less accessible to them compared to the

signalized zebra crossings. Almost all respondents expressed their desire to cross the roads in Baku at grade and do not spend additional physical efforts to use the overpasses and underpasses. Based on the existing empirical data, it is possible to conclude that the overhead pedestrian bridges can cause quite similar accessibility-based issues to both vulnerable and ordinary groups of people.

2.1.1 Social exclusion

The term *'social exclusion'* is used in various disciplines and contexts but in transport geography it is referred to as transport disadvantage and poor access to transport and services (Hine, 2020). Based on the definition, social exclusion can be interpreted as an inadequate access to certain locations that creates social inequalities and marginalizes one group in comparison to another.

In order to understand the key issues related to social exclusion in the context of the overpasses, it worth mentioning some of the categories of exclusion in transport defined by Church et al. (2000), which are the following: *physical exclusion, time-based exclusion, space exclusion and fear-based exclusion* (Hine, 2020). *Physical exclusion* refers to the cases when the designed infrastructure inhibits accessibility for groups with reduced mobility like the elderly, disabled people, parents with children or people loaded with heavy items (ibid.). In the context of this research, physical exclusion is seen as the most relevant category due to the additional physical efforts that are a part of using the overpasses. *Time-based exclusion* stands for cases when people with some extra duties like caring or parenting are limited on time thus highly dependent on the design of surroundings (ibid.). Since using overhead bridges is time-consuming, people can experience time-based exclusion that makes them reluctant to use these facilities (ibid.).

Fear-based exclusion refers to a case when vulnerable groups try to avoid going to some locations perceiving them as dangerous places. A number of studies state that the overhead pedestrian bridges are usually seem dangerous to women, especially in the evening time due to a potential of assaults from strangers and pick-pockets (ibid.). Based on a personal experience and some interviews, I can admit that a large number of pedestrian bridges lack security measures like the presence of security employees or CCTV that makes the fear quite a justified feeling in the evening time. Also, it worth mentioning reduced mobility groups that can avoid using overhead bridges based on a fear of getting physical injuries due to the absence of auxiliary equipment like escalators and elevators on the majority of overpasses. The last exclusion category related to this research is the *space exclusion* that describes the cases when vulnerable groups are discouraged from accessing some places due to the security and space management strategies applied by the authorities (ibid.). It is obvious that some locations that are designed without considering pedestrians in general will be even less accessible to vulnerable groups. The lack of adequate pedestrian infrastructure and a high reliance on private vehicles can result in space-based exclusion.

2.2 Pedestrian safety

The concept of pedestrian safety is another key aspect deserving attention. The overhead pedestrian bridges are being built to provide pedestrians with a safe route that allows them to cross the busy and high-speed highway roads without interaction with vehicles. Despite such a clear vision, it is highly important to rethink what pedestrian safety exactly stands for. For instance, according to Zegeer (2002), the overpasses are usually underused by the pedestrians who are usually ignoring such facilities if there is an opportunity to jaywalk. Also, the pedestrian bridges can become obstacles for the people with reduced mobility and lead to even higher safety concerns.

Nearly all people can be seen as pedestrians because walking as a mode of mobility is one of the most basic physical abilities which people are normally given by nature. Ensuring safe mobility for pedestrians through designing adequate pedestrian facilities is crucial for promoting walking as a mode of transportation. According to Cervero et al. (2017), creation of safe and active pedestrian environment is a cardinal feature of a vibrant, livable neighborhood. It is known that in order to provide pedestrian safety, it is important to create dedicated areas for pedestrians (where they will not be exposed to motorized traffic), reduce the speed limit and increase the awareness of both pedestrians and drivers in terms of what is called safe behavior on the roads (Obeng-Atuah, 2016; Amaoko et al., 2013; Damsere-Derry, 2010; Andrade et al., 2015; World Bank, 2018).

While talking about pedestrian safety it would be good to mention that the overpasses are facilities that are originally planned and designed with the idea of providing pedestrian safety (Retting et al., 2003; Sangphong & Siridhara, 2014). The general logic behind construction of overpasses or, in other cases, the underpasses is that pedestrians will get such a facility that will separate them from the busy road traffic while reducing the risk of road traffic fatalities with pedestrians. According to some studies, the overhead bridges have immediate effects on pedestrian safety in some countries while even having a great potential to reduce budget spending on healthcare due to the reduction of traffic accidents between vehicles and pedestrians. One study emphasizes that despite the high prices, the overhead bridges can pay off the money spent on their construction in several years based on reduction of budget spending on healthcare (Mohapatra, 2014). Also, it worth mentioning that the overhead pedestrian bridges are seen as the only solution for provision of pedestrian safety on high-speed highway roads where these facilities give people an opportunity to cross the roads safely (Andrade et al., 2015).

Based on the perspectives mentioned above, it would be difficult to deny the benefits from the overhead pedestrian bridges but there is something that is widely neglected by some designers and the advocates of grade-separated facilities. The construction of overhead pedestrian bridges, that are widely used in developing countries like Azerbaijan, is seen as a solution that provides pedestrians with safe havens for road crossing but the idea behind safety in this context is highly idealized and is way far from reality. For instance, according to the press secretary of the Main Police Department of Baku City Vagif Asadov, the number of road traffic accidents between pedestrians and cars constitutes 59% of all road traffic accidents in the city of Baku since the beginning of the year 2020, while the majority of these accidents occurred in the areas with grade-separated facilities like the underpasses and the overpasses (Sputnik, 2020).

2.2.1 Pedestrian safety and pedestrian infrastructure

While talking about pedestrian infrastructure or pedestrian-friendly infrastructure, the main concern of this research remains suggestion of at-grade facilities that have a huge potential to replace the grade-separated facilities like the overpasses and underpasses. Such infrastructure includes a combination of zebra crossings, road signals, refuge islands, road medians, low curbs, ramps, cycling lanes, wide sidewalks and narrow roads with a low speed limit. According to a number of publications (Zegeer, 2002; World Bank, 2018; Obeng-Atuah et al., 2016; Fabian et al., 2010; Pasha et al., 2015), such infrastructure ensures safety and inclusiveness and creates significant economic opportunities, while remaining a cheaper and a more effective alternative to grade-separated facilities. According to Amaoko et al. (2014), pedestrian safety can never be ensured without an adequate provision and maintenance of pedestrian infrastructure. Regarding the context of Baku, World Bank report (2018) states that the city has to improve its pedestrian and cyclist friendly infrastructure to make the urban environment more inclusive towards all pedestrians including women, children and people with reduced mobility.

From another perspective, it is important to mention that car ownership and the ability of driving remain the two key factors that create the main inequalities in the city and create the demand for a more pedestrian and cyclist-oriented development of the cities. As it was stated by Toole and Zimny (1995): *"the ability to walk or bicycle to a destination is critical to their [people who are either too old or too young to drive] freedom of mobility. Transportation planners and engineers therefore have the same level of responsibility to provide for the safety of bicyclists and pedestrians as they do for motorists.*" The same applies to the case of Baku, where pedestrian facilities look more like an attachment to road infrastructure than a matter of high priority. As it was emphasized by some of my respondents, the overhead bridges built in urban areas in Baku serve for the interests of drivers, not pedestrians because they create better conditions for driving and exclude pedestrians from the streets.

2.2.2 Pedestrian safety and pedestrian behavior

The number of road traffic incidents with pedestrian injuries and fatalities is alarmingly high in a number of developing countries including Azerbaijan. According to World Bank (2018), despite serious improvements in transport infrastructure in recent years, road safety remains a serious problem in Baku with a fatality rate around 200 people annually that includes many pedestrians. In order to better understand the underlying reasons and invisible issues leading to road traffic accidents, it is highly important to understand the behavior of people. This part of the research focuses on pedestrian behavior and tries to uncover through some key theories and concepts the main patterns that form such a behavior.

While talking about pedestrian behavior, it would be good to mention that it is usually shaped by a myriad of reasons that usually include demographics, time, distance and physical and mental conditions of pedestrians. It is evident that the decisions taken by pedestrians are usually determined by various conscious or unconscious factors that can be influenced by previous behavior, habits, the amount of awareness of risks and the influence of social norms (Räsänen, 2007; Yaoshan Xu et al., 2013; Holland and Hill,

2007; Shaaban et al., 2018). The expected-utility theory is known for its ability to explain the main reasons that shape pedestrian behavior in different situations. According to Bridge (2020) the expected-utility theory suggests that in spatial terms people tend to choose options that will potentially reduce the efforts and distances to purchase or consume goods. In the context of this research, this theory can be understood from the position of pedestrian preferences whether to use the overhead bridges or find alternative routes that would allow them to save time and energy. Such a weighted and rational decision-making is quite similar to the adaptations of the so-called dual-process model in publications by Fiske (1993) and Epstude and Roese (2011) where the authors state that humans tend to choose the most effortless scenarios due to their natural predisposition to do so.

On a contrary, other researchers believe that despite a significant influence of cognitive processes to the pedestrian behavior, in some cases the decisions taken by pedestrians can become the results of habits, reflections on the previous behavior or the imitations of group behavior (Yaoshan Xu et al., 2013). For instance, it was suggested that the level of conformity to road traffic-rules can be improved by educating young generations and through increasing awareness among people (Zhou et al., 2009). Also, some researchers found that some patterns of route choosing as well as road crossing can be determined by unconscious decisions such as in the case of the so-called desire lines or desire paths that are sometimes referred to as ‘urban hacking strategies’ (Foster & Newell, 2019; Kohlstedt, 2016). Desire paths can be interpreted as results of an inherited and often unconscious predisposition of people towards finding roads or tracks that would allow them to save time and energy. Such behavior is seen as a response and sometimes resistance to an inadequate design of the urban infrastructure and the way the people claim their piece from the already planned urban space.

3. Theoretical framework

The previous chapter introduced the two key concepts for this research – pedestrian accessibility and pedestrian safety which are thought to provide the reader with a broad understanding of the raised issue through the key aspects embedded into the observed concepts. This part of the research introduces the theoretical framework that was chosen to arrange the whole study on the pillars of theoretical thought that is free from the influence of my vision. Based on the issues raised in the previous chapter, such as the lack of access to certain locations due to their exclusive design and the importance of rethinking pedestrian safety in the context of developing countries, it is crucial to take a look into philosophical perspectives of other researchers and theorists that cover the issues related to the topics discussed earlier.

3.1 Same old mistakes

The high-scale economic and technological growth observed in the world after the World War II alongside the emergence of welfare states led to an unprecedented motorization of large cities and a drastic shift towards private car ownership. The policy makers began to embrace the high-scale development of road transport infrastructure with the implementation of unprecedented zoning strategies that were thought to connect each family house or community with the major roads. Such planning practices led to decades of urban sprawl around large urban centres and created a situation of a high reliance on private vehicles for transportation (Knowles, 2020; McCann, 2020). It worth mentioning that such urban design approaches started emerging before the World War II, in 1920s when some architects and theorists of that time were creating the concepts of the cities of future, that were thought to meet the demands of the high-scale industrial growth. For instance, Le Corbusier's *'radiant city'* model was thought to increase the speed of movement through motorways and railways that would connect job sites with residential areas consisting of large dormitory housing, built to accommodate hundreds of families (Dodson & Gleeson, 2009). Such a modernist approach was based on segregated land use with a deliberate separation of streets or the so-called *"traffic machines"* from residential, industrial and rural areas (ibid.).

Despite the domination of private vehicles for transportation throughout the previous decades, today the global planning trends have shifted towards mixed-use land development that is seen as the way to connect communities to the basic services and employment opportunities within their neighborhoods and to provide each area with accessible and safe facilities allowing people of all social groups to be able to use public transportation (McCann, 2020; ITDP, 2017; Cervero et al., 2017). Unfortunately, despite the huge investments in transportation sector in the last two decades, the land use practices in Baku are quite far from the emerging global trends. The interests of pedestrians and cyclists are neglected by the city authorities which coupled with poor provision of safe and accessible infrastructure creates numerous obstacles for non-motorized mobility.

3.2 New Urbanism

The new urbanism movement emerged in the 1990s as a response to modernist strategies of land use and zoning. It is important to say that the first works suggesting a shift towards community building and designing pedestrian-friendly environments date early 1960s with the book of Jane Jacobs called *'The Death and Life of Great American Cities'* where she suggested some approaches that eventually became basis ideas of new urbanism. The main suggestions of Jacobs were the following: *a) a good neighborhood serve for more than one economic function; b) it must have mostly short block on the grid; c) buildings must be of various ages; d) it should be densely populated* (McCann, 2020). The critics of new urbanism disagreed with some of the key ideas stating that the *community* which is seen as the basic unit for new urbanists can be oppressive and conservative and lead to violations of social norms in favor of conformity (ibid.). Other critics state that new urbanism as an approach is a product of western vision on the urban and regional development thus missing a deeper understanding of local knowledge that can be a victim of a *"successful"* strategy that worked somewhere in the west (ibid.). Despite existing criticism, the school of new urbanism offers quite fair solutions for correcting the

mistakes of the previous decades through a document called '*Charter of the New Urbanism'* that consists of 27 parts covering 3 main levels for change: the region (metropolis, city and town), the neighborhood (also the district and the corridor) and the block, the street and the building. The first page of the Charter is devoted to the main approaches representing the school of new urbanism where the authors clearly state that they advocate:

"the restructuring of public policy and development practices to support the following principles: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice" (Charter of New Urbanism, 2000).

Since the overhead pedestrian bridges are grade-separated facilities that divide the pedestrian zones from the traffic roads, they do not fit the one of the basic requirements of new urbanism calling for neighborhoods diverse in use. As it was discussed earlier in this research, the construction of the overhead pedestrian bridges can be interpreted as the reaction of the urban planners in Baku towards growing motorization of the city. A high role of the private vehicles in the city's existing transportation system creates a demand for separation of pedestrian infrastructure from the high-speed highways and city roads for ensuring pedestrian safety. As it was mentioned earlier, such a design is strongly associated with poor accessibility for pedestrians and cyclists and gives a higher priority to private vehicles in traffic. According to Cervero et al. (2017), shifting the priority from cars to public transport and non-motorized modes of transportation like walking and cycling can significantly increase gains for all social groups. The authors believe that such a change can reduce car dependency that becomes a highly-important objective in the situation of high-scale motorization in developing counties (ibid.). *Transit-oriented development (TOD)* is seen as a strategy that has a great potential for implementation of such reforms in both developed and developing countries (ibid.).

3.3 Transit-oriented development (TOD)

To continue this discussion, it would be good to talk about transit-oriented development – the strategy that acts as the one of the pillars of new urbanism and suggests practical solutions for improvement of urban spaces and making them pedestrian-friendly and accessible for all groups of people by reducing the role of private cars in the cities. Generally, the advocates of TOD suggest walking as the main mode of transportation, while introducing mixed-use development as the primary way to slow down urban sprawl that is seen incompatible for creation of densely-populated and compact communities (ITDP, 2017). The proponents of TOD offer shifting from car-oriented growth towards a smart development of transportation infrastructure that can reduce the amount of land required for highways and freeways through a higher reliance on public transport. In conditions of the looming climate change, the demand for different approaches that would allow to significantly reduce the carbon emissions from private cars and battle air pollution tends to rise (Cervero et al., 2017). It is known that the countries in the Global South seem the most vulnerable to environmental issues created by transport: more the nation becomes wealthier, more people have financial capabilities for buying private vehicles. Without an appropriate policy for diversifying the modes of transportation,

people in the emerging economies will tend to buy their own cars, which can lead to air pollution, problems with public health and increase the risks of safety.

