Pedestrian Survey: Identifying pedestrian knowledge, perceptions of and attitudes on road safety in Baku

Baku, Azerbaijan

2016-2017
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<tr>
<td>AMAK</td>
<td>Azarbaycan Milli Avtomobil Klubu – The National Automobile Club of Azerbaijan</td>
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<tr>
<td>AZN</td>
<td>Azerbaijani Manat (national currency of Azerbaijan)</td>
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<td>EASST</td>
<td>European Alliance for Safe and Sustainable Transport</td>
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<td>FIA</td>
<td>The Fédération Internationale de l'Automobile (International Automobile Federation)</td>
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<td>WHO</td>
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Acknowledgements

The study on road safety and pedestrian needs assessment was made possible due to the support by the European Alliance for Safe and Sustainable Transport (EASST).

AMAK would like to extend its gratitude to a broad array of collaborators who have contributed to the successful delivery of the project. The study mission appreciates the tedious work of the following data collection specialists, who administered pedestrian surveys: Valeh Ismayilov, Zumrud Akbarova, Ahmad Mansurov, Mehriban Nasibova, Samir Ahmadov, and Ruslan Guliyev. Additionally, Fatima Mahmudova and Asmet Qulu-zadeh helped with coding and data entry. AMAK is thankful to Yuliya Aliyeva for her immense contribution to the development of research methodology and questionnaire design, to Project Consultant Bayaz Zeynalova for her valuable feedback throughout the project implementation, including advice on the execution of the quantitative tools, training of surveyors, in addition to her direct involvement in generating SPSS outputs for statistical analyses of the survey findings, in collaboration with Seymur Javadov. Research Supervisor Arzu Jafarli oversaw the overall research mission, providing guidance to the team of data collection specialists, developed the strategy of qualitative research methods and summarised findings of the study in the final report.

Particular thanks are due for the following participants of the in-depth expert interviews, for taking the time to meet with our study team and share their thoughts and expertise on the broader issues of road safety and pedestrians’ road crossing decisions: road safety expert Azer Allahveranov (“Hayat” Humanitarian NGO), Kamran Aliyev (Head of the Department of Public Relations of State Road Police), Agil Rahimov (driver training expert), and two independent international transport and road safety consultants who wished their names to be kept confidential.

Lastly, AMAK would like to acknowledge each and every one of the 1200 respondents for the time and initiative they took to give their feedback on the survey questionnaires, without which the rest of the research would not have been possible.

Opinions expressed in this report are those of authors and may not necessarily reflect the official position of the organizations they represented at the time of the interview.
Executive Summary

Secure roads, planned infrastructure, and safety of a broad array of road users, including pedestrians and drivers, are imperatives of a healthy and democratic society. Unfortunately, the global demand for safe mobility of pedestrians, vehicles, drivers and passengers have not been fully met and remain a red flag for many countries worldwide, whereas more alarming statistics on pedestrian fatalities and vehicle crashes - almost 90 percent of all road casualties on a global scale - are registered in the developing economies, although the problem is not unique to low-income countries only. Some of the most established high-income democracies of the globe, including the United Kingdom, Japan, and Nordic Countries have better road safety performance indicators than the others. In most of the developing countries, however, pedestrian safety is not a matter of high priority and governments have oftentimes neglected negative consequences of traffic casualties. To address the gap in the response level to road safety triggers around the globe, international efforts have recently intensified to call for more consolidated policy actions to reduce mortality toll caused by road accidents. The United Nations General Assembly declared 2011-2020 the Decade of Action for Road Safety aiming to first stabilise and then reduce global road traffic deaths. Half way through this milestone, the road crashes and pedestrian deaths, although preventable, still remain one of the major social crises of the modern world. Nearly 1.3 million people are killed on the world’s roads each year. Tragically, this number includes approximately 80,000 children who die on the roads every year, oftentimes during their commute to or from school. Studies show that, among the road users, pedestrians are the most vulnerable of all and are 1.5 times more likely to be killed as a consequence of motor vehicle-involved accidents than car passengers on each car ride.¹

In Azerbaijan, reports indicate “traffic accidents reach alarming level”². Road accidents place a heavy burden on the country’s economy, but most importantly – on every individual household affected in one or another way by the negative effect of traffic accidents.

A limited number of organisations in Azerbaijan, including AMAK and a local NGO Hayat, are implementing community awareness raising projects to educate the broader public, including school teachers and students of road safety regulations and best practices. Observations show that safety rules are massively disregarded by the majority of the population. Paradoxical as it may seem, the study has revealed that pedestrian negligence of marked crosswalks is not attributed to the lack of awareness of the road regulations and particularly pedestrians’ crossing rules. Many respondents showing decent level of knowledge of street signs that allow pedestrians to cross the road, still reported to violate the signs and pedestrian crossing regulations. As a growing bulk of evidence calls for a broader consolidation of efforts from the government, lawmakers, community-based organisations and civil society, worldwide, in order to more effectively tackle pedestrian safety concerns, the National Automobile Club of Azerbaijan (AMAK) has tapped into one of the most overlooked segments of pedestrian safety – the lack of empirical evidence in this area. In order to advise on future policy reforms and propose and/or design effective program interventions aimed at improving road safety while eliminating pedestrian fatalities, AMAK deployed a research mission to conduct a study on road safety and pedestrian needs assessment in the capital Baku. The research methodology entailed a mixed methods approach, using qualitative and quantitative tools to examine pedestrians’ knowledge, perceptions and attitudes with respect to road safety. Pedestrian surveys were conducted among 1200 individuals in 12 designated areas of the city complemented by 5 in-depth interviews with subject-matter experts to gather

¹ Beck LF, Dellinger AM, O’Neil ME. Motor vehicle crash injury rates by mode of travel, United States: Using exposure-based

² http://www.azernews.az/nation/63321.html
relevant knowledge on the road safety situation in Azerbaijan and identify implications for future policy practices in this area.
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Introduction

National Automobile Club of Azerbaijan

The National Automobile Club of Azerbaijan (AMAK) is a registered non-profit organisation operating in Azerbaijan and specialising at providing full-scale roadside assistance, motoring advice along with exclusive benefits to the club members. A member of the International Automobile Federation (FIA), AMAK is devoted to promoting the culture of car, self-drive and touring clubs as part of cultural tourism in the country and stands for the interests of drivers and the broader community of road users, advocating for policy changes at the upper hierarchies of the national government.

Having joined the European Alliance for Safe and Sustainable Transport (EASST) as a partner in 2016, AMAK has been actively promoting road safety via different educational and research projects aiming to improve the road safety culture among drivers and pedestrians in Azerbaijan and foster participatory involvement and collaboration of relevant government agencies (including law enforcement authorities and state healthcare agencies), civil society organisation, educational institutions (universities, schools, kindergartens) and mass media.
Global road safety trends

The global outlook on pedestrians’ road safety, according to published data, is disquieting and not very optimistic. The recent edition of the annually conducted road safety report ³ stated that each year more than 1.2 millions people around the world die in a road fatality. Despite growing efforts to stabilize the road traffic environment, especially in big metropolitan areas, and to modernise inner-city and intercity road infrastructures across the countries of developed economies and emerging markets, trends in fatalities among pedestrians remain alarming. While there is remarkable improvement in the driver performance indicators, including car occupants’ safety across 32 selected countries ⁴ in the Americas, Europe, Oceania, Africa, and Asia, where progress was assessed towards safety standards, the amount of pedestrians killed in road crashes increased in a number of countries. In the long-term analysis of safety and mortality, the prevalence of road fatalities has decreased in many countries around the globe during the last decade, with some countries, like the United States, even noting a record drop in road death and injury tolls in 60 years ⁵, while in 32 IRTAD countries that number fell by 42% between 2000 and 2014. While taken as a standalone factor, these figures obviously show significant improvement of global road safety patterns, which experts attribute to systemic implementation of holistic reforms, infrastructural development, combined public health efforts, training of drivers, public awareness among pedestrian and the general public as well as economic growth. However, the short-term analyses of the road collisions and pedestrian trauma management, precisely on a year-by-year basis, reveal a decline in the road and pedestrian safety outcomes in recent years. For instance, even though the incidence of road fatalities in 32 IRTAD countries fell by nearly 9 percent between 2010 and 2014, the road death toll skyrocketed in nearly 60 percent of these countries in 2015. Among all the road users, pedestrians are most at risk of being injured or killed during their commute. While road management has seen major progressive developments over the course of the last two decades, reports on pedestrian fatality say that “seventy-four percent of pedestrian-vehicle crashes occur where no traffic control exists”⁶.