In order to reduce such risks, the Institution for Transportation and Development Policy (ITDP) adopted standards of TOD in 2013 that included 8 suggestions for designing pedestrian-friendly and accessible communities with rapid and inclusive transit for all people (ibid.). The TOD standards introduced by the ITDP are the following:

- ***Walking***: designing the urban areas in a way that allows people to access different activities on a walking distance in conditions of ensured pedestrian safety

- ***Cycling***: creating such infrastructure that would turn cycling to a self-sufficient mode of transportation

- ***Connectivity***: creating dense streets, making them appropriate for walking and cycling

- ***Transit service***: high quality public transportation system with stations located on a walking distance

- ***Mixed land uses***: creating diverse areas that facilitate the access to various activities by reducing distances to them

- ***Density***: housing and employment located on a walking distance to transit

- ***Compactness***: tackling urban sprawl by concentrating development within the borders of the already used land

- ***Shifting***: reducing the land devoted to driveways and parking

As it is seen from the standards, reducing reliance on private vehicles through improving conditions for walking and cycling as well as enhancing public transportation are among the central ideas. Based on the standards of TOD it becomes quite understandable that the current strategies used in Baku are far away from the global trends. The construction of the grade-separated facilities like the overhead pedestrian bridges are thought to ensure pedestrian safety and can be associated with rapidly growing motorization in the city of Baku. The existing trends in the transportation sector of Baku demonstrate that the traffic planners think to reduce traffic congestion and increase speeds of the traffic by widening the roads and adding extra lanes. Such road widening practices are usually conducted at the price of pedestrian sidewalks and the green lines. Generally, this strategy is seen ineffective based on the so-called *'Braess' paradox'* that states that adding more roads to the congested road networks can slow down the traffic flow (Bagloee et al., 2019) Also, as it is known from the so-called *'Lewis-Mogridge position'*, more roads are associated with more car traffic (Szymalski, 2016) According to this knowledge, it becomes evident that increasing the capacity of the road should be seen not through increasing the space for private vehicles but through diversifying the use of the road by different modes of transportation (Figure 5). Moreover, it is known that adding more lanes to the roads can lead to the so-called *'bottleneck effect'* (Figure 4)– the term that stands for a situation when the car flow from a multilane freeway reaches a narrower city road, thus causing traffic jams (Yuan et al., 2014). It is understandable that it is impossible to make all the roads in the city of the same width, because it can lead to destruction of historically notable areas of the city. Unfortunately, such cases are quite well-known in the modern history of Baku. For instance, a neighborhood called *Sovetsky* was demolished in order

to construct a huge Central Park, surrounded by a multilane highway that connects the city centre with some densely populated areas on the other side of the city (Valiyev & Wallwork, 2019).

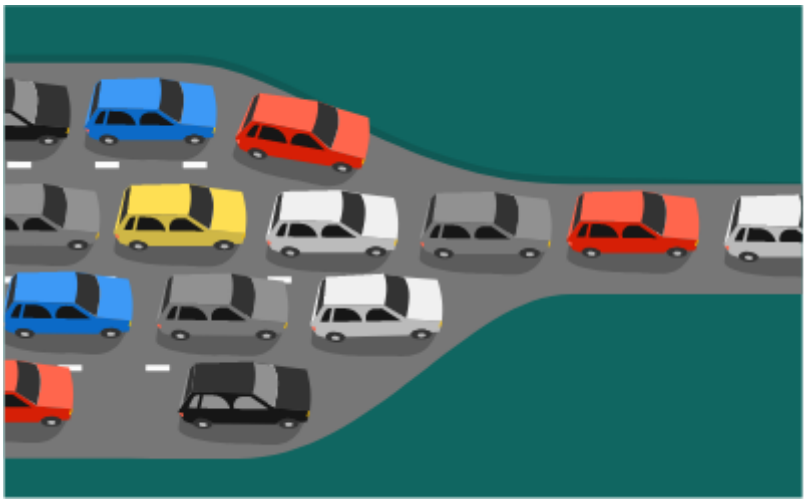


Figure 4. Bottleneck effect in road traffic (Brilliant.org, 2019).

Among the most successful examples of TOD, the case of Hammarby Sjöstad in Stockholm deserves a special attention. Once a brownfield area, the Sjöstad became one of the most successful urban regeneration projects for variety of components among which we can outline the tram line crossing the area through 3 accessible stations, separate lanes for private vehicles and bus transport, cycling lanes, wide sidewalks and a number of pedestrian zebra crossings through the roads that are helpful for traffic calming (Cervero et al., 2017). Other successful cases in Stockholm alone like Stockholm Royal Seaport project and Hagastaden with Torsplan, can show the role of good access to public transportation and of the mixed land use for economic growth. According to World Bank (2018), the redevelopment of once successfully used Baku suburban rail that involves all densely populated suburbs of the city across the Absheron Peninsula can create a good potential for TOD.

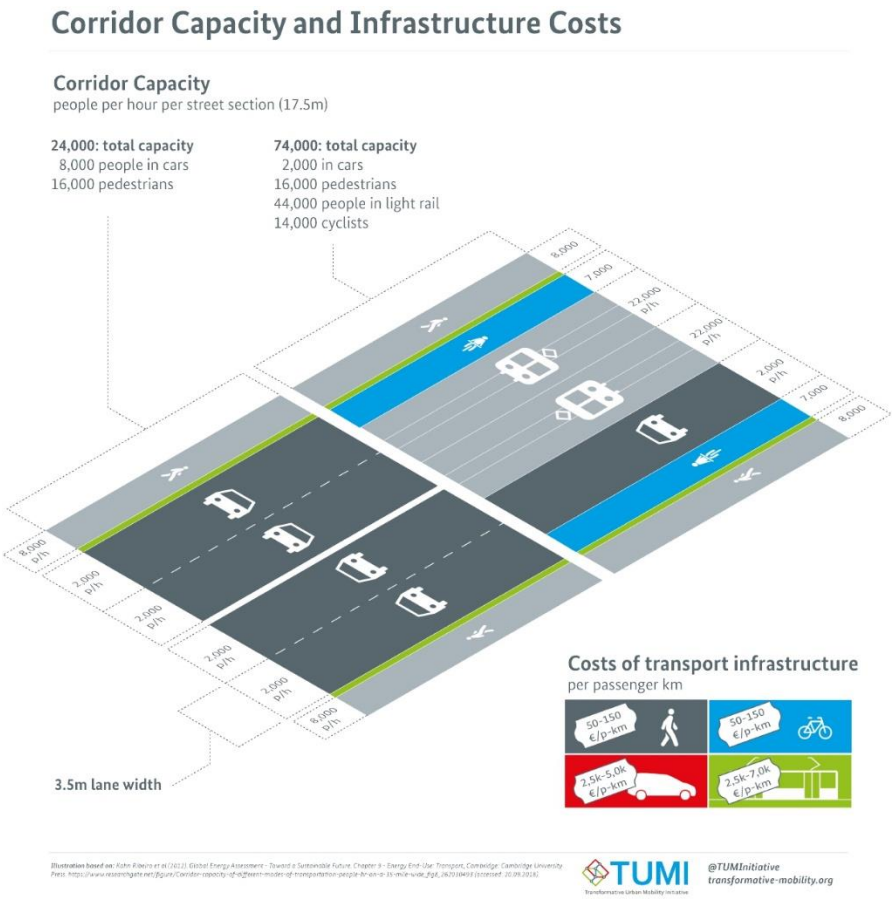
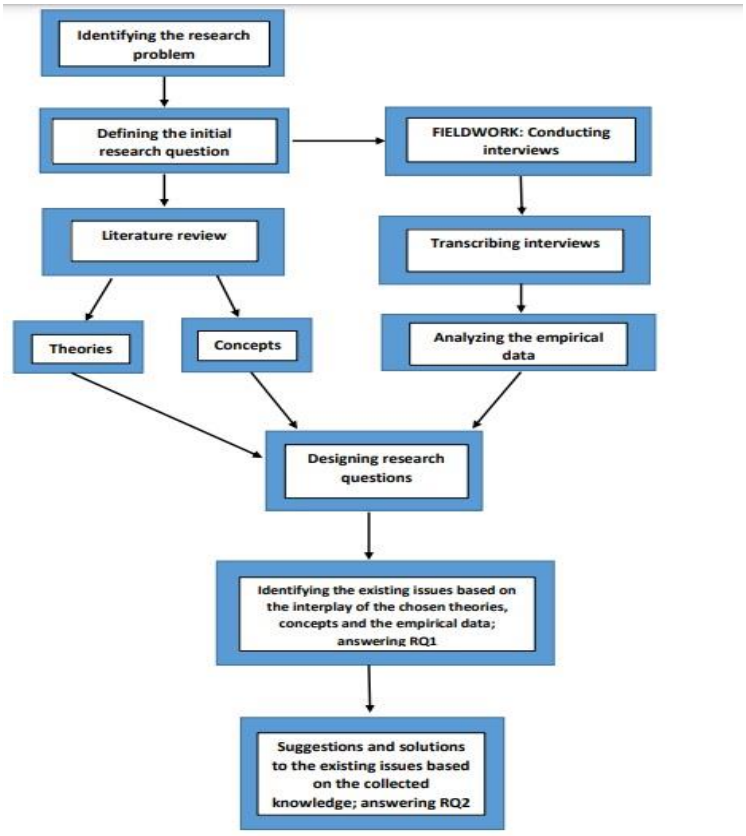


Figure 5. Passenger capacity of different transportation modes (corridor capacity) (TUMI, 2019)

4. Methodology and research methods

This chapter will discuss the methodology and the research methods that were chosen for this research. Methodology is a set of methods and principles used to perform a certain activity, or in this case, to conduct a research (Oxford Learner's Dictionaries, 2014). Some subchapters will be devoted to how the research methods and the research questions were developed for this study, and some other parts will discuss the role of the researcher in the research field and what are the main ethical considerations important for the research process. One separate section of this chapter will discuss the underpinning ontological and epistemological assumptions that shaped the research problem and helped to develop the main research questions for this study.



Graph 1. The main steps of this research project. Source: created by author.

4.1 Research methods

Since this research was designed to understand the way people perceive the overhead pedestrian bridges and to find out whether they use them or not, I decided to apply qualitative research methods for my study. The qualitative method of research is based on open-ended or semi-structured interviews and gives the respondent enough time to answer the given questions based on a mutual sense of trust (Bryman, 2013). The strategy chosen for this research was more similar to the semi-structured interviews. The interviews consisted of the two main parts: the survey and the main interviews that were conducted both face-to-face or online. First it was planned to conduct all the interviews face-to-face, but the negative influence of the COVID-19 pandemic pushed me to reconsider my initial strategy and to prepare myself to online interviews both emotionally and technically.

The target group chosen for the interviews were non-married young individuals in the age range between 18 and 30 years old without any disabilities. This was done due to a number of factors. First, according to the read literature, young pedestrians and especially males, tend to violate the traffic rules more than other demographic groups (Zhou et al., 2009, Andrade et al., 2015). Second, due to the poor provision of pedestrian facilities in Baku, the people with disabilities are not able to move independently and generally tend not to go out. This target group is a subject to a separate research. Third, my choice was defined by the fact that Azerbaijan is the country with a predominantly young population

(State Statistical Committee, 2020, p. 20). Fourth, there is a research gap in understanding of how young people behave while facing the overhead pedestrian bridges (based on my literature review).

The research process was quite long (from February to mid-August) because of the pandemic but this also made me familiar with a number of young experts, researchers and bloggers from Baku who act as proponents of the principles of new urbanism and regularly break the voice with high quality content about the existing issues in the transportation sector and the way the land is used and managed.

4.1.1 Research design

The research design chosen for this research initially was based on open-ended qualitative interviews that were thought to provide me with the actual opinions of my respondents regarding the main questions that I had. It was planned that the beliefs and the actual quotes of people would prevail compared to the numbers of patterns that could be possibly found in the interviews. After a brief literature review, I have realized that in order to conduct such a research I had to focus on certain overhead pedestrian bridges and limit my work to a certain number of such objects. This was not matching my desire to understand what generally makes some people to use the overhead bridges and others to avoid using them. A research that would be tied to certain locations would show me only the local picture and would not allow me to examine the studied phenomenon through the lens of various cases. It was crucial to see a wider picture in order to avoid biased conclusions that could be challenged by perspectives of those people who, for instance, have to use the overhead bridges due to the factors that could be poorly voiced or given a lower consideration. Also, the reviewed literature demonstrated that the existing research on the overhead bridges is usually tied to quantitative methods or to a combination of qualitative and quantitative methods. This factor made me find a balanced solution through the semi-structured interviews that could provide me with some means of statistical data as well as with the actual quotes, beliefs and the patterns that could be found from the transcribed audio recordings. I decided to combine a short survey with open-ended interviews in order to provide my respondents with the possibility to explain their answers in the survey and to add more perspectives that could be valuable for finding patterns.

Given the quite short time for conducting a fieldwork for a Master's thesis (around 6 weeks), and the financial limitations that I had for my trip to Baku, it was highly important for me to finish with the interviews by late March. Also, conducting a gender fair research was one of the most important objectives for me but I had faced some issues in setting up the exact dates and time for the interviews with females. This process was combined with a large number of changes in the schedule and switching to other potential respondents in case if the chosen person seemed reluctant to meet for an interview several times. Honestly, these changes were due to the fact that the majority of the chosen respondents were occupied and it was my duty as a researcher to be as flexible as I could. Also, such issues were strongly connected to the growing concerns regarding the COVID-19 pandemic in the society and the government of Azerbaijan initially decided to limit the working time of all cafes and coffee houses until 15:00 that was amid working time and

some people could not come to the interviews (Banker.az, 2020). I decided to find online recording programs and interview people online.

It would be good to mention, that the decision to interview people online was taken in mid-March when I also realized that I will have at least one more month in Baku due to the pandemic and the lockdown. It became easier to schedule interviews but the quality of the recordings was highly dependent on the quality of the internet connection on the both sides (me and the respondent). It worth mentioning that the originally chosen research design was quite successful because it would be impossible to meet random people near the overhead bridges and invite them for an interview amid the lockdown. The fact that I did not choose certain overhead bridges for my research, helped me to conduct my interviews mostly based on the previous experiences of my respondents. This method was quite adaptable with the *snowball sampling* that was originally chosen as the way to invite people for the interviews. As a result, since my research was not connected to some certain overhead bridges, I had managed to build a general picture about the use of these facilities in Baku and was able to adapt my work to the realities of the lockdown.

Based on the aforementioned, it becomes obvious that the research design chosen for this research is normative in its nature. I was questioning my respondents about the present state of things with the aim to understand the studied phenomenon through analyzing their thoughts and to introduce a way for improvement based on policies implemented in other contexts (Stanford Encyclopedia of Philosophy, 2018; Wikipedia, 2009).