The majority of pedestrian death occurrences happen in urban settings as opposed to rural areas less exposed to heavy traffic congestion than big cities. Additionally, the WHO report indicated that nearly 90 percent of road casualties occurred in low-income and middle-income communities. Even in developed countries, statistical data shows that people from economically less fortunate families and backgrounds are at higher risk of road injury or death. Pedestrian risk factors vary from country to country, but there are some key basic commonalities. As such, research suggests that in general, children and elderly are most frequent victims of road traffic injuries and other more negative circumstances. ⁷ Road traffic injuries are the primary cause of death among young people age 15-29 ⁸ and the second leading cause of injury and death among people 65 and

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⁴ The 32 countries are member states united under the International Road Traffic and Accident Database (IRTAD) of the International Transport Forum (ITF/OECD) Source: ITF (2016). See above.
⁵ AlertDriving (December, 2010). U.S. traffic fatalities fall to lowest level in 60 years.
http://www.popcenter.org/problems/pedestrian_injuries/
Understanding pedestrian perceptions and behavioural choices is essential to the analysis of the road traffic safety discourse. Recent studies suggest that unsafe pedestrian behaviour is the primary cause of injuries and fatalities. In a study that looked at 7,000 cases of pedestrian-vehicle crashes in Florida, USA, 80 percent of cases were caused by pedestrians’ actions. A similar study that analysed police report on crash data from the period between 1997 and 2000 in North Carolina revealed that 59 percent of injuries and fatal consequences were attributed to pedestrians’ fault, whereas in 36 percent of crashes drivers were at fault, and, finally, both drivers and pedestrians were found at fault in only 9 percent of cases. However, these findings are not adequately perceived and have been met by fierce controversy and criticism on most social media accounts. Some argue that most fatalities involving pedestrians occur because of the poor road design of most urban settings that are strictly driver- and vehicle-oriented, but do not accommodate a pedestrian flow. Others claim that driver inattention and their failure to yield result in negative and irreversible outcomes for pedestrians.

In spite of tangible efforts to minimise the incidence and prevalence of road traffic fatalities, road crashes remain major catalyst of death among pedestrians in many countries of the world and, therefore, the needs of pedestrians across the globe must be closely looked at and addressed sufficiently and holistically. If no tangible measures are taken, the WHO predicts road crashes to increase rapidly over the course of the next couple of years and become the seventh leading cause of mortality in the world by 2030.

General overview of the situation with pedestrian safety in Azerbaijan

The WHO Global status report on road safety 2015 states that 31 percent of road crashes involving pedestrians resulted in their death, the second most at-risk category of road users in Azerbaijan, followed by car occupants who constitute 36 percent of annual road death tolls.

Despite the government’s best efforts to implement policies that would significantly reduce the incidence and prevalence of road fatalities, there has not been meaningful progress in the prevention of traffic crashes during the recent years in Azerbaijan, although the number of road death tolls registered in 2016 had slightly dropped in comparison with previous years. The Baku Road Police report has revealed the total of 1,848 road-traffic accidents registered across the country for the last 11 months of 2016, which is 9.1% less than the number of road crashes that occurred in 2015. Of the total amount of crashes per year, 621 were registered in the capital Baku in 2016. The report shows that 43% of the road-traffic crashes involved pedestrian crashes.

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leaving 283 pedestrians dead and 591 injured. All in all, 49 children and teenagers died and 181 were injured as a consequence of the crashes registered across the country.

Other fatalities tackled by the report entailed 12.8% of accidents, including 238 crashes, with 54 persons dead and 278 injured that happened due to the violation of road traffic rules related to passing the cross-roads, and 1.8% or 34 accidents leaving 15 dead and 32 injured due to drunk driving. While drunk driving constitutes a considerable portion of worldwide road fatalities, where reportedly every two minutes a person is injured in an alcohol-impaired road casualty, Azerbaijan, according to the Baku Road Police data, has been little affected by this problem. The WHO 2015 country report, however, has stated 31 percent of road traffic fatalities in Azerbaijan involved drink-driving, as detected by random breath testing and police checkpoints. The Azerbaijani government has over years strengthened punitive measures against drivers and pedestrians, who do not abide with traffic safety regulations, by imposing increased penalties and fines to reduce the incidence and prevalence of traffic crashes in the country. One of the recent developments in this area is the law bill submitted by the State Road Police to the National Parliament (Milli Majlis), which offers to increase penalties imposed on individuals, who cross the road by illegally jumping over steel concrete partitions installed on the roadways with high speed limits, fivefold to assume the proposed amount of AZN 100 in total. The bill is currently under review at the Milli Majlis and is expected to be further discussed during the spring plenary session. For all other types of pedestrian jaywalking, the amount of fine is proposed to remain as is - AZN 20.

Overall, to enhance improved road safety across the country, the government of Azerbaijan has undertaken a number of meaningful actions. Azerbaijan joined the Decade of Action for Road Safety (2011-2020) in May 2011. In recent years, the law enforcement mechanisms pertaining to law-abiding actions and behaviour by all participants of traffic movement have become more rigorous and strict. Despite the lack of sufficient infrastructure to ensure pedestrian safety throughout the entire city of Baku, the country has seen tremendous improvement of the public transport system and road infrastructure in comparison with a decade ago. In keeping with the commitment to improve the road safety measures in the capital of the country, in 2015 the President of Azerbaijan signed a decree on the establishment of a new transport agency under the Cabinet of Ministers - the Baku Transport Agency (BTA). BTA assumes the overall control over the compliance with the road regulations and is responsible for the effective management of pedestrian and public transport flow in the administrative territory of the city. Looking at the bus stop, metro connection and vehicle routes as an integrated environment, the Baku Transport Agency aims to redesign the existing system in an effective and efficient manner to ensure a safe pedestrian infrastructure. The Agency is also responsible for the Intellectual Transport Management Centre (previously under the authority of the Transport Ministry). Another significant development in the road safety system in Azerbaijan is the establishment of the Road Safety Working Group appointed to develop a National Road Safety Plan for 2017-2020.

Nevertheless, these measures have not proved to be the panacea for road crashes, while pedestrian fatalities remain a primary concern for road safety in the country.

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Project objectives

In view of growing interest towards accurate road safety data collection process, road traffic strategies and trends in pedestrian behaviour, existing gaps in road safety data and the need for evidence-based decision making, AMAK has initiated a research project to assess one of the most vulnerable segments of road users – pedestrians - in the capital city of Azerbaijan. This report is an attempt to take a closer look at some of the most pressing risk factors along with mechanisms for their mitigation in order to inform future policy actions and civil society initiatives. The purpose of the study was to analyse the gaps in pedestrian road safety, identifying pedestrians’ needs that would help to improve pedestrian and road safety, as well as to propose potential intervention mechanisms. Based on findings of the project, the research team has developed a list of recommendations for relevant government agencies.