4.1.2 Face-to-face and online interviews

As it was mentioned earlier, the interviewing process consisted of the two main parts: the survey that consisted of 10 questions with 4 options to choose marked as ‘A’, ‘B’, ‘C’ and ‘D’ (Appendix I) and the open-ended interviews of twenty to forty minutes long. The survey that was written in two languages (Azerbaijani and Russian depending on the respondent’s language preferences) was sent to the respondents prior to the interview in order to make the respondent familiar with the topic of the research and to help me to build an overall picture of the respondent’s thoughts. Considering the fact that I am a bilingual Azerbaijani able to speak the both Azerbaijani and Russian languages, it was quite easy for me to discuss my research topic with the people that agreed to be my respondents. It worth mentioning, that it was highly important to find a unique approach to each individual as well as to ensure myself that I am not asking questions that reveal my personal opinion and beliefs to the respondents. The respondents were allowed to make multiple choices in the survey and were given the opportunity to interpret their choices in the main interview. Quite a wide range of issues and concepts were discussed with each respondent including accessibility of the pedestrian overhead bridges, pedestrian safety, the extent to what they consider Baku as a walkable city and what is their opinion about the existing transportation system.

Overall 30 interviews were conducted: 19 face-to-face interviews and 11 online through Facebook or Skype calls. Since, one of the most important objectives for me was to ensure gender equality, I have conducted 15 interviews with males and 15 with females. Since, it was quite tough to find female respondents, especially amid the COVID-19 outbreak, I decided to interview some of my female friends, while the absolute majority of female

respondents (10 people) were interviewed online. The face-to-face interviews were recorded on my mobile phone's audio recorder, while the online interviews were recorded using online voice recording services. Since, the duration of the interviews was quite long and the audio files recorded online could be quite large and sometimes difficult to acquire from the website providing the recording service, I was using the voice recorder on my phone as a back-up recorder that I was putting close to the speakers of my laptop. Despite a significantly lower quality of recording, this method helped me to save several interviews.

4.1.3 Transcribing and analyzing interviews

The recorded interviews were transcribed by hand into a large notebook. The retrieved data was color and symbol coded into several groups that were defined by the name of the found pattern. The patterns were identified and divided into the following groups: *"Suggestions", "The culture of car ownership", "Perspectives regarding people with reduced mobility", "Natural behavior", "Barriers and fines", "Costs and maintenance", "Safety and responsibility", "Provided facilities", and "Jaywalking vs using the overpasses"*. The key ideas and quotes were transferred into tables created on computer that also allowed me to effectively count the matching patterns and create some statistical data to demonstrate and discuss in the discussion chapter of this research. Also, it helped me to identify the key quotes and count the number of respondents that mentioned the matching ideas. Moreover, it was helpful to identify the main gender-related differences in the responses.

Additional statistical data was created through the survey that was offered to the interviewees before the main interview. The survey was used in this research to make the respondents familiar to the studied phenomenon and to structure the main interview that was by the half consisting of the discussion of survey questions. The survey data was coded based on the 'A', 'B', 'C' and 'D' responses, while the questions that were answered to by multiple choices were divided into a separate group.

4.1.4 Entering the research field

My initial goal was to travel to Baku and ask people through the interviews about *how do they perceive the overpasses* and *what do they see as the main reason for the city authorities to construct them*. I had a number of discussions with some random people that were not among my respondents about the overhead pedestrian bridges, and, generally, it is seen that people consider these facilities important for providing pedestrian safety. Baku is an incredibly motorized city and I think that this factor influenced the responses more than anything else. Sometimes people were not imagining an urban form where the cars are not a dominant mode of transportation.

It is important to mention that the research questions for this research were not chosen but were somehow shaped by the empirical data that was obtained through the interviews. I entered my fieldwork project wondering *what my respondents think about the role of overhead pedestrian bridges in the city of Baku* and *what they see as an alternative way for ensuring pedestrian safety*. Answering these two research questions were thought to

give a deeper insight into the existing situation with pedestrian accessibility, mobility and pedestrian safety. It worth mentioning that I have started my fieldwork with a certain level of bias and preconceptions but was introduced (by my respondents) to a wider range of cases showing huge benefits from the overhead pedestrian bridges as facilities ensuring pedestrian safety. The fieldwork for this research project provided me with an extensive knowledge that was based on quite a large variety of examples that somewhat challenged my initial beliefs. Despite the huge variety of opinions regarding the raised problem, the absolute majority of my respondents expressed the visions matching my initial opinion on how the pedestrian infrastructure should be organized within the city and its neighborhoods. For instance, the interviewees expressed their desire of being able to cross the roads at grade, without using some extra energy and time on ascending and descending activities required for using the grade-separated facilities.

4.2 A reflexive researcher

Despite my opinion and some preconceptions about the role of the overhead pedestrian bridges in the urban environment, it was my duty as a researcher to give the voice to the people and let them express what they exactly think about these pedestrian facilities. Since, some of the respondents were my good friends, it was highly important not to reveal my opinion about the overhead pedestrian bridges and to choose such questions that would not make my vision explicit to them. The interviewees were the main meaning makers who were asked to share their vision on the research problem (Warren, 2001, p. 83).

I have been living in Baku for a decade (with a gap for my studies in Stockholm) and have my personal beliefs and impressions about the city itself and the issues that exist. It worth mentioning that since some of the respondents were familiar to me and my worldviews, there is some possibility that they could guess what was my own opinion. Despite this, I was ensuring neutrality from my side and was giving enough time to my respondents to express their opinions in order not to force data (Bryman, 2013, p. 470). It is also important to state, that since the research problem for this study is strongly related to the everyday experiences of people, some visions can be affected by negative memories and some can be influenced by quite positive experiences (Charmaz, 2001). My role as a researcher was to avoid questions supporting my personal vision in case the opinion of my respondents does not match my views.

It would be good to acknowledge, that despite my attempts of reflexivity, it is quite challenging to remain unbiased, especially in the context of a normative research. Thanks to my respondents, some of the cases helped me to see that the overhead pedestrian bridges can be crucial in certain urban forms. It was the influence of the told stories that helped me to understand the situational differences that can strongly challenge my vision. The researcher has to be ready to grasp and accept some perspectives that can differ from his/her preconceptions and be able to avoid bias while interpreting somebody's opinion.

4.3 Ethical considerations

Since the interviews were thought to become the main source of the collected empirical data for this research, I had to ensure myself that all respondents are clearly informed about the research that I am conducting and the way the interviews will be used for this study. According to the main guidelines for a good research practice, it is highly important to ensure informed consent while conducting a qualitative research (Vetenskapsrådet, 2017). Each interviewee was asked for a permission to record his/her voice and nobody was against to be recorded on my phone. All respondents were ensured that the voice recordings will be deleted from all my devices once I complete this research. Also, the respondents were guaranteed that their quotes will be used in this research only in a form of full anonymity. According to Charmaz (2006, p. 27), ensuring full anonymity of the interviewees is crucial while using qualitative research methods.

All the interviews, both face-to-face and online, were conducted with a sense of mutual trust between me – the researcher and the respondents (Warren, 2001). While planning face-to-face interviews, I was deliberately choosing cozy and comfortable places that were located in the most accessible locations in the city (Bryman, 2013). All interviews started with a short introduction of myself, my education field and a brief overview of the research topic. Since, all my respondents were highly educated (in the context of Azerbaijan it means at least a bachelor's degree), while some of them also used to conduct qualitative research through the qualitative interviews, it was quite easy to ensure mutual trust and ask for a permission to be recorded. The most challenging ethical concern for a researcher in such conditions could be the matter of time and scheduling that was managed in quite an organized and fine manner, while giving a priority to the time-related concerns of the respondents (Vetenskapsrådet, 2017). The exactly same ethical manners were followed while scheduling and conducting the online interviews.

4.4 Ontology and epistemology

Ontology is usually defined as the study of existence or, in other words, the way we question reality (). By writing this research I wanted to find the "truth" through understanding what makes different people act differently in case they face overhead pedestrian bridges. This could help to understand the role of pedestrian bridges in the urban realm, and to find out the "truth" making some people use these facilities and others avoid them, while trying to find alternative ways to cross the road. It may seem that naturally the topic and the researched phenomenon are sitting upon a *realistic* stance due to the possibility to measure the possible effects of the overhead bridges on people and the urban environment using quantitative measurements (Moon & Blackman, 2017). On the contrary, since this research is built on the meanings given to the phenomenon by the people based on their experiences, I would say that this research embraces a more *relativistic* viewpoint (ibid.).

Through *epistemology* we demonstrate how the knowledge about the existence was created or obtained. The data retrieved for this research was taken in retrospective to the actual experiences of using the overhead bridges. This means that the collected data acts as a secondary knowledge and exists in the human memory in combination with biases, beliefs and preconceptions. At the same time, it is important to state that the collected

knowledge about the overhead bridges is the result of the actual experiences of using these facilities, meaning that the knowledge is created through the interplay of subject and object, while the subject constructs the reality of the object (ibid.). Based on the aforementioned, it is evident that the research takes a *constructionist* epistemology that is characterized as an epistemological premise that is based on the belief that *"the human mind gives meaning and order to that reality to which it is responding"* (Balbi, 2008).

4.5 Conclusions and limitations

This chapter was aiming to give a deeper insight into the chosen normative research design. The initial research questions that were designed based on a brief literature review allowed me to start my fieldwork with a clear understanding of my own beliefs and views that I should not transfer to the actual data collection process. My first goal was to check whether the opinions of pedestrians in Baku match my own beliefs and knowledge about the overhead pedestrian bridges and their role in the urban environment. The empirical data that was collected through the semi-structured qualitative interviews assisted me in indicating the main research questions that were chosen in retrospective to the fieldwork. Since this study is normative in its nature, all the information that was found about *how the things are* requires a clear demonstration of how the things should be (Arteology (uiah.fi), 2007). This research design has some limitations that have to be demonstrated to the reader in order to make the relation between the methodology and the collected data more explicit to the reader.

My presence in the city of Baku for conducting this research was highly important in order to be able to see the main issues that exist in the transportation sector of the city. As it was mentioned earlier in this research, the process of construction of overhead pedestrian bridges can correlate with other factors such as growing motorization, and it could be quite difficult to make such initial assumptions while being away from the research area. My familiarity to the city helped me to better express the local context in the questions designed for the interviews. Also, the fact that I had quite strong social links in the city made it way easier for me to find respondents through snowball sampling. This sampling method is known as purposive (Payne & Payne, 2004, p. 210), meaning that the respondents are chosen for a purpose, making this fact the first limitation of the chosen methodology. This research could be benefitted by random sampling technique which is based on finding respondents randomly, usually outside if the data is collected on the field.

Also, it would be good to mention that the chosen number of respondents is quite short for making an overarching generalization, but it is enough to find out the existing state of things. Here, I would admit that the chosen methodology could be benefitted by a wider representation. In order to partly overcome this limitation, I will use the survey conducted by *Cities for People (city4people.az)* website as an extra source of data. The results of the survey that was collecting data based on the citizens' opinions on the transportation system in Baku were published amid the time I was conducting this research (on July 6, 2020), thus they can be used as a valid knowledge in the context of this research.

As it was mentioned earlier in this chapter, the data for this research was collected only from the non-married young people without any disabilities. This was done deliberately

based on a number of factors that were indicated earlier in this research. I see it important to introduce this fact as the third main limitation of my methodology and I think that the data collected for this study could be expanded by the vulnerable mobility groups. This limitation was partly reduced through asking my respondents about their opinion about the extent to what the vulnerable groups living in Baku could be able to use the overhead pedestrian bridges.

Finally, I would indicate the lack of the quantitative data as the last limitation of this research methodology. Originally, I was eager to find statistical data for measuring the effects of the overhead bridges in some locations of Baku through conducting spatial analyses using the ArcMap software. Unfortunately, it was extremely tough to get statistical data regarding transportation from the authorities due to some bureaucratic issues. Since the time for this research as well as the manpower were limited (only me), I decided to go further with my qualitative data and focus on the empirical data obtained from the interviews.

5. Results

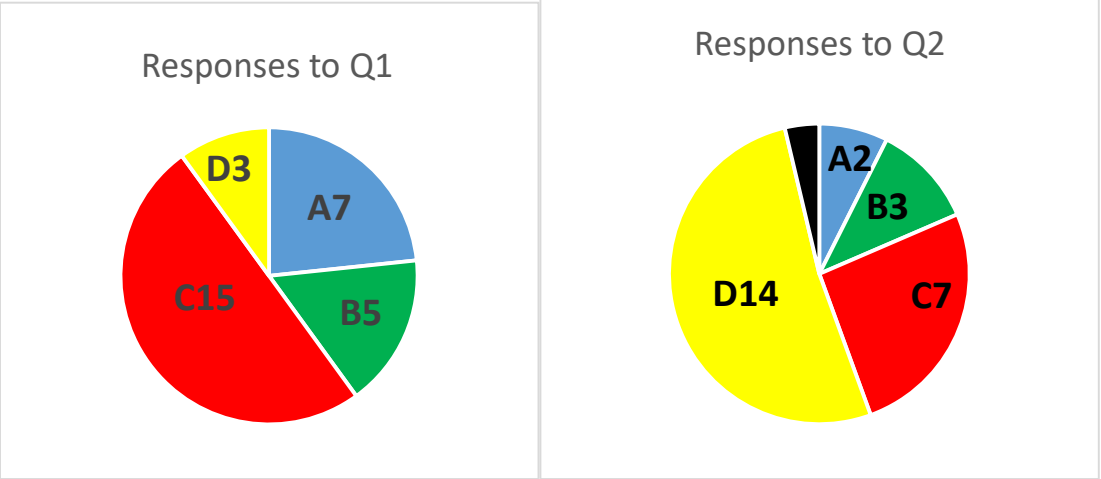
This chapter is devoted to the results of this research. The empirical data collected for this study consists of the three main parts: survey data, coded patterns from the interviews and some meaningful quotes from the respondents. This section of the research will be divided between the survey data and the coded data and the quotes will be used as the additional piece of information that will tie this project to the traditions of qualitative research. Generally, as it can be seen from the results, the methodology designed for this study has borrowed some elements of quantitative research traditions, while strongly relying on the power of the meanings given by the interviewees to the examined topic.

Each part of this chapter will be devoted to a certain pattern or groups of patterns that are strongly linked between each other. The quotes will be introduced with the compliance to the requirements of anonymity that were guaranteed to the respondents. This requirement will be met by using initials instead of the actual names. The first two letters in identifications of respondents stand for the name and surname respectively, while the third letter indicates gender of the respondent (‘F’ for females and ‘M’ for males). The gender-related differences in the responses will be mentioned in this chapter in case they showcase a significant pattern that is based upon underlying social issues that deserve the attention of readers.

The first section of this chapter is devoted to the major findings from the survey that was offered to the respondents prior to the main interview. The survey will be introduced in the Appendix I in the final part of this research project. The following sections will be devoted to the identified patterns, and the quotes will be used in the beginning of each section in order to showcase some samples from the interviews related to the studied context.

5.1 Survey data

As it is seen from the Appendix I, the survey for this research consisted of ten questions with four options offered to the respondents. The first question will be broadly discussed in this section in order to show the approach that was used to analyze the responses. Considering an extremely high number of words required for discussing each option in all ten questions, it was decided to offer the readers to use the Appendices I and III to follow the questions and the options.