The study on road safety and pedestrian needs assessment aimed to investigate pedestrians’ knowledge, attitudes and behaviour with regards to road safety in Azerbaijan, in particular about safe road crossing through a mix of qualitative and quantitative methodologies. As part of the project, 1200 pedestrians have been surveyed in 12 districts of Baku in June 2016. This project is the first and only research initiative on road safety implemented in Azerbaijan to date, with the largest sampling size covered.

Research Methodology

Quantitative tools and administration

For the purposes of quantitative data collection (surveys), AMAK, in consultation with the Baku Road Police Department, has identified the location of the interview mission across the city’s 12 districts as junctions of the highest pedestrian density, primarily near major pedestrian crossings. The full list of districts is listed below:

1. 28 Mall area
2. Azerbaijan Drama Theater "Besh mertebe" area
3. Ahmadli district/ 8th Kilometre Grand Bazaar area
4. “Nizami” Cinema pedestrian crossings
5. "20th January" / Baku “Velotrek” bicycle race course area
6. “Khatai” metro station area
7. Azerbaijan Technical University area
8. Baku Fountains Square
9. "Yashil bazar" Grand Market area
10. Baku Boulevard
11. Sabunchu-Zabrat residences
12. Nobel Avenue

Interviewers were instructed to approach pedestrians randomly with a questionnaire that covered 17 questions in general and assumed to take 6 to 7 minutes to survey one respondent. In each of the twelve districts, 100 respondents took part in the survey. To administer the interviews, 6 people were hired to
conduct the surveys, with each surveyor being responsible for two designated districts and 200 questionnaires or interviewees per area. Overall, 1200 people participated in the pedestrian interview.

Qualitative approach

In the qualitative phase, the assessment of the current state of road safety and pedestrians’ perception of personal safety at road crossings was conducted using in-depth interview techniques. Qualitative tools offer added insights to findings of quantitative survey methods and are utilised within this study to complement a more thorough assessment of perceptions, behavioural models, attitudes as well as unmet needs for effective and efficient road safety interventions in the Azerbaijani context.

In the framework of the current needs assessment project, the total of five in-depth interviews were held.

Each expert was asked to respond to the group of questions listed below. Prior to each interview, SMEs were provided with the preliminary pedestrian survey results featured in graphs and charts.

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<td>• Baku</td>
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<th>Highlights:</th>
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<tr>
<td>• 12 hot spot areas,</td>
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<td>• 100 respondents in each area</td>
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<th>Expert judgement:</th>
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<td>• 5 subject matter experts interviewed</td>
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1. Can you describe the current situation with regards to pedestrian road safety in Azerbaijan? What activities is the organization that you are representing right now implementing in this regard?

2. In your opinion, what are the main pedestrian road safety problems in Baku and how, do you think, they can be eliminated?

3. There are underground and over-ground pedestrian passes, zebra crossings and traffic lights in many areas in Baku. However, despite all of the above, many pedestrians do not use this infrastructure. In your opinion, what should government institutions do in order to improve pedestrians’ behaviour (in particular on crossing the road)?

4. We talked about the role of government agencies. What about public unions, media, educational institutions, businesses – what do you think they should be doing and how they should be contributing to ensuring pedestrian road safety?

5. What is the main reason of road accidents that involve pedestrians? Who is guilty – drivers or pedestrians?

6. In your opinion, what is the level of knowledge of pedestrians on road safety?

7. What needs to be done to educate pedestrians on road safety and which organizations should be doing this?

8. What do you think about making pedestrian and/or driver penalties stricter in order to decrease the number of accidents involving pedestrians?

9. Please, share your thoughts about effectiveness of intervention methods like installing more cameras and speed radars, speed bumps and other facilities in order to decrease speed limits on the roads?

10. What are your organization’s/company’s plans for the next couple months in terms of implementing activities that would decrease the number of road accidents involving pedestrians?
Data collection

As specified above, the data collection process was administered through two different interview tools:

- Quantitative surveys (pedestrian interview) and
- Qualitative research technique (in-depth interviewing or subject-matter expert interviews)

Due to the density of traffic flow in the capital city, Baku has been chosen as the primary target area for the purposes of the current study. Additionally, statistical data and observations from key actors (road users, not-for-profit agencies, media, independent experts) show majority of traffic fatalities occur in Baku. According to the most recent data released by the Baku Road Police Department, of the total number of 1,848 road-traffic accidents registered across the country for the last 11 months of 2016, 621 accidents happened in Baku only. In view of this, the research mission has been deployed in the capital Baku. Pedestrian safety in the suburbs of Azerbaijan may be the subject of future research and program interventions, however, has not been studied in detail as part of the current needs assessment project.

For pedestrian surveys, respondents were selected from among individuals at the time or before crossing a pedestrian pass. Prior to the commencement of the formal data collection process, Interviewers had been trained over the course of two workshop. Pilot questionnaires were distributed among 30 people to pre-test the clarity of the designed questions to randomly approached individuals in order to avoid misleading and biased answers as well as to prevent inaccuracy of incoming data. Based on the pre-test results, the questionnaire was slightly amended to accommodate respondents’ and surveyors’ feedback and adjusted to the best judgement of the research team. Data collected during piloting was used solely for testing purposes and has not been included in the analysis of the survey results.

For the in-depth interviews, the subject matter experts were selected from a diverse array of affiliations, including the government, a not-for-profit sector, media, and independent consultants. Four interviews were organised face-to-face and one in-depth interview was conducted over a phone. All of the interviews were audio recorded for quality and reporting purposes, with prior verbal consent obtained from each SME to be interviewed.

Findings

Survey Analyses

This section details all the questions asked along with percentage and specifics of respondents’ answers. We started with gathering personal data on study demographics, such as gender of respondents and age group they (were perceived to) belong to. Since the survey was conducted in Baku, it only intended to cover the pedestrian population of the capital without going further into rural areas of the country. However, some of the respondents stated that they were visiting at the time of the interview. The data collection team did not record an exact number or a percentage of pedestrians who reported not being Baku-based residents. However, the amount of the latter was minimal.
PERSONAL DATA OF RESPONDENTS

in total, 1200 people have participated in the survey. Among them, 49 percent of respondents constituted women and 51 percent were men.

![Q1. Gender of Respondents](image)

Figure 2: Respondents’ Gender

The research team aimed for equal representation of each age group in the survey, however, as indicated in Figure 3, senior people age 55 and older, constituting less than 10 percent of all the respondents interviewed, are not proportionately represented in the final data. During feedback and survey follow-up meetings interviewers who administered the surveys noted that most elderly pedestrians had refused to participate in the interview and, to a certain degree, had demonstrated scepticism about the importance and potentially positive impact of the survey on improved road safety. Paradoxically, as mentioned in previous sections of this report, the elderly pedestrians are faced with a greater risk of being injured or killed in a traffic fatality than relatively younger pedestrians and the research team initially assumed the sampling size of the population group in the age category of 55 and older would be firmly large. However, as seen from the diagram below, this assumption proved to be slightly erroneous.
Question 3 asked respondents whether they drove a car. This question was asked to better understand differences (if at all) in behavioural trajectories of pedestrians who also drive and, along with their experience as pedestrians, have a different perspective on road safety when they are car occupants. Figure 4 shows the percentage of pedestrians who can drive, per gender. Only 18 percent of respondents said they drove. Only 7 percent of women respondents noted they could drive, while 29 percent of male respondents stated they drove.