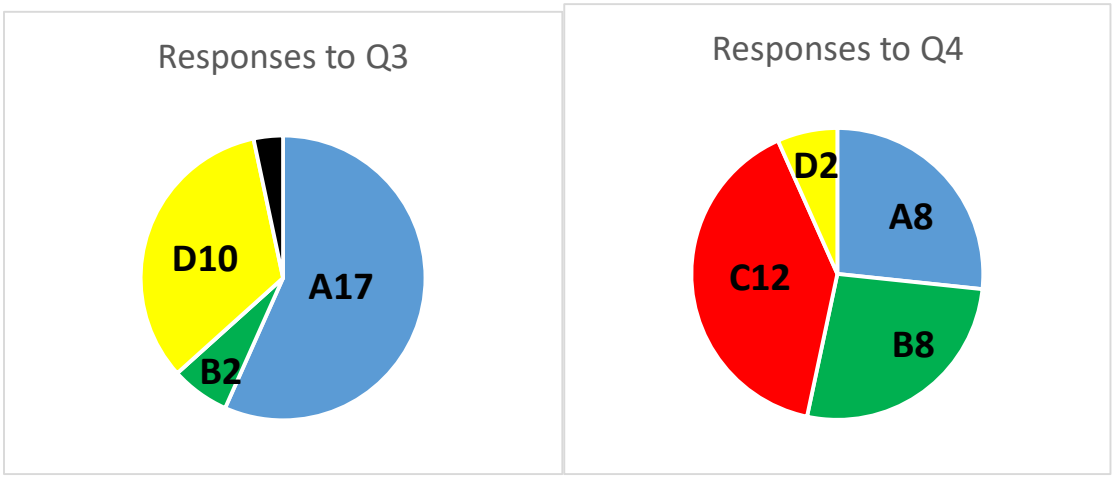
Graph 2. Responses to the survey question 1. Source: designed by author.

Graph 3. Responses to the survey question 2. One respondent chose multiple options (black). Source: designed by author.

The first survey question (Q1) was simply asking: *"Do you use the overhead pedestrian bridges to cross the road?"*. 15 respondents chose the option 'C' stating *"I use them any time it seems the best way to cross the road"*, while 7 people responded 'A' standing for *"I always use the overhead bridges"*. Also, 5 people responded 'B' *"I try to avoid using them"*, while 3 people answered 'D' stating *"I usually use them but first I try to find an alternative way e.g. jaywalking"*. These results show that the absolute majority of my respondents (answers 'A' and 'C') use the overhead bridges and acknowledge the safety issues existing at some parts of the city. Considering the fact that my respondents were young people, these results can be explained by the physical ability of this segment to move up to the overpass and then descend from it. Also, it can be explained by the reputational perception of the respondents who were also stating that it is important for them to be citizens that obey traffic rules (Zhou et al., 2009). The remaining 8 people ('B' and 'D') stated that they do not like using overhead pedestrian bridges based on different factors, while the main one was about the efforts required for ascending and descending while using these facilities. No significant gender differences were found in the responses.

Question number two (Q2) that was asking: *"What could influence your decision not to use the overpasses?"* have demonstrated significant gender-based differences. The option 'A' was chosen by 2 respondents and both were males, while option 'C' was chosen 7

times, six out of which are male respondents. These results confirm findings from previous studies (Zhou et al., 2009, Andrade et al., 2015), showing that young males are more likely to take risky decisions while crossing the roads. Time-based factors ('B') could influence the decisions of just 3 people (1 female, 2 males); the absolute majority of 14 people stated that the long distance to the facility ('D') could influence their decision to avoid using the overpass, and that matches the results from a number of studies (Mutto et al., 2002; Obeng-Atuah, 2016; Hongliu Li et al., 2019). 3 people did not answer this question, while 1 individual (female) chose multiple options ('A', 'C').



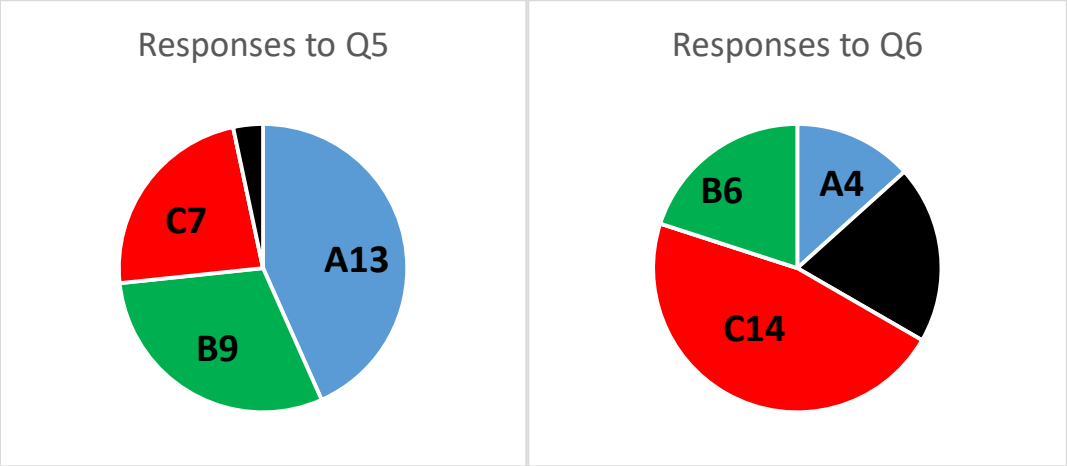
Graph 4. Responses to the survey question 3. One respondent chose multiple options (black). Source: designed by author.

Graph 5. Responses to the survey question 4. Source: designed by author.

The third question (Q3), that was asking: *"What are the main factors influencing your decision to use the overhead bridges?"* demonstrated a significant influence of the high motorization level in Baku on people's choices. A vast majority of 17 people stated that intensive road traffic is the main factor ('A'). Another large group ('D') that involved 10 people stated that they would use the overhead bridges whatever the case is. This result is strongly related to the one in the first question and can be explained by the same factors (e.g. reputation perception). Also, it could be also interpreted as the high safety concern that people have due to the high speed limits combined with wide roads and high motorization. 2 people mentioned fines, barriers and fences along the roads ('B') as the main factor that shapes their behavior. This result shows that the awareness of the possible risks of jaywalking is way more effective than spatial and legal enforcements. This interpretation can be also justified by the fact that all my respondents were well-educated people and were quite knowledgeable about traffic safety. Nobody chose option 'C', while one person (female) chose multiple options ('A', 'B').

The fourth question (Q4) was: *"Imagine a situation when you have a nice opportunity to jaywalk (e.g. huge gap between cars, low collision risks). What would be your decision?"*.

The results again demonstrated the gender-related differences shown in the second question. 8 individuals (1 female, 7 males) chose 'B', while other 8 people concluded on the option 'A' (6 females, 1 male). The majority of 12 people stated that time-related limitations would influence their decision to jaywalk. This result shows that quite a large group of people sees the use of overhead bridges as time-consuming. Only 2 people chose 'D'.



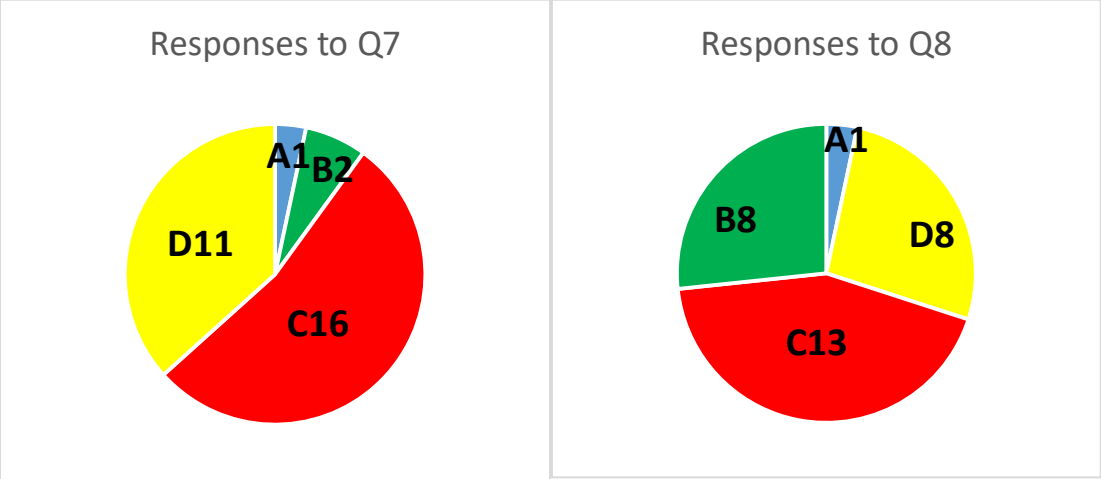
Graph 6. Responses to the survey question 5. One respondent chose multiple options (black). Source: designed by author.

Graph 7. Responses to the survey question 6. Six respondents chose multiple options (black). Source: designed by author.

The question number five (Q5) was asking: *"What would you call the main reason for the construction of overhead bridges?"*. The majority of 13 respondents chose 'A' and expressed their belief that the overhead bridges are designed for safety. 9 respondents chose 'B' stating that these facilities are the results of errors in traffic planning, while 7 people interpreted it as the result of the high motorization level. It worth mentioning, that based on the Chapters 2 and 3, I would argue that these two answers are linked to a certain extent. Also, quite a large number of respondents (19) outlined the existing issues in public transportation in the interviews. Nobody responded 'D' and just 1 individual decided not to answer, stating that there are quite noticeable planning issues in the city and calling for a comprehensive approach. Considering the fact that Baku lacks a strategic plan (Jafarli, 2018), this response makes sense.

The question number six (Q6) was a bit creative and was asking the following: *"Imagine that you have a super power to change the existing traffic infrastructure. What would you do?"*. A majority of 14 people (7 females, 7 males) answered 'C' and expressed their support towards signalized zebra crossings with medians or refuge islands (referred to as "3 in 1" later in this research). This result demonstrates a huge demand for at-grade crossing facilities in the city of Baku. The option 'B' was chosen by 6 individuals. Only 4 people stated that they would build more overpasses and underpasses. Surprisingly, I found some people that do not trust in signalized zebra crossings and, honestly, there are

some reasons for such belief. Some studies report aggressive driver behavior even close to zebra crossings (Hirun, 2016; World Bank, 2018). The rest of the respondents (6 individuals (2 females, 4 males)) chose multiple options, expressing their belief in wide roads for cars, or a combination of the "3 in 1" with grade-separated facilities, or calling for a comprehensive planning.



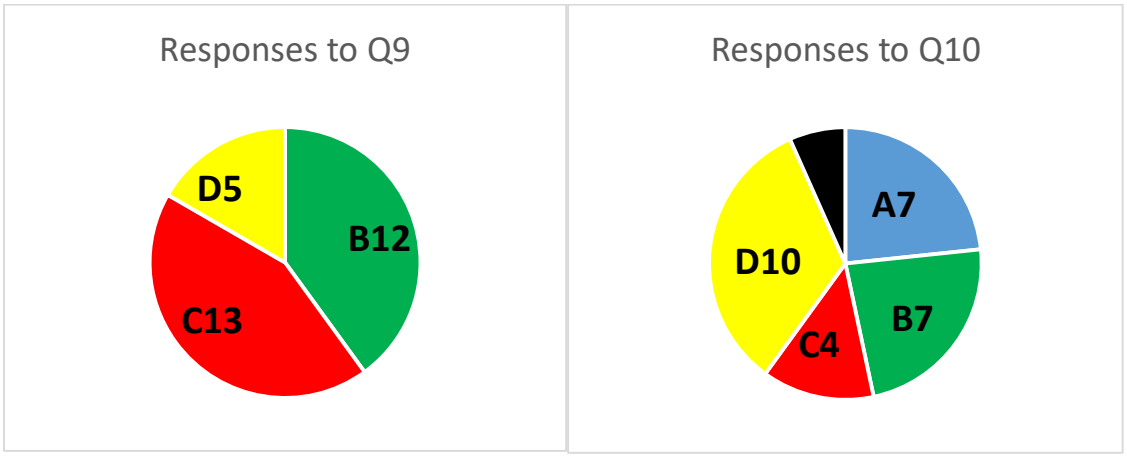
Graph 8. Responses to the survey question 7. Source: designed by author.

Graph 9. Responses to the survey question 8. Source: designed by author.

The seven's question (Q7) was asking: *"To what extent do you see Baku as an accessible and walkable city (apart from the Seaside Boulevard and the Fountain's Square)?"*. The majority of 16 individuals chose option 'C' and expressed their belief that there are some things to be redesigned in the city, while another large group of 11 people chose option 'D'. The fact that the respondents chose these two statements is quite significant and shows that the citizens do not feel comfortable with the current state of things in the city. These choices can be interpreted in various ways and the following sections of this chapter will discuss all of these concerns in details. Only one person (female) expressed her belief that Baku is a comfortable city for those who are not driving ('A'), while other two individuals (males) chose option 'B'.

The question number eight (Q8) was wondering: *"Do you agree that the overhead pedestrian bridges make Baku an accessible and walkable city?"*. The majority of 13 respondents chose option 'C', while only one respondent (female) chose option 'A'. These results can demonstrate that the absolute majority of respondents do not consider the overhead pedestrian bridges in Baku as a solution that provides the citizens with accessible and walkable environment. Considering the fact that nearly all respondents expressed their desire of being able to cross the roads at-grade (in the interviews), these results cannot be seen as random. Moreover, 8 people chose the option 'B' and exactly the same number of respondents chose 'D'. Results from this question demonstrate an extremely low level of trust into the overhead pedestrian bridges as the facilities that provide accessibility and safety. One can say that this question is designed in a way that creates the feeling of mistrust. I would argue against this statement because the question

itself makes a statement in favor of the overpasses. This question could be seen differently if a large number of people chose the option 'A'. The fact that this did not happen can tell us too much, especially considering the fact that all the respondents were young and healthy people.



Graph 10. Responses to the survey question 9. Source: designed by author.

Graph 11. Responses to the survey question 10. Two respondents chose multiple options (black). Source: designed by author.

Question number nine (Q9) was asking: *"Would you agree if the one said that in the existing situation the overhead pedestrian bridges serve for the good of pedestrians, not drivers?"*. The most interesting thing is that no respondent chose the option 'A', while a large group of 12 people (4 females, 8 males) chose the option 'B'. This can be interpreted in various ways. First, there is an evident gender difference in the option 'B' that is due to the fact that driving is mostly seen as a male activity in Azerbaijan (World Bank, 2018). A higher number of males choosing this option can be seen as a driver perspective, since for the majority the benefits for pedestrians, obtained through grade-separated facilities also means easier driving. Second, I think that a large number of respondents chose 'B' due to the more weighted nature of this choice compared to the first one. Also, I believe that it is an indicator of a certain level of doubt that people have about the way the pedestrian infrastructure is organized. This belief of mine can be justified by the largest group of people (13) that chose the option 'C', meaning that people more agree with the fact that the overpasses are better for drivers than for pedestrians. The rest of the respondents - 5 individuals (4 females, 1 male) chose the option 'D', which was an opposite position to 'B' but was more "pedestrian-oriented". Since, it is known that women strongly rely on public transportation and walking (Merriman, 2020, p. 145), the responses in favor of 'D' also demonstrate quite a noticeable gender difference.

The final question (Q10) was asking the following: *How would you assess the overhead pedestrian bridges that you used before in terms of accessibility?* The most interesting thing with this question was that a majority of 10 people chose the option 'D', meaning that the one-third of all respondents can openly say that they do not consider the overhead bridges as accessible facilities in the context of urban Baku. Also, 4 individuals (all

females) chose the option 'C' that can be interpreted exactly in the same way as it was done earlier in this section: since females mostly rely on walking for their mobility, all respondents that indicated the distance as an obstacle for using the overpasses are women. 7 individuals (3 females, 4 males) chose the option 'B', while exactly the same number of people (2 females, 5 males) chose option 'A'. The difference here can be interpreted variously. It would be good to mention that the overhead bridges in Baku can be maintained differently based on the location and on the date the facility was constructed. Usually, those facilities that are located close to the central areas as well as those that were built recently can provide the pedestrians with operating and comfortable escalators. This can be interpreted as a space-based discrimination, when the center enjoys continuous maintenance and development, while the periphery suffers a lack of attention (Guliyev, 2018). Some overhead bridges located on the periphery can be even constructed without escalators and elevators. Also, this can be seen as the matter of organization and funding required for continuous maintenance of these facilities, which is usually ignored due to significantly high costs (Zegeer, 2002; Hidalgo-Solórzano et al., 2010).

5.2 Analyzing the results of interviews

The open-ended interviews were conducted with each individual straight after the completion of surveys. The first part of each interview was devoted to the broad discussion of the survey questions, while each person was given the possibility to extend his/her answers by more perspectives. The second part of the interviews consisted of more open-ended and unstructured discussions that were thought to reveal more opinions and views about the research problem. The interviews were varying based on the views of the respondents in order to let them talk freely and without having the sense of saying something wrong; these talks were not tied to certain beliefs expressed by me. Since, the interviewees were provided with a full freedom to express their beliefs, some topics were not discussed because the respondents did not mention those topics. I was trying to guide them towards the certain topics for discussion that would be useful for this research but I was not insisting on such discussions. This factor strongly influenced the pattern data that was created from the interviews. Some topics were mentioned by a limited number of people, while others by a larger number. In both cases I was identifying these different "mentions" as patterns. In order to avoid bias in data, it was also highly important to check the differences between the contexts where these topics were discussed. Thus, the patterns were created with a consideration of possible variance in the contexts.

5.2.1 Provided facilities and maintenance costs

"…the existing infrastructure marginalizes pedestrians. The overhead bridges are ineffective because people try to jaywalk even on high-speed freeways, while they can choose a safer solution [overhead bridge]. All overhead bridges have to be provided with all required facilities like elevators and escalators in order to convince people not put their lives under risk." (JIM)

"They always try to repair the escalators but it feels like it is too expensive to maintain all escalators across the city." (ASM)

"The escalator was dirty and was not working. The coating was very slippy and nobody was in the security box to ensure safety or to help the elderly to use the overpass." (NKF)

"*Planners should consider long-term perspectives for any pedestrian facility they construct. The overpasses are expensive…*" (JHM)

"The aesthetic beauty can increase the number of people using the overpasses but they [the city planners] should rather think about traffic calming than the overhead bridges." (AHM)

"They [the overhead pedestrian bridges] are just awful… I would never allow to build them within the city environment!" (SKF)

This section will cover the three patterns that were identified while color and symbol coding the open-ended interviews. The patterns chosen for this part are *"Provided facilities"* and *"Costs and maintenance"*, and they were decided to be introduced together due to the close relationship between these understandings in the context of the overhead pedestrian bridges. All these topics are descriptive in their nature and are used to shed light on the user perspective that is seen to be widely neglected in the transportation agenda of the city.

The first thing to discuss are the provided facilities on the overhead bridges. As it was mentioned earlier in this chapter, the facilities and their conditions on the grade-separated facilities in Baku can vary depending on the factors like location and the time of construction. Based on the pattern data regarding the provided facilities on the overpasses, it is known that 20 people (10 females, 10 males) reported problems with escalators, while 6 individuals mentioned the absence of elevators as an important issue. It worth mentioning that it was not popular to install elevators on the overhead pedestrian bridges in Baku until the recent months, when a brand new facility on Neapol St (Figure 6) was opened by the head of state (Fed.az, 2020). It was broadcasted through the state channels as a great solution to the existing pedestrian safety concerns on that section of the road. The reaction of people was differing, while quite a large number of independent experts stated that such an expensive project (some unofficial sources say that it costed around 5-6 million manats = 2.5 – 3 million euros) was useless and the activists from a famous website called *İnsan yönümlü şəhərlər (Cities for People)* even designed their own vision on that road section (Figure 7). Also, 17 individuals reported about the slippy floor coating of the stairs and the bridges. It worth mentioning that this issue exists in all parts of the marble-coated Baku, as well as on the grade-separated facilities. The security issues were mentioned by 12 respondents while some people suggested quite a wide variety of solutions like fire extinguishers, security cameras, security workers and even hiring a special personnel that could help the elderly and the disabled people to use the overpasses.

The second pattern to discuss is the costs for construction and maintenance of pedestrian facilities. The high costs for constructing and maintaining the overpasses were mentioned by 11 respondents, while 9 individuals emphasized that "3 in 1" solutions across the city could be significantly cheaper and way more effective. Also, 4 individuals (1 female, 3 males) expressed their belief that the safety of pedestrians has to be provided at any cost, even if the importance to construct the overhead pedestrian bridge is inevitable. In contrary, 7 people stated that whatever the pedestrian facility is planned to be built, the planners have to be able to explain the cost-benefit sides of the taken decisions as well as

consider the long-term perspectives of the constructed unit of infrastructure. The identified patterns can show that people are usually not perfectly informed about the

Figure 6. The new overhead pedestrian bridge constructed at Neapol St (Fed.az, 2020)

Figure 7. Suggestion by Cities for People (City4people.az, 2019)

financial means of the infrastructural projects. There is a noticeable demand for accountability of the transport planning agencies to the people. Despite that, it was quite noticeable from the responses that some people do not think about the maintenance costs required for grade-separated facilities. Such possible costs were mentioned by some respondents but generally I got the feeling that people usually see such facilities as some something "finished" that do not require additional time and funds to be maintained. Based on the personal experience, I can say that it is quite common to see a non-operating escalator both on the overpasses and underpasses in Baku.

5.2.2 Barriers and fines

"The fines are ineffective due to a weak control; I would say that a stricter control is required for those who do not follow the traffic rules. I think women would not climb over fences because it is an ethical thing in Azerbaijan, you know… It is seen as a sign of something like "poor nurture." (AKF)

"The fines are good but it would be better if the police could work on prevention of jaywalking on certain roads for several months prior starting to fine people." (AAF)

"The fines can be effective but it is not right to fine people when you have unsolved problems in road traffic planning. We literally have no choice!" (HSM)

"It is definitely can never be seen as a solution! Fences and fines can be effective only in the existing situation [traffic planning issues] …" (BKM)

"I would say that fences are helpful and they are helpful because people consider jumping over them as a bad behavior. I think that the majority of people would avoid this… Well, not to generalize, I can ensure you that it always works with me." (JHM)

"I remember, once I did not use the underpass near Nizami cinema to cross the road and decided to jaywalk through the narrowest part of the road. I was stopped by the policeman on the other side and he told me something like "The city provided the pedestrians with the underpasses in order to ensure pedestrian safety. Why don't you use the facility? It is in your interest to use it and stay safe." I was fined that day. And you know what? I feel like he was right." (ibid.)

"The fences are not so high and people easily jump over them. I think that it is not a good solution just because you can never control people that way!" (FAM)

"Our police operate like a punitive system, not the one that informs the people or increases the awareness. Fines will not be effective in such a situation." (MMF)

This section of the chapter is designed to discuss the way the planning authorities in Baku try to ensure safety through building barriers and fences along busy and major roads with the overhead bridges (Pasha et al., 2015). The matter of fences was discussed with the respondents in order to find out their opinion about barrier-free environment that is a prerequisite for designing inclusive urban environments (Street, 2009). In the context of traffic infrastructure, fences lead to deepening of inadequate land use and zoning that defines a clear division between "places for cars" and "places for pedestrians". It is understandable that building barriers like fences along roads with overhead pedestrian bridges is thought to ensure pedestrian safety and make people use the overpasses for road crossing. Since, it is understandable that not all the people are obeying the rules, this solution seems extremely idealistic in its nature, and puts the actual idea over the risks. For instance, 15 people (5 females, 10 males) think that fences along the roads do not stop people from jumping/climbing over them. By the way, the noticeable gender difference can be explained by the first quote in this section (AKF). Despite the proven negative influences, the fences in the existing situation seem necessary, but they can disappear once the planners will choose people-oriented development as the core strategy.

Another topic considered within the identified pattern is regarding the fines that are used by the police service in order to limit the traffic violations in the city of Baku. It worth

mentioning that the overhead bridges in Baku are usually left unregulated by the police; they usually fine people close to the underpasses. It was interesting to me to ask people whether they think that fines could improve the situation with risky pedestrian behavior near the overhead bridges. The case of fines was mentioned by 15 individuals and was used in different contexts. Generally, the people mentioned that there is a possibility for increasing the effectiveness of fines in the following conditions:

a) if fines become higher than they are now;

b) if there will be a stricter control over payments;

c) if the police will be present at location;

d) if the police will choose the strategy of informing, not punishing by fines for the first several months;

e) if the city planning will be improved, so it will make sense to fine people that do not follow traffic rules.

On the contrary, 5 individuals think that whatever the case is, fining people will not improve the existing situation if the city authorities will not implement some groundbreaking reforms in the transportation sector. These people believe that until that time fines will work as a punishment, not the tool that would improve the whole situation. From another perspective, some respondents were introducing their personal cases when fines made them follow the existing traffic rules. From my point of view, fining people near the overpasses and the underpasses looks like shifting the responsibility towards pedestrians (like in the response of JHM) in a situation when the authorities failed to provide pedestrians with adequate infrastructure. Here is the narrow street in the city centre with an underpass, where my respondent JHM was fined (Figure 8). This picture is quite nice to demonstrate how the interests of drivers can prevail even on the narrow urban roads in the central part of the city.

Figure 8. An underpass near Nizami Cinema in Baku. It is located in the city centre under quite a narrow urban road. Source: photo shot by author.

5.2.3 Jaywalking vs using the overpasses: perception of safety and responsibility.

"Our people need time to get used to using the overhead bridges. Sometimes I have the feeling that some people in this city are not concerned about their own and somebody's safety at all! I think that using those facilities has to become a habit. We have to teach road culture from early years at school." (ATF)

"I do my best to avoid using the overhead bridges. Honestly, I would rather walk a bit and find a signalized crossing. It is my little protest, because the city belongs to us, the people, not to the cars." (LAF)

"I see no problems with ascending and descending and support the construction of the overpasses. Our drivers are rude and they drive aggressively. They do not consider the pedestrians and their safety. The overpasses that I used were quite fine and I support their construction because they save lives." (AAF)

"*The construction of overpasses is a necessary measure due to the high death rates on highways. Sometimes I feel like they build those facilities once they see that the number of road accidents with pedestrians grows at certain locations. The same decision-making applies to the city roads. They are not calming the car traffic...*" (NAM)

"I dream of Baku without overhead bridges but now it looks like the only way to save lives. People act more responsibly nowadays; they use the overpasses more frequently than before." (TIM)

"Our drivers do not see pedestrians as equal actors of road traffic. The planners do not understand that with all these overpasses and underpasses they deepen the transportation crisis in this city. We need a shift in favor of pedestrians!" (BKM)

"For me it is unethical thing to say something like "jaywalking" because the city has to belong to pedestrians. We are not jaywalking; we just naturally tend to choose the option that requires less efforts. Our decision-makers postpone the problem instead of solving it instantly. There is only one solution: return the city back to people." (AHM)

This section is designed to introduce the perspectives of my respondents towards pedestrian safety. To begin, it worth mentioning that some people were considering the existing state of things in the transportation sector of Baku as something normal and unique for all countries.

The term "jaywalking" is used in this section to build a comparison with the opposite pedestrian behavior within the context of this research – using the overhead bridges. Some interviewees connected the two behavioral types to the term of responsibility, which they saw as compliance with the existing infrastructural design in order not to violate traffic rules. For instance, 12 individuals stated in their interviews that all people should take the responsibility and understand that breaking the traffic rules is not right. Another group of respondents was quite informed about other ways of managing the city traffic, thus were transferring the factor of responsibility on the urban planners and decision-makers. I would say that both perspectives make sense, because from the pedestrian safety perspective, the city planners should design the urban infrastructure in a way that ensures safety, while it is also important that both pedestrians and drivers will not violate the traffic rules.

Despite the existing dispute around responsibility, an absolute majority of 29 respondents expressed their position against jaywalking even if they have to use the overhead bridge or walk a distance to the nearest signalized zebra crossing. On the other hand, 24 individuals stated that they would consider jaywalking because of the three main factors: efforts required for using the overhead bridge, the time consumption and that the overpasses are uncomfortable (steep angle of stairs, the absence of elevators and escalators). Also, 20 individuals stated that they would jaywalk if the road would be empty or narrow, while some people in this group also mentioned the absence of cameras. These responses demonstrated the existing demand for road dieting and pedestrian-oriented development in Baku, when the people will not feel afraid or be ashamed for crossing the road at grade without putting extra physical efforts and spending their time. It also worth mentioning that 5 individuals expressed their mistrust towards zebra crossings, stating that such a design does not guarantee safety while crossing roads at some parts of Baku.

Another thing to consider in this section is the ascending and descending required for using the overhead bridges. In total, 16 individuals mentioned this factor in their responses and the opinions were equally divided. For instance, 8 people (6 females, 2 males) stated that they do not consider additional efforts as something that would push them to take the risk and try to jaywalk. In reverse, another group of 8 respondents (2 females, 6 males) stated that the factor of ascending and descending is the main thing that makes them avoid using the overhead pedestrian bridges as much as it is possible. The obviously seen gender pattern can be interpreted based on the findings from the previous studies regarding the fact that young males tend more to act dangerously while crossing the roads compared to females.

5.2.4 Natural behavior

"People always search for the easiest ways, where they will spend the minimum of their time and energy. I think that the city planners should consider the fact that people are reluctant to use the overpasses just because they do not want to do that." (NMF)

"It is impossible to plan the cities with the consideration of the human nature. People are different and their behavior varies." (NYM)

Among the most important factors for the emergence of new urbanism as an independent movement is that it introduced pedestrian-friendly development as the core idea that should shape and guide changes in the urban environment (McCann, 2020). The human factor became a very important variable that dominated the new wave of perspectives on how the urban realm should be organized in a way that does not contradict the natural tendencies of human behavior. In reverse, it was fairly thought that people and the way they behave or decide is extremely important for designing sustainable communities.

The discussion of human factor within the context of this research is tied to the idea that people naturally tend to choose the most effortless ways of doing things and the act of crossing the road is not seen as an exceptional case. I argue that jaywalking should not be always seen from the perspective of breaking traffic rules. A different approach towards jaywalking can make it an important factor for urban redevelopment and groundbreaking changes in the development of transportation infrastructure. In the context of poor

development of pedestrian infrastructure, like it is in Baku, jaywalking can be seen as a natural inclination that deserves attention of planners. The latter should adopt such strategies for designing pedestrian and road infrastructure that would destroy the ground for jaywalking. Each overpass or an underpass has the potential to be redesigned to become a signalized zebra crossing with low curbs and ramps instead, where the minimum physical efforts for road crossing are guaranteed by the way the crossing is designed.