Question 5 asked respondents how many times they had been fined for violating crossing rules. Nearly 67 percent of respondents stated they had never been fined, while 22.6% revealed that they had been fined only once, whereas 9.8 percent of all respondents said they had been fined for violating road crossing regulations for more than once. Contrary to the popular belief and reports from around the world that a senior population poses a greater risk to the movement of traffic and tends to violate the crossing rules, in the context of the current survey the elderly population has reported a more compliant behaviour at major crossing points than the younger generation. The overwhelming majority of the elderly respondents age 55 and over (94.6%) stated they had never been fined for traffic rule violations as pedestrians.
Question 6 was to find out whether a respondent has ever been hit by a vehicle. Eighty-five percent of respondents have never been a victim of a vehicle-pedestrian crash. Fifteen percent of the interviewees, however, stated they had been hit by a vehicle at some point in their life. The question did not intend to elaborate further on the frequency or the total amount of times that respondents had encountered an accident, where they were struck by a vehicle. The chart below provides the breakdown for each response option, by gender.

A study\textsuperscript{19} of road fatalities per gender across EU27 has revealed that road mortality rates are higher among men than among female road users, noting approximately 51 percent of the EU population are women, while only 24 percent of women are victims of road deaths as opposed to male fatality rate reaching 74 percent, whereas it is specified that most men face road casualties while driving a vehicle where women fatalities occur as they walk as pedestrians or happen to be in a car as passengers. The survey conducted among Azerbaijani respondents has not, however, revealed significant differences in incidence and prevalence rate between men and women being hit by a car. The current survey also rules out statistically significant grounds for hypothesizing that in Azerbaijan men, regardless of age, are hit by car more often than women, as suggested by the US Department of Transportation study\textsuperscript{20}. 
ATTITUDES AND BEHAVIORS

The following group of questions seek to measure pedestrian’s attitudes and behaviours in order to better understand their road crossing habits and decisions as to whether or not they follow safety guidelines and resist or actively avoid danger while walking during their daily commute.

Question 7 reads: “When you need to cross the street, how often do you search for traffic lights or pedestrian crossings?” This is a multiple choice question and offers an array of response options. Classified by gender, the responses for both gender segments altogether were as follows: 1) every time I walk - 46%; 2) most of the time – 42%; 3) hardly ever – 9%; and 4) never – 3%. The breakdown of the responses is shown in Figure 7 below.
We tried to analyse if there was any correlation between pedestrians with ability to drive and their inclination to seek for street lights before crossing a street as pedestrians (not as/while they drive, per se). The survey data suggests that indeed, 55% of respondents who drive search for traffic lights and/or pedestrian crossings every time they walk before they cross the street as opposed to 44.6% of respondents who do not drive at all. However, further analysis of the response data did not reveal a strong proof of an assumption that people who drive are more careful pedestrians when they walk outside of their driving route/schedule. In fact, only 31.2% of driving respondents said they looked for lights and/or crossings most of the time, while 43.8% of those who do not drive at all stated they sought street signs and traffic lights allowing them to cross. Even though it is not ruled out that most people who drive pay attention to pedestrian signage during their walking commute, the survey data lacks sound generalisability that would allow to claim assertively that driving individuals are more responsible pedestrians.
Figure 8: Percentage of respondents who search for street lights/crossings, based on their driving capacity

The following question was addressed to those who stated they hardly ever or never at all looked for traffic lights or pedestrian crosswalks or any alternative signs allowing pedestrians to cross a road, before actually crossing.

Question 8 states: Why do you choose not to use traffic lights or pedestrian crossings to cross the road? The multiple choice question offered several options to choose from. Forty-seven percent of respondents claimed they did not follow the street signs and lights, because traffic lights and pedestrian crossings are either not available or accessible, or not located nearby the areas they usually walk. Twenty-six percent of interviewees said they did not have time for that as they were usually in a hurry. Other responses included: “they are not convenient (e.g. located too far, or inconvenient for wheelchairs, strollers, and individuals who have various health issues)” -20 percent; “drivers always give way to pedestrians regardless of where you cross (so there is no need for pedestrians to search for traffic lights)” -7 percent; “drivers do not stop on the lights and signals, so there is no point in using them” -6 percent. A more detailed breakdown of all responses is provided in Figure 9.
In this question, the percentage of respondents who noted to simply follow the flow and cross when everybody crossed a road, while stopping when everybody stopped, was not significantly high and only constituted 1 percent of all the respondents. Nonetheless, it is noteworthy that studies on road safety and urban road user behaviour draw attention to individuals whose road crossing decisions are heavily dependent on collective action\textsuperscript{21}. Pedestrians following a “leader” - a phenomenon largely referred to as “herd mentality” – is common in observations of pedestrian’s crossing behaviours. Usually people who stand at the front line of an intersection are figuratively appointed as leaders (“frontliners”) who lead the rest of the pedestrians positioned behind (also hypothetically referred to as “backfielders”) will follow. Once “frontliners” move forward, their action will cause a corresponding movement among “backfielders” without the latter giving a serious thought to street signs and/or pedestrian lights before heading towards the traffic flow and obviously violating pedestrian laws.\textsuperscript{22}

The following question (Question 9) reads: Why do you choose to use the proper pedestrian crossings? Those who stated in Question 7 that they hardly ever or never at all looked for traffic lights or pedestrian crosswalks or any alternative signs allowing pedestrians to cross a road, were omitted from responding to Question 9, as instructed. Reasons for pedestrians’ choosing safe road behaviours are detailed in the breakdown below.

Q9. Reasons for using pedestrian crossings

<table>
<thead>
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<th>Reason</th>
<th>Percentage</th>
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<tr>
<td>Personal safety</td>
<td>78.9%</td>
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<tr>
<td>Fear of fines</td>
<td>28.5%</td>
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<td>Responsibility toward the driver</td>
<td>11.7%</td>
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<tr>
<td>Other: it's requirement</td>
<td>0.3%</td>
</tr>
<tr>
<td>Other: due to personal habits and character</td>
<td>0.3%</td>
</tr>
<tr>
<td>Other: because there is no other way to cross</td>
<td>0.1%</td>
</tr>
<tr>
<td>Other: only when police is around</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Figure 10: Reasons why pedestrians choose to use traffic lights and crossings

Question 10 reads: Do you engage in any of the following activities while crossing the road? Respondents were offered an array of multiple choice answers. The response percentage for each option is as follows: 1) looking at your phone - 19.4 percent; 2) talking on your phone - 35.8 percent; 3) not looking at the traffic when crossing – 4 percent; 4) ignoring traffic light indicator/ walk sign; 5) running across the street to beat the coming traffic – 4.5 percent; 6) I do not do any of these – 48 percent.
This next group of questions look at respondents’ level of knowledge and degree, to which their understanding of the existing road safety regulations is up to date and accurate. The questions in this category are designed with a purpose of assessing the responses against the average answers provided in the previous section (Attitudes and Behaviours) to draw a parallel between pedestrian choices and their level of awareness. We hypothesised that pedestrians’ knowledge of road rules would have a negative correlation with their unsafe behaviours. In other words, we built from an assumption that an informed pedestrian tended to demonstrate a higher degree of compliance with safety rules and not to violate crossing regulations.