The interviews demonstrated a great demand for at-grade pedestrian facilities. For instance, an absolute majority of respondents - 27 people expressed their desire to be able to cross the roads using the "3 in 1" facilities. Also, 22 respondents stated that the planners should consider the naturally dominated unwillingness of pedestrians to put additional physical efforts while moving around the city. At the same time, 9 people think that despite the traffic errors, people should follow the existing traffic rules. These results show quite a high and noticeable demand for redevelopment of the existing pedestrian infrastructure that should not be ignored.

5.2.5 Discussing accessibility based on the case of vulnerable groups

"All people pay taxes so all social groups have equal rights for mobility. The city authorities have to ensure inclusiveness while designing the urban infrastructure." (JIM)

"I have no idea on how the disabled people or the elderly can be able to use the overhead bridges that we have here [in Baku]. The only hope for these people is to come and see the escalators or the elevators working." (ASM)

"Disabled people do not go out in Baku but that does not mean that they do not exist… It feels like they were designing this city for the most vigorous, young and rich people; it is something like "If you are a disabled person – stay home!" (BKM)

"If you are not a person with reduced mobility, or if you do not have a pram or a heavy bag – then Baku is an accessible city." (UAF)

"Well, the situation was a bit different a couple of years before but now the government is improving the facilities for disabled people: now they are lowering the curbs [on zebra crossings] and constructing ramps for wheelchairs and prams. It looks very nice and I hope it will make a positive impact." (JHM)

"The people on wheelchairs will not be able to use the overhead bridges without somebody's help..." (SKF)

"It is impossible to use the overhead bridges if you have a disability or if you have your child in a pram… People with prams or those on wheelchairs should search for zebra crossings." (NKF)

This section is designed to introduce what the respondents chosen for this study think about the term of accessibility within the context of the overpasses. It worth mentioning that I decided not to tie the term only to the context of the overhead pedestrian bridges and gave the interviewees a full freedom to express their views about accessibility in a wider dimension – on the level of the whole city of Baku. It would be also good to add

that the matter of accessibility was discussed with a great enthusiasm by my respondents; there was a feeling that all the people had lots to say about accessibility in Baku. Despite my initial plan to identify the existing concerns regarding accessibility among the chosen target group, the responses of the interviewees were more about the vulnerable groups like the disabled people, the elderly, the children, the pregnant women or the parents with a child/children.

The results of the interviews show that a large majority of 21 respondents think that the overhead bridges in Baku are not accessible to the vulnerable groups. Also, 14 people think that the escalators and elevators can improve this situation. It worth mentioning that some people were considering the overhead pedestrian bridges as stationary facilities that will forever be a part of the urban landscape, so they were trying to find the ways for improvement based on the existing conditions. Adding elevators and escalators to the existing facilities was seen as a way to help those who are affected. Generally, I got the feeling that some people could not imagine a different approach (e.g. mixed land use) towards organization of both pedestrian and transport infrastructures.

To conclude with the results of this section, it would be also good to demonstrate some similar statements and opinions that were mentioned by different people. These are the following:

a) The disabled people usually do not go out in Baku (3 people).

b) The existing state of the urban space in Baku discriminates people with reduced mobility (2 people).

c) The citizens with reduced mobility will not be able to use the overhead bridges without a side support (3 people).

5.2.6 Car ownership in Baku: culture or the need?

"Positive transformations in the transportation sector can increase the use of public transport. I think that this should not be seen only from the perspective of buying new busses or new trains for the metro. There is an urgent need for systemic changes. Once an average Bakuvian sees rapidly and frequently moving busses on separate bus lanes, he will leave his car at the parking lot right the next day, trust me." (HSM)

"I would say that the culture of car ownership in Azerbaijan is too robust and we have to do something with that. It is not normal to buy a car to a young girl or a boy who have just enrolled to the university." (SHF)

"It is quite tough to change people's mind [on car ownership]. It is seen as something prestigious here and does not seem to change. People believe that it is way better to get stuck in a traffic jam in their private car than in an overcrowded bus. The city authorities have to improve the public transport to convince people avoid buying cars. People buy private cars because the public transport in Baku is inadequate." (AHM)

One of the most interesting things that I have noticed in Baku is that people strongly believe that not so many people will change their mind to use private cars even in case if the public transport in Baku improves. The people are strongly convinced that the Bakuvians love owning cars and it will barely change because it is seen as a sign of

prestige and personal comfort. This was mentioned by 19 respondents (13 females, 6 males). Such a great gender difference can be explained by the growth of sexual harassment acts in the overcrowded public transportation (Jafarova et al., 2014). Based on this, it is not surprising that despite the fact that driving is mostly considered as a male role in the Azerbaijani society, the number of females that own a private vehicle grows in Baku.

Also, since owning a car means being able to reach as many places within the city as it is possible to reach, people generally give a high value to a private car in comparison to the public transportation. The growth of motorization levels in the conditions of poor public transportation is associated with road-widening, and, as a consequence, the construction of the overhead pedestrian bridges. Only a minority of 2 respondents mentioned in the interviews that the improvement of public transportation can create a ground for choosing public transport instead of private cars. In reverse, the survey conducted by *"Cities for People"* (Anar Aliyev, 2020), demonstrated that around 53% of respondents in Baku would like to use a comfortable and widely developed public transportation, while just 6.9% of all respondents expressed their trust into private transport. Also, 52.3% of all respondents stated that they liked the recent changes in public transportation (BakuBus system), while 58.7% of respondents stated that they rely on public transportation for their travels.

Based on the results introduced above, it is seen that despite the fact that people consider owning a private car as a sign of comfort and prestige, there is a huge demand for improvements in public transportation. The shift towards public transportation and non-motorized modes of mobility like walking and cycling can significantly reduce car-dependency, thus the need for grade-separated pedestrian facilities like the underpasses and overpasses in the city of Baku.

6. Discussion

This part of the research is designed to discuss the findings from the previous chapter based on the perspectives of the two chosen concepts of accessibility and pedestrian safety. The data that was introduced to the reader in the previous chapter demonstrates some perspectives of Bakuvians on the overhead pedestrian bridges and identifies some issues created by the impact of these pedestrian facilities on the urban environment. In this chapter, these issues will be examined through the perspectives of accessibility and pedestrian safety and the overarching theoretical framework of transit-oriented development (TOD). The collected data demonstrated that the opinions of the respondents are differing regarding the role of overhead pedestrian bridges. While some respondents were against their presence in the urban area of Baku, others were seeing them as safe havens for pedestrians in conditions of speedy city traffic with a strict division between zones for driving and road crossing.

The theoretical framework of transit-oriented development (TOD) was discussed in relation to the concepts of accessibility and pedestrian safety in the Chapter 3 in order facilitate the interpretation of the issues identified Chapter 5. These concepts allow situating the empirical data collected from the interviews within the theoretical framework of the TOD. Such a connection is helpful for observing the role of the overhead pedestrian bridges through the lens of systematically organized principles and strategies of TOD. Also, the theoretical framework of TOD is useful for identifying and assessing the possible impacts of the overhead pedestrian bridges on the urban space that is not homogenous and shared by different groups of people. Based on such a knowledge it becomes possible to suggest some strategies for reshaping the existing urban space in a manner that constitutes the principles of TOD.

6.1 Perspectives of pedestrians in Baku on the overhead bridges as road crossing facilities

This section is designed in order to answer the first research question chosen for this study by discussing the perspectives of pedestrians in Baku on the constructed overhead pedestrian bridges through the lens of pedestrian accessibility and pedestrian safety. It worth mentioning that the term of accessibility is not used in this research only as a tool for understanding the impacts of the overhead pedestrian bridges regarding the disabled people. In reverse, this research demonstrates accessibility as a matter of providing all social groups with accessible pedestrian facilities for safe walking and road crossing. Provision of all-accessible facilities corresponds the first principle of TOD that stands for *"the pedestrian realm that is safe, complete and accessible for all"* (ITDP, 2017). Questioning the quality of the provided pedestrian infrastructure in terms of its accessibility for all is helpful to give an adequate assessment to the constructed overhead pedestrian bridges in Baku. Since the empirical data collected from the interviews is the main source of information for this research, the principles set by the proponents of TOD are helpful for theoretical interpretation of the issues in relation to accessibility that were voiced by the people.

Within the context of the overhead bridges in Baku, this research raises the matter of pedestrian safety based on examining the underlying and invisible sides of the role of these facilities in the urban realm. Based on the empirical data it becomes obvious that the construction of the overpasses in Baku is thought to provide pedestrians with safe road crossing facilities at locations where it is important to separate pedestrians from a dense and rapid traffic flow on the city roads. This exclusion of people from the road traffic can be understood as the desire of the city planners to ensure rapid movement of private vehicles with the aim to prevent traffic congestion. As it was mentioned earlier in Chapter 3, increasing the capacity of roads attracts more private vehicles in the traffic system and fails to prevent congestion. It becomes evident that by constructing grade-separated facilities like underpasses or overpasses, the city planners in Baku are sacrificing the role of walking in traffic in favor of motorized mobility, simultaneously trying to ensure safety of pedestrians that cross the roads. It seems that the transport planners are neglecting the potential risks like jaywalking that becomes even more real with the poor provision of facilities like escalators and elevators that are usually being installed to enhance the accessibility of overhead bridges. The existing state of things

raises the concerns regarding pedestrian safety in a different dimension compared to the one considered from the perspective of *"ensuring safety by separating"*.

6.1.1 Questioning accessibility of the overhead pedestrian bridges in Baku

The global developmental trends of the recent years demonstrated a drastic shift from using motorized modes of transportation towards enhancing non-motorized mobility. As it was mentioned in the Chapter 3, based on the guidelines set by the school of new urbanism that advocate walking and cycling for mobility, transit-oriented development (TOD) is seen as the most effective strategy that helps designing cities in a way that promotes the mentioned modes of transportation as a key for designing cities accessible for all. It is evident that designing appropriate pedestrian infrastructure alongside traffic calming improves the quality of walking and increases the reliance on walking as the major mode of mobility (Hodgson, Page, & Tight, 2004). It is understandable that while talking about pedestrian accessibility it is highly important to design road crossings at grade (ITDP, 2011). Based on the aforementioned, it seems obvious that constructing overpasses within the urban environment is a poor way of providing pedestrians with accessible facilities for road crossing.

The results of the survey and the open-ended interviews demonstrate that the overhead pedestrian bridges are associated with a number of issues related to pedestrian accessibility. According to the answers of the respondents to Q2 of the survey, it becomes evident that ascending and descending required for using the overhead bridges as well as long distances to the nearest overpasses are associated with the decision of people not to use these facilities. These results fit the answers to Q10, where distance to the nearest overpass and the absence of the escalators and elevators were mentioned as factors making these facilities inaccessible. Also, the case of the Q10 was quite interesting due to the 10 people who stated that the overhead bridges are not accessible in general.

According to the coded interview data, almost all individuals (26 people) reported the lack of escalators and elevators on the overhead pedestrian bridges in Baku, which raises a huge question regarding accessibility of the vulnerable groups. These concerns were justified by the responses of the 21 individuals who stated that the overpasses are not accessible for vulnerable groups of people. This matter can be also discussed from the perspectives of social exclusion (Chapter 2). Due to the absence of facilities like escalators and elevators that could ensure accessibility for the vulnerable groups, the risk of social exclusion among such groups becomes another open topic for a separate research. Based on the categories of social exclusion (Church et al., 2000) that were discussed in details in the Chapter 2 regarding the case of vulnerable groups (e.g. the disabled people, the elderly and children, pregnant women, parents with prams and people encumbered by heavy belongings), the existing conditions with the overhead pedestrian bridges qualify for categories of physical exclusion, fear-based exclusion, space exclusion and time-based exclusion.

Another remarkable thing to discuss in this section is that the answers to Q7, Q8 and Q9 demonstrated that generally the interviewed people consider the city of Baku as mostly inaccessible for pedestrians. For instance, only one individual agreed that the city of Baku is an accessible and comfortable city, while the absolute majority stated that the level of

accessibility is quite moderate or that the level of accessibility in the city is quite low (Q7). Just one respondent agreed that the overhead pedestrian bridges increase the level of accessibility in the city, while the majority (13 people) stated that the overhead bridges make the situation just relatively better (Q8). Also, 8 individuals expressed their belief that the overpasses do not improve the level of accessibility (Q8). In addition, nobody agreed that the overhead bridges serve for the comfort of pedestrians, while the largest group of respondents stated that these facilities rather facilitate driving than provide pedestrians with comfortable road crossing (Q9). These results demonstrate that there is quite much to do in terms of improving the level of accessibility in the city of Baku and that the overhead pedestrian bridges are not the facilities that can work for its implementation. A number of studies suggested practical solutions for improving accessibility in the context of Baku (World Bank, 2018; World Bank, 2019).

6.1.2 The role of overhead pedestrian bridges from the perspective of pedestrian safety

Emphasizing pedestrian safety is one of the bedrock ideas promoted by the proponents of TOD. According to Metropolitan Council (2006), pedestrian safety and comfort are crucial to the success of transit-oriented development. It is known that the shift from a high reliance of private vehicles to public transport and non-motorized modes of mobility is seen as vital for improving pedestrian safety. Some measures like road-dieting, reducing the speed limit or changing the shape of the driving blocks in the residential areas were proposed as practical solutions by the advocates of TOD for ensuring pedestrian safety (Cervero et al., 2017). Despite the existence of the well-known strategies that have a great potential for improving pedestrian safety in Baku, the city authorities do not take firm steps towards reducing reliance on private vehicles. Instead, the construction of grade-separated facilities is seen by the traffic planners in Baku as the way to ensure pedestrian safety, but as it was mentioned earlier, alongside providing some pedestrians with safe road crossing facilities, the reliance on overpasses and underpasses creates a myriad of issues related to the concept of pedestrian safety.

It worth mentioning that at their current state in Baku, the overhead pedestrian bridges are quite useful in terms of providing the people without mobility limitations with a safe haven for road crossing. Based on the results from the first survey question (Q1), a half of respondents mentioned that they use the overhead bridges to cross the roads in case if it is the best way to reach the other side of the road. Other 7 people stated clearly that they always use these facilities in case they see them present at the area with a dense and rapid car traffic. It is understandable that the existence of these facilities at such locations are better than their absence but some people are reluctant to use the overpasses. Such a situation creates a huge risk of jaywalking and increases the risks of traffic collisions. For instance, 5 people stated that they try to avoid using these facilities, while 3 individuals stated that they usually try to find alternatives instead of using the overpasses (Q1). These responses make it evident that despite the belief of the city planners in Baku that the overhead bridges are enough for providing pedestrian safety, some people will always try to change their route when facing these facilities, making the risks of traffic accidents higher. Also, the answers to another question (Q4) demonstrates that 8 people would consider jaywalking in case of seeing gaps in traffic, while 12 individuals stated that

limitations regarding time would also motivate them to make such a choice. Only 8 people that answered Q4 admitted that they would use the overhead bridge whatever the case is.

It worth mentioning that the results from the interviews support the survey data: despite the fact that the absolute majority of people (29) stated that they are against jaywalking, 24 people stated that they would consider it if possible (gaps in traffic) due to the efforts required for using the overhead bridge, the time consumption and that the overpasses are uncomfortable (steep angle of stairs, the absence of elevators and escalators). Moreover, 20 people mentioned that they would jaywalk if the roads would be narrow and/or empty. All these results demonstrate that generally people prioritize crossing the roads at grade and this interesting finding can be helpful for motivating the implementation of TOD.

The discussion above can be supported by other results from the interviews showing how pedestrians perceive fines that are used as an enforcement for abiding traffic rules, and the fences along the roads that are usually constructed in Baku in order to deliver pedestrians to the overpasses and are thought to prevent jaywalking. For instance, 15 individuals stated that fences do not stop people from climbing over them and taking attempts to jaywalk, while 5 people expressed their belief that fines do not prevent traffic violations by pedestrians. While talking about fines, the respondents mentioned a wide range of conditions under which the effectiveness of such enforcement would be higher (Chapter 5).

Among all ideas mentioned by the respondents, the one was quite interesting: "*it is not right to fine people when you have unsolved problems in road traffic planning*" (HSM). This quote is quite good to demonstrate the existing state of things in Baku's traffic planning. According to some studies on pedestrian behavior that were introduced in more details in Chapter 2, it is understandable that designing pedestrian infrastructure that usually requires physical efforts and more time for its use does not fit the natural predisposition of people to save energy and time. According to Räsänen (2007), safety is not always the major concern of pedestrians but usually comfort and the time used are the main concerns. For instance, according to the interview data, 22 individuals mentioned that it is important that urban planners in Baku consider the natural unwillingness of people to use overhead pedestrian bridges.

Based on the discussion above, it becomes quite understandable that some people do not trust the enforcements that are used to ensure pedestrian safety near the overhead pedestrian bridges in Baku. Instead, as it is seen from the answers to Q3 of the survey, the majority of respondents call intensive car traffic as the main factor that makes them use the overhead pedestrian bridges. This demonstrates that not the enforcements but rather the individual perception of safety is a more influential factor for abiding road crossing rules. As it is seen from the results, there is an obvious "silent" call for changes in Baku that would create a situation when pedestrians are given a higher priority compared to the car owners. This statement can be supported by the answers to Q6 of the survey, where the absolute majority stated that they would construct "3 in 1" instead of the overpasses. Also, based on the results from the Q5, it is seen that 9 individuals call poor planning as the main reason for the construction of the overhead pedestrian bridges, while 7 people mentioned high-scale motorization as the factor motivating to build the overpasses. These results demonstrate quite a noticeable demand for reforms that would turn the city of Baku to a pedestrian friendly place.

6.2 Reflection on the issues in the existing city planning trends

This part of the Chapter 6 is designed in order to answer the second research question. To make this task easier, I will use the suggestions of the respondents that were mentioned in the open-ended interviewees and discuss them based on the existing practices that are widely used in transportation planning for creation of pedestrian friendly environments.

As it was broadly discussed in the previous chapters of this research, the existence of grade-separated facilities in the city can be associated with the strong reliance on private vehicles in the urban traffic system. The existing conditions in the city of Baku quite frequently create situations when people have to use the underpasses or overpasses in order to cross the roads; crossing the roads at grade at such locations is legally seen as jaywalking and violation of traffic rules. Here we can notice how the designed environment can characterize the behavior of pedestrians in legal terms. Here I argue that the conditions under which pedestrians face safety risks while trying to cross the city roads at grade should not be considered appropriate for pedestrian safety. Based on the principles set by the TOD, the adequate pedestrian infrastructure in urban areas is the one that creates conditions for people to cross the roads at grade (ITDP, 2011). The facts of jaywalking and traffic violations in the areas close to the overpasses and underpasses should not be interpreted in the context of poor pedestrian behavior but rather in the context of a collective will calling for changes in the designed environment.

As it was mentioned earlier in this research, the construction of the overhead pedestrian bridges in the urban area is the consequence of errors made in the transportation planning. Widening the roads with the idea to tackle traffic congestion can be associated with the one of such errors. Reduction of pedestrian zones in favor of increasing the capacity of roads erases walking as the mode of mobility. On the photos below you can see the area around the newly constructed overhead pedestrian bridge on Moskva Ave. It is noticeable that the location is extremely car-dependent. Also, based on the maps retrieved from the walkscore.com website it is possible to see to what extent the areas where the overpasses were recently constructed (Neapol St (Figure 10), Moskva Ave (Figure 11)) are appropriate for walking. Unfortunately, the portal does not consider some important factors like the topography, the design of the streets, the width of pedestrian walkways, the height of curbs and the opportunities for the people with reduced mobility. To make things clearer, I will compare the “walkscore” maps for the Seaside Boulevard and the Fountains’ Square (Figure 9) (the best places in the city for walking) with the maps describing the areas with the newly built overhead pedestrian bridges.

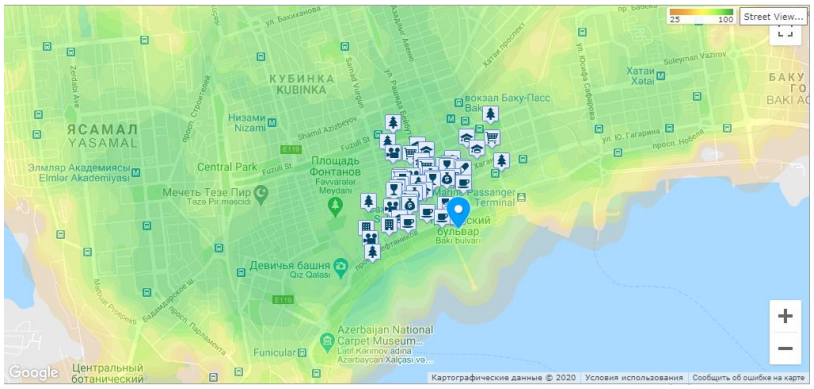


Figure 9. Walkability map for the Seaside Boulevard in Baku. The walkability score is 86/100. Green areas are the most accessible ones. (Google Maps, 2020; available through Walkscore.com, 2020).

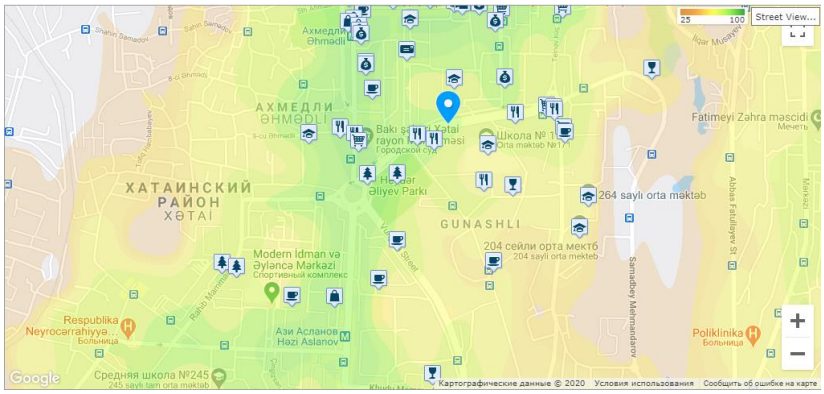


Figure 10. Walkability map for the Neapol St in Baku. The walkability score is 77/100. Green areas are the most accessible ones. (Google Maps, 2020; available through Walkscore.com, 2020).

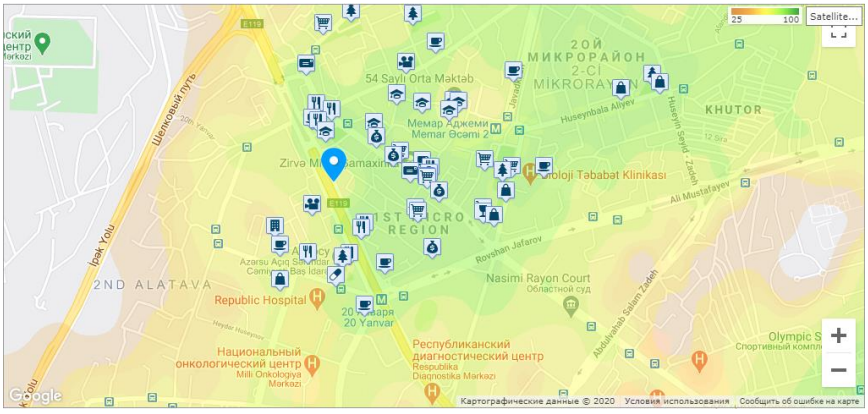


Figure 11. Walkability map for Moskva Ave. The walkability score is 68/100. Green areas are the most accessible ones. (Google Maps, 2020; available through Walkscore.com, 2020).

6.2.1 The suggestions of the interviewees

Before making my personal suggestions in the next section, I think that it would be good to discuss the possible ways for improvement of Baku's transportation sector based on the perspectives of my respondents. The suggestions of the interviewed people involve a wide range of topics that in some cases are not directly connected to accessibility and safety of the designed road crossing facilities. Despite this, they constitute quite an impressive pedestrian perspective that is valuable for identifying the main issues existing in the city. Generally, the issues mentioned by the interviewees deserve attention because their existence is strongly related to the topics like uncontrolled motorization, traffic congestion, problems in public transportation, etc. These issues are quite complex and are strongly interlinked; solving them can help reducing the currently high reliance on private vehicles in Baku's transportation system, that can consequently eliminate the importance of overhead pedestrian bridges in the urban areas. The suggestions of the respondents are introduced in the Appendix II.

As it is seen from the table, the largest number of respondents mentioned improvements in public transportation as highly important for solving the problems of Baku in transportation sector. According to the principles and guidelines of TOD, good public transport is vital for ensuring mobility for the wider groups of people who usually do not own a private car. Good public transportation is also vital for prevention of urban sprawl that can be seen as one of the most alarming issues in Baku (Jafarli, 2018). Sprawling neighborhoods are associated with spatial segregation because the areas in the outskirts of the city are usually populated by the people who have limited financial capabilities to buy housing in central areas of the city (ibid.). Also, urban sprawl is associated with the poor access to jobs and services that in the context of Global South are usually located in central areas (Cervero et al., 2017). Urban sprawl is associated with the reliance on private vehicles, so in the context of Baku ensuring good public transportation is crucial.

Another large group of people mentioned the importance of constructing cycling lanes. The discussions around the possibilities of cycling in Baku are usually raised in the social networks by large groups of people. Generally, it is thought that cycling is impossible in Baku due to its hilly topography. Some studies demonstrate that cycling in hilly cities is possible and some cases demonstrate quite a large share of cycling as a mode of traffic in the transportation system of cities located on high topography (ECF, 2019). Also, according to the World Bank report (2019), cycling as a mode of transportation has a great potential in the context of Baku. Combining an enhanced public transportation with better conditions for cycling and walking (wide sidewalks, reduced speed limit for cars, "3 in 1" facilities, road signals with buttons) can create a lower demand for private vehicles and eliminate the need for ensuring pedestrian safety by constructing grade-separated facilities (World Bank, 2018).

Based on the suggestions introduced in the table, it is also quite noticeable that the respondents would like to see some improvements in terms of increasing the awareness of both drivers and pedestrians (better informing the population about traffic rules). Generally, it was seen from the responses of my interviewees and from my communication with locals that there is a sense of a mistrust among people in terms of behavior in traffic. I would say that this happens mostly because of the existing issues in the design of the traffic infrastructure that creates misunderstandings between drivers and pedestrians. This sense of mistrust is also delivered from the road traffic officials. For

instance, in his interview on September 2016, the spokesperson of Baku Main Traffic Police Department Vagif Asadov said the following:

"We really have problems regarding pedestrians. Our officials conduct raids in the most underground and overhead pedestrian crossings to bring pedestrians to responsibility. So far, 90 000 pedestrians were detained [stopped by police officers]. It means lack of discipline among pedestrians. I think that it doesn't depend only on the Main Traffic Police, but also on pedestrians themselves." (Report News Agency, 2016).

As it can be seen from the interview, there is an evident sense of a shift of the responsibility towards people. There is no surprise that people call for more informing and raising awareness.

The last thing to discuss in this section is the obvious call of the respondents for making car ownership more expensive than it is now. This can be seen as a pedestrian perspective because it would be quite tough to see somebody among drivers in Baku to talk about this. Currently, there are quite noticeable issues with car parking in Baku. It worth mentioning that it is allowed in Baku to park private vehicles on the sides of the roads across the city and some car owners park their cars on pedestrian sidewalks and usually occupy public spaces in residential areas. The city authorities were once trying to adopt paid parking in the city of Baku but the system did not work adequately and now the city planners are working on a different car parking system (AzVision, 2018). Today car parking is not regulated in the city of Baku and there is a huge need for tackling the issues regarding this topic. Also, as it is seen from the suggestions, some respondents called for charging people that enter the city on their cars and to design alternative paid highways that could redirect the traffic flow from the urban area. Quite an interesting suggestion was mentioned regarding driving licenses in the city of Baku. Considering the fact that the system that issues driving licenses is quite corrupt in Azerbaijan, making it extremely easy to get a license compared to the Western countries, it would be a great decision to make reforms in this field (stated based on the experience of friends who obtained driver licenses).

6.2.2 Practical suggestions for positive changes

As it was mentioned in the previous section, the existing issues in the transportation sector of Baku are quite complex to tackle by just one measure, so it would be good to discuss some possible practical measures that would improve pedestrian accessibility and pedestrian safety and help to design inclusive environments for both walking and transit. The suggestions will be based on the key principles of TOD that were discussed in more details in the Chapter 3. A part of the suggestions was discussed in the previous section, so here I will introduce the missing points.

Institutional changes in the transportation sector of Baku seem as the bedrock need for turning the city into a pedestrian-friendly place with accessible and rapid transit. As it was said by the one of my respondents: *"there is a feeling that there is a poor communication between different organizations that manage our traffic system"* (DAF). This is not a wrong feeling because currently, the transportation sector of Baku is governed by the seven different organizations: Baku Transport Agency (BTA), Baku Metro, State Road Agency (SRA), Azerbaijan Railways, Baku City Executive Authority,

State Committee for Urban Planning, and State Traffic Police (World Bank, 2018). This situation makes reforms in this sector extremely tough to implement due to the conflicting interests and the lack of a centralized management that would adopt a firm vision for gradual development. According to World Bank, there is a need to create a public transport agency (PTA) in charge of coordination, planning and implementation of public transportation in the city of Baku (ibid.)

Mixed-use development is the central pillar of TOD and is characterized by applying such land use strategies that allow integrating residential, work, retail and entertainment activities within a walking distance in a single area (ITDP, 2017). This strategy is opposed to the practices of strict division of all the mentioned activities in separate spaces that were widely applied in the car-dominated 20th century. Division of spaces is associated with a high reliance on private vehicles and, as it was mentioned in the previous section, leads to urban sprawl. Mixed land use is the possible way for turning Baku into a compact and dense city with short distances required for accessing jobs and services. It is understandable that such a strategy will reduce car-dependency and drastically reduce the need for the overpasses and underpasses in the urban areas. Mixed-use development is associated with a high reliance on walking and cycling for transportation, making these modes of mobility dominant in the urban environment. Also, while being a central strategy for creating TOD, mixed land use strategies are associated with the provision of an easy and inclusive access to public transportation that significantly increases the number of potential users.

A diversified and an integrated public transportation system is an another TOD strategy that can significantly reduce car-dependency in the context of Baku. Apart from increasing the capacity for non-motorized transportation like cycling and walking, there is a huge need for expanding and improving public transportation in the city of Baku. The city can hugely benefit from an expansion of public transportation through increasing the capacity of bus rapid transit (BRT), the suburban rail, the metro service and building infrastructure for light-rail transit (LRT) e.g. trams. For instance, 93.6% of surveyed people in Baku emphasized their support for the new public transportation modes like BRT, LRT, suburban rail service and bicycles (Anar Aliyev, 2020). The adoption of an integrated card system for public transportation in 2015 called 'BakuCard' was a great beginning for integrating the public transport system (busses and metro). Despite this, the brand new suburban rail service that was revived in 2019 in a new format (the first time after the collapse of the Soviet Union), operates through a different card system that raises new questions regarding integration of the public transportation system.