Question 11 asked respondent to evaluate how confident they felt they were about their knowledge on traffic rules for pedestrians? Respondent were asked to choose only one response option that most accurately described their level of confidence. The majority of respondents (56%) stated they were somewhat confident, whereas 32% described themselves as very confident. Only 8 percent of all respondents thought they were not confident at all, while 5% were unable to articulate their confidence level in any way. We also looked at how a pedestrian confidence level varied across gender. Further analyses of the survey data revealed that only 22 percent of all women respondents claimed they were very confident about their knowledge, whereas the majority of women (61%) said they were somewhat confident versus 42 percent of their male counterparts who were very confident leaving 52 percent of men somewhat confident about road safety rules.
The following question – ‘Which of these signs allows the pedestrians to cross the road?’ – aimed to evaluate how well respondents knew street signs. Graphic images were offered to assist the respondents in visualising the signs that allow pedestrians to cross a road. The breakdown for the correct answer (the last image from left to right showing a man walking along the crosswalk) is provided in the charts below. Figure 13 indicates the percentage of the correct answer, classified by gender.
Figure 13: Percentage of correct responses to the question about the crossing sign

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>69%</td>
<td>71%</td>
<td>68%</td>
<td></td>
</tr>
</tbody>
</table>

Q12. Percentage of correct answers to the question about the crossing sign

*Correct answer is the last (3rd) image. The diagram below reflects the percentage of respondents who got the answer right.

Figure 14 elaborates more on each choice of response. When asked which sign they thought allowed pedestrians to cross a street, respondents were offered the following seven reply options:

1. All of them
2. Image 1
3. Image 2
4. Image 3
5. Images 1 and 3
6. Images 1 and 2
7. Images 2 and 3

The correct answer is option 4 (image 3).
Additionally, we looked at the relationship between driving pedestrians and their level of awareness of road and pedestrian regulations. As we expected, further analysis of the survey data confirmed our conviction that pedestrians who drive have more accurate knowledge of street signage in general and pedestrian crosswalk signs in particular. For both segments of respondents, including those who drive and do not drive a vehicle, the breakdown for the correct response to Question 11 is shown in Figure 15.
Question 13 looks to measure respondents’ knowledge as to what responsibilities they carry as pedestrians. Sixty-eight percent of respondents think that they should *cross the street on crossings, whenever possible*, while 34% think that *following the traffic light signal (green light)* is pedestrians’ duty. Twenty-seven percent of respondents stated they should *watch the traffic flow before crossing the street* and 9% suggested pedestrians should *not interrupt or delay the flow of traffic if there is no urgency for that*. Only 2% of respondents thought they had no responsibilities as pedestrians.

<table>
<thead>
<tr>
<th>Q13. What are your responsibilities as a pedestrian?</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross the street on crossings</td>
<td>68%</td>
</tr>
<tr>
<td>Follow the traffic light signal (green light)</td>
<td>34%</td>
</tr>
<tr>
<td>Watch the traffic flow before crossing</td>
<td>27%</td>
</tr>
<tr>
<td>Do not interrupt or delay the traffic without any urgency</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
<tr>
<td>No Responsibilities</td>
<td>2%</td>
</tr>
</tbody>
</table>

*Figure 15: Percentage of correct responses to a question about a pedestrian crosswalk sign, based on pedestrians’ driving capacity*

*Figure 16: Pedestrian responsibilities*
PERCEPTIONS

The final category of questions aims to assess respondents’ perceptions about road safety and pedestrian behaviour, their understanding of the role of the government, the society, media, and individual actors in the reduction of road traffic fatalities that involve pedestrians.

Question 14 asked the respondents’ opinion on what they considered to be main problems that jeopardised the safety of pedestrians in Baku. Figure 17 provides the breakdown of all responses, by gender. Over 55% of respondents think that the lack of traffic lights and pedestrian crossings, including ‘zebra’ crossings, ground-level and underground pedestrian crossings, is the primary reason that Baku streets are unsafe for pedestrians. The second major problem, according to 40.6% of respondents, is speeding, aggressive driving, and drivers not following traffic rules with regards to pedestrian crossings. Sidewalks being in bad conditions, inconvenient for use by pedestrians, or their absence altogether, along with sidewalks being occupied by cars as a parking lot is the third major pedestrian safety problem (15.2% of respondents opted for this response). Further response options included: the lack of street and area lighting OR the fear of crimes in the ground-level and underground pedestrian crossings – 10.3%, the lack of wheelchair and stroller accessibility – 8.6%, and other problems not listed in the questionnaire -6.3%. Respondents who chose the “other” response were asked to specify what other issues, in their opinion, were the main problems for pedestrians. In this category of answers, the majority of respondents attributed unsafe traffic and pedestrian movement to the fact that most people are simply irresponsible and do not pay attention to their surrounding while walking in and crossing the street. Figure 18 depicts a more detailed breakdown of all “other” responses.

**Q14. Main safety problems for pedestrians in Baku**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of traffic lights and pedestrian crossings</td>
<td>55.4%</td>
<td>51.4%</td>
<td>59.2%</td>
</tr>
<tr>
<td>Speeding and aggressive driving and drivers not following the traffic rules</td>
<td>40.6%</td>
<td>37.0%</td>
<td>44.3%</td>
</tr>
<tr>
<td>Bad or missing sidewalks, sidewalks occupied by cars</td>
<td>15.2%</td>
<td>14.8%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Lack of street and area lighting OR the fear of crimes</td>
<td>10.3%</td>
<td>8.7%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Lack of wheelchair and stroller accessibility</td>
<td>8.6%</td>
<td>8.9%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Other</td>
<td>6.3%</td>
<td>6.9%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

*Figure 17: Main problems for pedestrians in Baku, percentage by gender*
The following question (Question 15) asks respondents’ opinion regarding the ways, in which they think the number of traffic incidents involving pedestrians should be decreased in Baku? The majority of respondents (37.4%) agree that installing more traffic lights and increasing the number of pedestrian crossings and road signage will significantly reduce fatality occurrences, whereas 33.4 percent of respondents suggest more social awareness campaigns be organised through broadcast, media, training programs and enhanced education on road safety related matters. Relatively less people suggested punitive measures in response to the growing number of road traffic incidences that involve pedestrians, with 19.7% of respondents noting that drivers should be penalized more often for not giving way to pedestrians willing to cross the street, where appropriate. In contrast, 15.6% of respondents think penalizing pedestrians for not crossing the street in due places will lead to the decrease in the fatality ratio. Over 18% of respondents recommended mounting more video cameras and radars on the streets and increasing the number of speed bumps on the roads. While this number is not overwhelming, it is, however, important to draw attention towards the global concern around
alarm. WHO\textsuperscript{23} has identified speed reduction as one of its key recommendations for building safer roads. As such, it has suggested increasing the number of 30 km/h speed zones based on conviction that this can lead to the remarkable reduction in the number of crashes and are particularly effective in areas with a large flow of movement among vulnerable pedestrian groups, such as in residential areas and near schools.

On the other hand, coming back to Question 15, the responses have also revealed a certain degree of pessimism as 7.8% of respondents are undeniably convinced that nothing can be done to prevent or decrease risks to road safety in general and pedestrian safety in particular since “our people will continue to violate the rules” regardless of what policies are in place or what practices are enforced and promoted.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Q15.png}
\caption{Ways, in which fatality incidents involving pedestrians can be reduced in Baku.}
\end{figure}