Despite implementing reforms in the bus transit system by creating a state-led bus service called BakuBus in 2015, there is a feeling that bringing in brand new busses is not the only change that is needed. There is an urgent need for creating such a contracting system that would allow reducing governmental spending on bus rapid transit (BRT) and creating a nice ground for competition of experienced and internationally known contractors that provide a high quality BRT service on comfortable busses. Also, there is an obvious need for expanding the metro system in the city of Baku. Baku Metro that was created in 1967 consists of 3 lines with 25 stations (World Bank, 2018). According to the plan introduced by Baku Metro in 2008, the metro system aims at an ambitious growth by expanding the existing lines and adding two more lines (ibid.). Despite the existence of a plan for growth, the expansion of Baku Metro is extremely slow. Another mode of transportation

that has a great potential in the context of Baku is LRT that was existing before, in the Soviet era, but was demolished in 2006 due to the lack of financial support from the government in the post-Soviet era (Jafarli, 2018). The city of Baku has a great potential for LRT, especially on the area along the Seaside Boulevard which is currently designed as a high-speed freeway with underpasses for pedestrians that allow them to cross the road from the Seaside Boulevard to the historical centre of the city. This road is strategically appropriate for LRT because it connects the western and the eastern edges of the city across central Baku which is known as a busy area with places for employment, retail and entertainment (Figure 12).

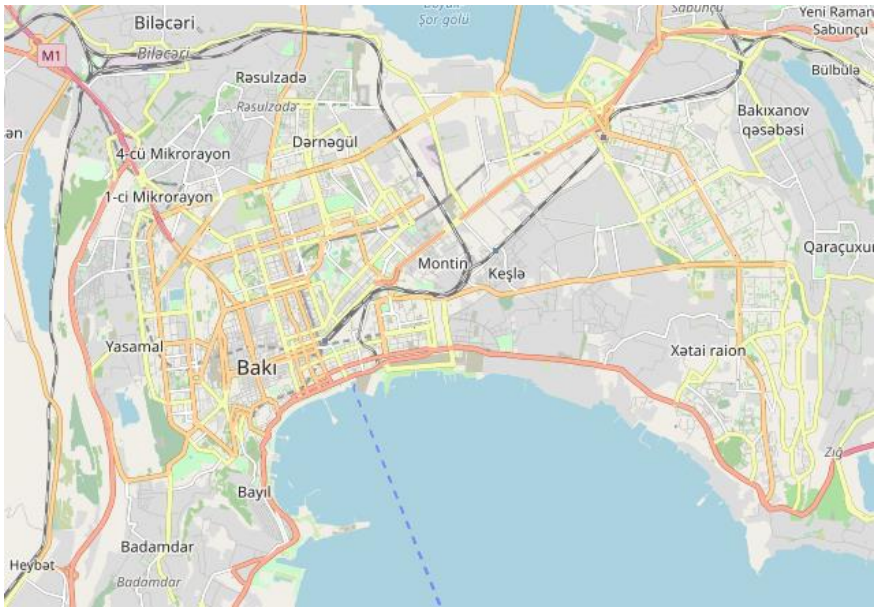


Figure 12. Baku roads map. The suggestion regarding LRT in Baku was made in the text regarding the long pink line along the sea coast (Openstreetmap.org, 2020)

Traffic calming is a TOD strategy that has the potential to create benefits for both pedestrians and drivers. As it was mentioned in the Chapter 3, it is evident that adding extra lanes to the roads is not an effective strategy for solving problems regarding traffic congestion. New traffic lanes create extra space for even more cars and the speed gains from such reform are temporary (Chapter 3). This is quite noticeable from the case of Baku: road widening strategies did not solve the problems with traffic congestion, while the average speed of the car traffic in the city of Baku barely exceeds 20 km/h at rush hours (World Bank, 2018). In the context of this research, it is seen that the road widening practices also have negative impacts on pedestrians that in such conditions usually get excluded from the traffic system and are forced to cross the roads through grade-separated pedestrian facilities like the underpasses and the overpasses. Based on the aforementioned, it seems that the implementation of traffic calming is crucial for creation of accessible and safe pedestrian facilities. Some practical tools for traffic calming are the following:

- ***First***, it would be good to mention that the *speed limit* in Baku for urban roads equals 60 km/h that is higher than the global average of 50 km/h (State Traffic Police, 2020).

Reducing the existing speed limit could be the first important measure that could have positive gains for enhancing pedestrian safety.

- ***Second***, *road dieting* is another important measure that could calm the car traffic and force drivers to be more attentive while driving in the urban areas. As a strategy road dieting has proven benefits for ensuring accessibility and safety for pedestrians, while improving the speed and capacity of transit. Reducing the number and the width of the car lanes can create an extra space for pedestrian sidewalks, cycling lanes and leave enough space for either LRT or BRT (sometimes for the both). According to some studies, such a design can significantly increase the capacity of roads and drastically reduce car-dependency (Cervero et al., 2017; ITDP, 2011; ITDP, 2017).

- ***Third***, *redesigning* the existing road infrastructure in a way that could ensure safe access for pedestrians and reduce risks of road accidents between cars and pedestrians. Among such measures it would be good to mention the importance of increasing the number of road signals. Despite the existing myth that road signals are increasing traffic congestion, some recent experiments with road signals located at freeways demonstrate that they have a huge potential for battling traffic congestion through dozing the car traffic in the urban areas (Shumskiy, 2018). Also, road traffic signals at intersections help to ensure pedestrian safety, while helping to avoid traffic jams (Roshandeh & Levinson, 2014). Apart from the road signals, it would be also good to mention the importance of applying some strategies that decrease the speed of the car traffic by reducing the space for vehicles, while increasing it for pedestrians. Usually such measures include designing *lane shifts, medians and refuge islands, corner extensions, raised at grade crossings* and *narrowing corner radii*. The examples of such solutions are introduced in the pictures below.

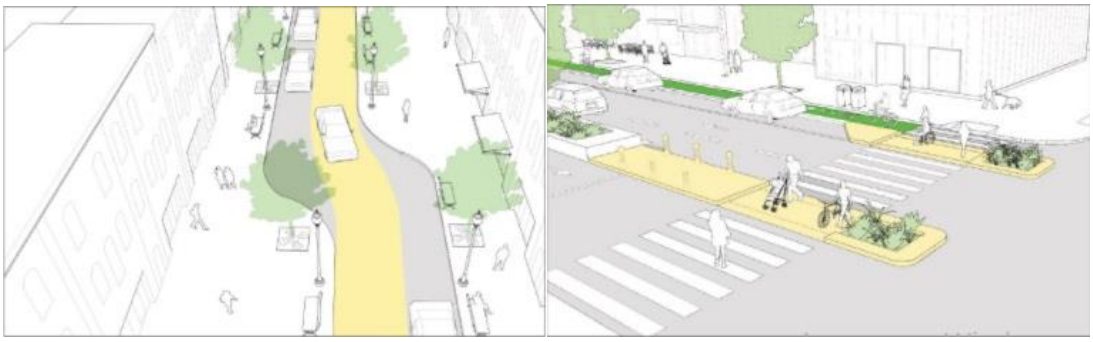


Figure 13. Lane shift (GDCI, 2017).

Figure 14. Refuge island (GDCI, 2017).

Figure 15. Increased corner radii (GDCI, 2017).

Figure 16. Raised crossing with curb extensions (GDCI, 2017).

7. Conclusions

By writing the concluding chapter for this study I would like to briefly discuss the research process based on the methodology that was used and the results that were obtained by conducting this research project. Also, it would be good to suggest some ideas for future research and mention the type of data or knowledge that this research could be benefitted from.

Since the research design chosen for this project was normative in its nature, it was important to demonstrate the existing state of things and suggest solutions that would help to improve the existing situation. In order to avoid bias while doing so, it was decided to conduct this research based on qualitative interviews, where the meaning making power were the interviewees and their responses. The empirical data obtained from the interviews allowed me to identify the main issues and to interpret them based on the existing knowledge about the overhead pedestrian bridges, the reasons why they are usually built and their possible impacts on the urban realm. The theoretical framework of transit-oriented development was chosen to interpret the results and make suggestions for changes. The key concepts for this research – pedestrian accessibility and pedestrian safety allowed me to identify the two main dimensions within which the issues regarding the overhead bridges constructed in the city of Baku were thought to be examined. Since, the issues regarding these concepts are usually strongly connected to the problems in the transportation sector and the way traffic is organized in the city, this research touched quite a wide range of problems and concepts that are not central for this research but are important for understanding the raised research problem. These concepts are shown and defined in the Glossary.

Generally, it is understood that the construction of the overhead pedestrian bridges in Baku is strongly tied to the quite noticeable car-dependency and the reluctance of the city

authorities to solve this problem as soon as possible. It was demonstrated to the reader that the existing trends in transportation planning in the city of Baku are more dealing with the consequences of uncontrolled motorization than implementing groundbreaking reforms that could improve traffic for all social groups and ensure safety and accessibility for pedestrians and cyclists. As it was mentioned in the Chapter 6, on the institutional level the transportation planning is fragmented and lacks cooperation of different governmental bodies. Such a division of roles without coordination by a central body explains the reason why Baku still lacks a public transport authority (PTA) and a strategic plan ensuring sustainable development of the city.

Since this research was built based on qualitative data, I would suggest designing a research on the overhead pedestrian bridges in the context of Baku based on quantitative research methods or a combination of the two research traditions. This research could be benefitted more by statistical and geospatial data on the city of Baku. Unfortunately, it was not possible to acquire such a data for this research due to a number of bureaucratic issues that made it extremely tough to reach those people who could help with finding such a data. In case it will be possible to find such a knowledge, it would be good to calculate the numbers of accidents between cars and pedestrians at locations with grade-separated facilities located in Baku. This could demonstrate the extent to what pedestrians use the overpasses and the underpasses and help making the importance of crossing the roads at grade more explicit to the decision makers. Also, calculations based on quantitative data could show the capacity of the existing roads and allow to demonstrate whether the existing strategies with road-widening are effective or not. As it was mentioned in the research, the overpasses designed in the urban areas can create a number of issues for pedestrians regarding pedestrian safety and accessibility. Despite this, it would good to have such facilities on multilane highway roads and using quantitative data could be helpful for identifying the right locations for constructing these facilities.

It would be good to add that this research could be also benefitted from qualitative data based on the interviews with vulnerable groups such as the people with disabilities, the elderly, the women with pregnancy and parents with children. A direct communication with such groups regarding the extent to what the overhead pedestrian bridges are safe and accessible for them would give us the knowledge about the issues faced by these people while being forced to cross the roads using grade-separated facilities by the existing design of pedestrian infrastructure.

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9. Appendices

Appendix I

QUESTIONS	OPTIONS
1. Do you use the overhead pedestrian bridges to cross the road?	**A.** I always use the overhead bridges **B.** I try to avoid using them **C.** I use them any time it seems the best way to cross the road **D.** I usually use them but first I try to find an alternative way e.g. jaywalking
2. What could influence your decision not to use the overpasses?	**A.** The possibility to jaywalk (e.g. gaps in traffic) **B.** Time limitations **C.** Ascending and descending required in case there is no elevators or escalators on the overpass **D.** If the facility would be in a long distance from me
3. What are the main factors influencing your decision to use the overhead bridges?	**A.** Heavy car traffic **B.** Fences and barriers along the road, fines **C.** If the overpasses is located right on my way to somewhere **D.** I would use the overpass whatever the case
4. Imagine a situation when you have a nice opportunity to jaywalk (huge gap between cars, low collision risks). What would be your decision?	**A.** I would use the overpass in all cases **B.** I would not hesitate to jaywalk **C.** I would jaywalk in case I am in a hurry **D.** I never use the overhead bridges
5. What would you call the main reason for the construction of overhead bridges?	**A.** Safety and comfort of both pedestrians and drivers **B.** Poor road traffic planning **C.** High-scale motorization of the city **D.** High population density at some locations
6. Imagine that you have a super power to change the existing traffic infrastructure. What would you do?	**A.** I would design more overpasses and underpasses **B.** I would widen the traffic roads **C.** I would design signalized zebra crossings with refuge islands **D.** I would change nothing, it is all good
7. To what extent do you see Baku as an accessible and walkable city (apart from the Seaside Boulevard and the Fountain's Square)?	**A.** Baku is an accessible and comfortable city **B.** The existing conditions are quite fine **C.** The level of accessibility is quite moderate, there is an urgent need for changes in planning **D.** It is quite tough to be a pedestrian in Baku
8. Do you agree that the overhead pedestrian	**A.** Totally agree **B.** Partly agree

bridges make Baku an accessible and walkable city?	**C.** They just relatively improve the situation **D.** Disagree
9. Would you agree if the one said that in the existing situation the overhead pedestrian bridges serve for the good of pedestrians, not drivers?	**A.** Yes, totally agree **B.** Partly agree **C.** Totally disagree **D.** Partly disagree
10. How would you assess the overhead pedestrian bridges that you used before in terms of accessibility?	**A.** They are accessible and provided with all required facilities like the elevators and escalators **B.** They are inaccessible due to the lack of escalators and elevators **C.** They are inaccessible due to the bad location **D.** The overhead pedestrian bridges are generally uncomfortable facilities

Appendix II

SUGGESTION	NUMBER OF PEOPLE
Better public transport	19
Cycling lanes	13
Paid car parking	10
Better informing the population about traffic rules	10
Wider sidewalks for pedestrians	8
Reduction of the speed limit	8
Road signals with buttons	7
More public transport routes	7
Increasing awareness of people about the issues that can be created by uncontrolled motorization	6
Reducing the existing high reliance on the private vehicles	6
Increasing the number of the "3 in 1" pedestrian crossings	6
Expanding the metro system	6
Construction of alternative roads and highways	4
Shift the priority to pedestrians	4
Paid highways	3
Paid entrance of private cars to the city centre	3
Higher standards for acquiring driver licenses	2

Appendix III

QUESTIONS	ANSWERS			
	A	B	C	D
1. Do you use the overhead pedestrian bridges to cross the road?	7	5	15	3
2. What could influence your decision not to use the overpasses?*	2	3	7	14
3. What are the main factors influencing your decision to use the overhead bridges?*	17	2	0	10
4. Imagine a situation when you have a nice opportunity to jaywalk (huge gap between cars, low collision risks). What would be your decision?	8	8	12	2
5. What would you call the main reason for the construction of overhead bridges?*	13	9	7	0
6. Imagine that you have a super power to change the existing traffic infrastructure. What would you do?**	4	6	14	0
7. To what extent do you see Baku as an accessible and walkable city (apart from the Seaside Boulevard and the Fountain's Square)?	1	2	16	11
8. Do you agree that the overhead pedestrian bridges make Baku an accessible and walkable city?	1	8	13	8
9. Would you agree if the one said that in the existing situation the overhead pedestrian bridges serve for the good of pedestrians, not drivers?	0	12	13	5
10. How would you assess the overhead pedestrian bridges that you used before in terms of accessibility?*	7	7	4	10

*Some respondents gave multiple answers or decided not to answer to these questions. "0" means that nobody chose these options.