Those who have chosen the “other” response, even though only a small portion of respondents (4.8%) represents that group of interviewees, were asked to elaborate further and clarify what other ways they thought would have a positive effect on pedestrian safety in Baku. Figure 20 below presents the breakdown of all the responses in this category, viewed here as respondents’ personal suggestions, that have not been offered by surveyors’ as part of the predefined list of multiple choice options. Seven people said that driving licenses shouldn’t be issued in exchange for a bribe, emphasizing that corruption should be eliminated, whereas 3 people noted that pedestrians themselves should be more responsible and should respect and obey existing laws. Four people indicated the importance of audible WALK indications and pedestrian pushbuttons to be available to pedestrians. Six respondents talked about the need for enhancing education on

road regulations, pointing out that it should start from school and pre-K age children who should be also involved in awareness raising campaigns themselves, contributing to peer-to-peer education. While 5 people spoke strongly about increasing police enforcement and control, only one person said that police officers should be politer with both pedestrians and drivers. Other suggestions included: a broader scope of public awareness initiatives, particularly through advertisements, dissemination of brochures and booklets, placing posters, educational videos, public service announcements (PSAs), creating thematic TV programs about road fatalities, pedestrian behaviours, their consequences, and suggested ways of prevention of risky road user behaviour (3 people); organising training courses for drivers (2 respondents); bringing discipline to public transport and sorting out the mess in the public transport bus system (1 respondent); increasing the number of bus stops (1 person); locating street signs in places that are visible and the view is clear to both drivers and pedestrians (1 person); installing escalators at every pedestrian crossing, to make the crossings more suitable for everyone and user-friendly (2 people). Where there is no pedestrian crossing, three people said, huge barriers should be placed along the road edge to block the pedestrian movement, while one person indicated that barriers and extension curbs should be of reduced height. Contrary to the common belief that punitive measures increase the discipline, one person suggested the amount of pedestrian fines for violating road crossing rules and regulations be reduced. Six people think continuous monitoring of bus drivers and roads in general should increase; the crosswalk time for pedestrians at pedestrian lights should be extended (2 people) and, finally, laws on road and pedestrian safety should be improved.
The following question explores the types of sources where pedestrians most typically receive information about the road safety procedures and new regulations. The response options included: TV programs and news (nearly 30% of respondents chose this option); radio programs; outdoor advertisement; relatives/friends; police inspectors on the streets; Internet/social networks (38.9%); brochures/booklets, and newspaper. A substantial portion of respondents, however, noted they did not receive any information at all (21.7%), some pointing out they were not interested in seeking such information, while others simply did not know where to
look for road safety regulations. We do not have exact figures or percentage to represent that division within the category of respondents who claimed not receiving any information of this kind.

Finally, the survey concluded with a question that aimed to check whether or not respondents considered themselves responsible pedestrians. The overwhelming majority of respondents (75.9%), regardless of gender, have demonstrated a great level of confidence and their trust in themselves as responsible pedestrians. Overall, 77.4% of male respondents think they are responsible and only 13.3% think they are not, whereas among women respondents, 74.4% said they considered themselves to be responsible pedestrians and only 11.4% stated they did not think of themselves as responsible pedestrians. Figure 22 below depicts the percentage of affirmative responses to the question whether or not respondents considered themselves to be responsible pedestrians.
All respondents were asked to describe the current situation with regards to pedestrian road safety in Azerbaijan and share their insights into the scope of activities that they as individuals or their respective organizations implemented in this area. As the research team had identified a diverse group of professionals who came from a variety of backgrounds, ideas presented here also vary based on the specifics of the field each expert represented.

Azer Allahveranov of a local not-for-profit organisation Hayat spoke about the awareness raising campaigns Hayat has been implementing since 2010 to improve the knowledge of road regulations and safe pedestrian behaviour in the school communities across Baku, including the teachers, children and their parents. Two independent consultants spoke about redesigning of Baku roads and transport system. Kamran Aliyev, Head of Public Relations Department at the Baku Road Police, spoke on the activities the Road Police Unit is in charge of, specifically the management of the flow of movement, both pedestrians and vehicle movement, providing road safety infrastructure for pedestrians, the design and operation of the various types of pedestrian crossing facilities, including underpasses, overground passes and “zebra” crossings. Independent road safety expert, experienced trainer and part-time radio anchor of the “AUTOSTOP” radio program, Agil Rahimov spoke on his role as advisor and educator in promoting safe driving habits and pedestrians’ shared responsibility to practice safety measures as part of their responsible citizenry obligations.

On being asked what were the main pedestrian road safety problems in Baku and how they could be eliminated, opinions differed. However, many agreed on pedestrians’ prominently being prone to neglecting fundamental road safety rules posing tremendous danger to vehicles and other pedestrians, particularly to more vulnerable pedestrians with restricted mobility. However, drivers in their majority also do not demonstrate law-abiding behaviours “until the moment they see a Road Police officer” approaching them. Independent international experts note that driving habits in Baku are not up to standards. Even though the law prohibits the use of hand-held mobile devices by individuals while driving, the overwhelming majority of drivers continue using their cell phones and get distracted while their car is in motion, do not use seatbelts at
not at sight. “Our drivers have a fear of fines and penalties”, notes Azer Allahveranov as he explains why drivers resume compliant on-the-road behaviour only at selected spots, where they presumably know the police may await them.

Independent consultants noted “the road accidents rate in Baku is more than the double of the average fatality rate in whole of Europe., which itself is a very alarming factor”. Fatalities among pedestrians, they further elaborate, are 41-47% of all the road fatalities. For a small country like Azerbaijan, this number is very high, especially compared to Europe where fatalities constitute less than half of that of Azerbaijan. Much of the focus needs to be put on improving the situation with safety of the pedestrians. Kamran Aliyev of the Baku Road Police also emphasized that despite all the efforts to increase the number of pedestrian crossings in Baku, but also throughout the country, in the regions, rural settings and intercity highways, unfortunately many pedestrians do not happen to use these crossing premises and neglect basic road safety rule by walking where the oncoming traffic is, especially being careless at night, in poorly lit areas where extra caution should be taken instead. This oftentimes results in fatal consequences for pedestrians, ending their lives untimely.

The major reason for most pedestrians not using the correct crossing route, some say, rests in the urban design of Baku itself. The lack of sufficient pedestrian infrastructure is the main trigger for road casualties. There is an insufficient number of traffic lights for pedestrian, but there are quite a lot of underground passes, however the latter is not being excessively used by pedestrians.

To tackle the infrastructural problems, experts suggest the redesign of the entire traffic signalisation system so as to also include pedestrian crossing lights in the traffic lights. Traffic lights only display the movement of the vehicles, but there are no traffic signs that would also show the movement of pedestrians.

Apart from infrastructural changes, we also need to educate people on what are the acceptable and unacceptable road-crossing behaviours. “We need to provide alternatives to people in order to ask them to use them accordingly,” one of the independent consultants says. At the moment pedestrians do not seem to have these alternatives aplenty. In some highways, for example, the Baku-Sumgayit Highway, with 90-100 km per hour speed limit or even higher, zebra crossings appear in the middle of high speed autobahn, which is very dangerous and universally wrong, from the urban transportation redesign perspective. Pelican crossings should be installed in high speed controlled areas, featuring a pair of poles, each equipped with a standard set of traffic lights facing oncoming traffic, with a push button for pedestrians and an alternative sign – also for pedestrians -from across the road. Typically, these poles will display a red, stationary person to indicate a “stop” signal and stress that it is not safe to cross the road, while a green, walking person will indicate that it is safe for pedestrians to cross.

Noting the importance of law enforcement and punitive actions (such as fines, penalties, regular and random road police raids) towards drivers and pedestrians whose on-the-road behaviour causes life-threatening danger to others, Allahveranov emphasizes that, along with law enforcement, the government should further develop more awareness raising programs for every segment of the population. Road police should be directly involved in educating people on-site about appropriate road-crossing behaviours. Experts generally did not advise on increasing the current rate of penalties for illegal crossing for pedestrians or alternative fines for unsafe driving for drivers, arguing that the amount set for these violations was already quite high now. However, many also agreed that some people continue to violate traffic rules despite their previous history of charges. Azer Allahveranov suggested if a person involved in multiple violations of traffic rules and pedestrian safety regulations, continues to manifest disdain to following these rules, a higher penalty be assigned to non-

...
sixth one will be higher). Agil Rahimov unambiguously proposed the escalation of punitive enforcement and the increase in the amount of fines and penalties for non-compliant pedestrians and advised the amount to be increased from its current rate of AZN 20, to AZN 50-100.

Another serious problem consistently flagged by all the experts was the lack of sufficient street signs on the streets of Baku, both pointing to pedestrians and guiding them where and when to cross the road and also warning drivers when and where to stop and give the right of way to pedestrians.

Experts agree that awareness should be an integral component of road safety policy interventions. However, these efforts, as Azer Allahveranov noted, should not be “one-sided”. Simply training drivers as main targets of road collisions as they are oftentimes being blamed as the primary cause of pedestrian death or injuries, will not be very effective. Drivers’ education on exercising safety measures should go hand in hand with educating pedestrians, whereas both parties should be trained equally and information provided to both pedestrians and drivers should be consistent. An independent expert urges to include road safety education in school curriculums and ensure timely education of everyone. He notes that understanding of sometimes irrevocable negative consequences of inappropriate pedestrian crossing is important at a young age as this will ensure the growing generations to adopt safety measures and exercise careful on-the-road behaviours. Agil Rahimov emphasized that the culture of safe crossing is nearly inexistent in the society as children have not been taught the basics of law-abiding road use behaviours. Acting as a responsible pedestrian should be “part of your mindset, or more broadly – the societal mindset”, he reiterates pointing to the urgent need for holistic road safety education policies and practices.

There are underground and over-ground pedestrian passes, zebra crossings and traffic lights in many areas in Baku. However, despite all of the above, many pedestrians do not use this infrastructure. Asked to share their opinion on what government institutions should do in order to improve pedestrians’ behaviour (in particular on crossing the road), experts agreed that solutions should tackle both drivers and pedestrians and should not be concentrated on pedestrians only.

Kamran Aliyev noted that the Baku Road Police Department collaborates with media outlets and interactive web portals, where educational, awareness raising materials are produced and video reports are available to show to the general public in a direct and engaging way what the consequences of unsafe road use behaviours can be and how to improve these behaviours. Despite the increasing efforts to educate the broader public on road safety measures, Aliyev regretfully stated that these efforts had not been as effective as one would have preferred. Aliyev, however, thinks, that the law enforcement operations should continue. Noting a growing number of fined individuals, he added that only in 2015, nearly 140,000 pedestrians were fined for the violation of traffic rules, some being fined repeatedly.

Experts are convinced a lot of efforts need to be put in educating drivers on fundamental driving ethics and safe driving rules. As to the pedestrians, he finds many pedestrians manifest themselves as “overly confident” crossing the road on massive avenues, such as Ziya Bunyadov Street and Heydar Aliyev Avenue, right in the middle of the street without using proper pedestrian crossings. What is most alarming in such an ill judgment of the road dangers is that adults oftentimes carry their minor children with them while crossing the street where they are not allowed to cross and putting their children’s lives at risk and danger. Kamran Aliyev notes that Baku pedestrians do not seem to understand that unsafe road crossing decisions may cost them their lives. He thinks the fact that for many pedestrians, proper and legal road crossing is not the priority at all, is the major risk factor. What is most troubling is that even when underground and overground passes are just a few steps away, they are not being used. He attributes this to the fact that many pedestrians are simply not used to crossing the road in the pedestrian way and many think that everything will be fine if they just cross the street without using the infrastructure provided.
occur near the overground or underground passes and not where these facilities are inexistent. Perhaps, pedestrians decide to take extra caution at places of high risk and assume that they will be safer near the crossing premises, or they overly rely on drivers’ giving the right of way to pedestrians by default.

Another contributing factor in the discourse of road safety problems in Baku, experts argue, is that during major events key underground passes are being shut down. Experts call for city administration and relevant agencies to ensure all pedestrian crossing systems operate at full capacity, on big days specifically, and allow for the ample management of pedestrian flow.

Sufficient media coverage of road casualties, pedestrian-led traffic threats and other related matters is important. Most people, say experts, receive information on matters of societal importance through media, including traditional media (TV and radio) and more so the new media (social accounts) and Internet in general. These sources should be intensively used to promote safe road behaviours and educate people on traffic rules as well as consequences, including legal and administrative, of unsafe road use behaviour. As many point out the importance of awareness raising campaigns, Azer Allahveranov and Kaman Aliyev think a major load of actions in this area should be put on civil society and on NGOs in particular.

To summarise the result of the expert interviews, many concluded that timely and holistic education of all segments of the society will have a long-lasting effect on safe road use practices, along with sufficient infrastructural changes and pedestrian safety enforcement operations through road police involvement.

Limitations of the study

The analysis of statistical data from different countries of the globe confirm that people at senior age are more likely to become victims of traffic accidents, due to various reasons, mainly their tendency to develop sensory delays, limited mobility or any kind of physical or intellectual disability associated with age. Most elderly pedestrian injuries and fatalities are caused by what is referred to as an error of initial judgement, or, in other words difficulties in realistically estimating the distance between a car in movement and the pedestrian crossing where they might be either standing or crossing. Building from the empirical evidence that suggests the elderly population is at high risk of exposure to road traffic incidents, the research mission aimed at targeting a representative sampling size of this population in order to be able to draw accurate analyses of the elderly pedestrians’ behaviour and their needs in terms of securing better and safer roads for them. However, as noted above, this goal has not been fully met, since only 9.3% of respondents were individuals age 55 and above. The data collection team reported the reluctance of most elderly people to participate in the study when approached by surveyors. As a consequence, findings of the pedestrian surveys may not fully represent the needs and concerns of the elderly population. Due to the financial restraints and considering the current project is the first attempt at conducting a road safety and pedestrians’ needs assessment in Azerbaijan, AMAK has initiated the research mission based on a relatively small sampling size. The total number of respondents – 1200 might not fully represent the needs of all pedestrians in a city with the population of nearly 3 million people.
Conclusion and implications for future research and policy making

Social mobility and inclusion

Culturally congruent and inclusive policy efforts should be at the forefront of road safety interventions at a holistic spectrum. The focus should be made on vulnerable road users – elderly, women, and children and youth age 15-29, as well as a broader array of individuals with limited mobility. The latter includes people with disabilities and those whose mobility is temporarily reduced due to certain (not necessarily permanent) circumstances, such as parents riding strollers with their infants and minor children, people pulling out their shopping cards, and individuals riding wheeled motorised devices to assist their movement, including scooter runners, etc. There should be more efficient and inclusive policies in place that would provide sufficient conditions and solid infrastructure for people with restricted mobility, who are among most at-risk groups of pedestrians for their exposure to road traffic casualties. Specifically, wider sidewalks or designated walkways should be designed in streets of Baku to allow for safe movement of people with reduced mobility.

Disability access is an important aspect of safe and healthy road environment. Accessible pedestrian passes for people with various health conditions (not limited to physical disability only) that require special accommodation should be installed throughout the city. People with heart disease or elderly who cannot walk up and down the lengthy stairs should have some alternate means available for them to cross the roads in a safe manner. Same applies to parents and caregivers who have to carry their children through the pass or a pedestrian cross. Instead of stairs there should be escalators installed in the underpass and functional at all times. People with visual impairment should be able to use voice-enabled road safety devices. A more thorough needs assessment should be conducted to accurately analyse what infrastructural changes might be required in order to make streets of Baku –and the country in general –accommodating, more inclusive and disability-friendly.

Public awareness

While reports from other countries across the globe suggest that governments should pay a closer attention to law enforcement by tightening drunken-driving laws, fastening seat belts for drivers and penalties for pedestrians, many respondents who took part in the survey in Baku demonstrated a significant level of scepticism towards these measures. Emphasis should be made on broader public awareness campaigns. Enhancing education and public awareness at an early stage is another popular response mechanism in addressing hazardous behaviour among pedestrians. Both respondents and SMEs have repeatedly emphasised that road and safety regulations should be taught early on at a younger age and be included in a school curriculum.

While public awareness initiatives should not be treated as the panacea for pedestrian safety, timely and continual efforts should be undertaken by the government, media and civil society organizations to educate pedestrians of all ages about the potential negative effect and circumstances of unlawful road crossing and other risky behaviours at areas of traffic congestion. As some of the experts interviewed for this study noted.
workshops should be organised in various neighbourhoods in Baku, residential areas, workplace, school, and universities and can be customised to meet the needs of each audience based on pedestrians’ age group, targeted locations or “problem areas” where most traffic casualties occur. Literature on road safety suggests that education campaigns are most effective when offered to a targeted audience at a targeted location. Knowing where the percentage and/or frequency of pedestrian-caused violations of road regulations are higher, the government and civil society actors should deliver training programs and a broader scope of public awareness campaigns, such as locating street posters, billboards, and digital screen boards, spreading leaflets among the population in that area. Written posters and signs indicating that crossing is not allowed in a particular area should be placed in the streets to guide pedestrians’ road crossing decisions. The signs should be large enough, readable at a distance, and should clearly state that those who cross the road in an inappropriate spot will be fined by a designated amount of money in AZN.

To raise awareness of safe road user behaviour and best practices, road safety publicity campaigns through TV debates and educational TV programmes can have a tangible positive impact on people’s perception of safety measures in general. Many respondents believed there were not enough TV coverage of road movement and rules of road regulation, although the SMEs noted a number of television and radio programs, interactive public service announcements and news releases devoted to road safety issues. Pedestrian surveys concluded that street signs should be placed not only where the pedestrian crossing is allowed, but also nearby – to warn both drivers and pedestrians by indicating that there are crossing spots nearby. For instance, at subway exits a sign indicating that a pedestrian sign is 100 meters away, would remind pedestrians that a safe and legitimate pedestrian passage is accessible at a reasonable walking distance. Awareness can be enhanced also through outreach materials – brochures, leaflets, billboards and on-street digital advertisement screens etc. Public service announcements may have a positive effect on raising awareness, along with door-to-door educational campaigns.

Infrastructural reforms

More “zebra” crossings should be installed throughout the city. Numerous respondents pointed to escalators on the underground and overground passes being out of order and not functioning for many months. The city administration or other relevant agencies in charge of pedestrian safety infrastructure need to be repaired in a timely manner. Agencies responsible for their installment and maintenance should regularly check escalators for malfunction and once any irregularities are spotted they should arrange for timely repair. On the contrary, some believe that zebras pose a greater risk to pedestrians as many vehicle drivers do not stop at pedestrian lines to let passengers cross, while the latter rely on drivers’ knowledge of and compliance (or readiness and willingness to be compliant) with road safety rules. Moreover, maintenance of street signs, including white pedestrian cross line also may affect both driver and pedestrian-caused accidents. Zebras should be repainted regularly, as the paint fades away and oftentimes the lines are not visible to either of the parties involved, be it a pedestrian or a vehicle driver. Today, cutting-edge technologies made their way to revolutionize the road traffic systems, as research and numerous media reports point out competitive advantages of optical illusions through 3D painting for saving pedestrian’s lives, which may be taken into closer consideration by road safety experts, road police units, civic planners, and local governments. Growing in popularity, 3D crossings have been installed in many parts of the world, primarily in China, India, where the governments use the optical painting technique to create an illusion of virtual speed breakers – a method that has been highly effective in addressing high speed driving. Visually perceived as standing obstacles, the 3D-insinuated bumps are easily spotted by drivers even at a far distance and make them to slow down before approaching the crossing.
Tightening of enforcement measures

Many respondents (35.3% altogether) do not deny that punitive measures (high fines) will have the most immediate and desirable effect on both drivers’ and pedestrians’ mindset. Specifically, 19.7% of respondents proposed drivers should be penalized more often for not giving way to pedestrians where needed and 15.6% of respondents thought non-compliant pedestrian behaviour should be fined accordingly. Consequently, the role of police presence was emphasized by most respondents. Some (2 respondents) even noted the importance of public shaming by showing people who violate road safety rules on TV, so that the broader public can see these people. Toughening of penalty enforcement through increasing the amount of fines for pedestrians breaking road safety regulations was amid the most repetitive suggestions that most of respondents put forward. On further discussions with subject matter experts, however, opinions differed as experts did not necessarily thought increasing the amount of civil and administrative penalties against pedestrians and drivers who manifest unsafe on-the-road behaviour would prove effective.

Over the course of the research activities, the study team met a lot of people who were travelling to Baku from rural areas and were not familiar with street signage well enough. In the era of improved social mobility of people and a growing tendency towards the urbanisation of rural population, a further increase in the number of people who migrate from suburbs to Baku should be expected. With that, more emphasis should be made to educate these segments of the population as well. To reiterate, street signs should be placed at the bus stops and metro exits to inform people of the risk of being charged with fines in case if they violate the road safety rules and cross the road in areas where they are not allowed to cross. Many people, even those in younger age groups (15-24) revealed their lack of knowledge of road safety rules, signage, and pedestrian responsibilities. On the contrary, many thought the root of the problem was in mindset and mental barriers arguing that even people who knew the pedestrian safety rules and experienced drivers who were familiar with road regulations tended to violate pedestrian safety rules – out of pure neglect or because such a behaviour became habitual.

Overall, the study revealed that the lack of adequate and suitably located pedestrian infrastructure is one of the major contributing factors to road fatalities. Places of social importance should be given special consideration in city planning. As an example that has been brought out by respondents, Neftchiler hospital is one such place with a constant flow of incoming and outgoing pedestrians. However, there is no pedestrian crosswalk anywhere nearby the hospital, which puts the movement of people at great risk – and these are potentially people with certain health conditions, considering their commute to and from a medical facility.

Safety

Fear of theft and other criminal activities in the underground passes were mentioned among many other alarming threats to the city’s road safety. One respondent reported her school age daughter’s bag had been stolen, and their entire family stopped using the underpass ever after that incident. Another respondent said he avoided entering the underground pass at night because of safety concerns. A few other interviewees reported that they or someone they knew had experienced such incidents at some point in time where they were robbed or faced with a risk of being robbed. Security cameras should be installed in such areas of high risk to provide for 24-hour video surveillance, in addition to active police presence in the area. Sufficient street lightening including in underground passes, may also contribute to an improved safety of pedestrians.
Digital innovations

Although not a direct outcome of the current study, cutting-edge technologies are offered as yet another way of tapping the unmet need for reducing road fatalities, both domestically and internationally. Thought leaders in the automobile industry, manufacturers, and urban planning experts call for intensified research and development efforts aiming to design new gadgets and software that will allow to control speeding, prevent collisions on the roads by automatically slowing vehicles down, and even sending alarm signals to wake drivers up in case if they accidentally fall asleep or sending them push notifications to take a break if the system registers fatigue in a driver based on the intensity of blinking, for instance. Alternative technologies of this kind have already been developed and are available at the digital marketplace for use. Mobile applications, such as Sprint’s Drive First, FleetSafer Mobile, DriveSafe.ly, Textecution, Cellcontrol, Kyrus Mobile - to name a few, are available for Android, Blackberry, iPhone and Windows devices, although restrictions may apply based on the geographical location, as some programs can only be installed and operate in certain countries. If compatible, the software directly interferes with the so-called distracted driving syndrome and automatically block some of the key functionalities of smart phones while they detect that the driver (a device holder) is in motion on the road. Thus, by disabling texting and emailing, as well as calling during the entire period of commute, these applications prevent drivers from becoming attached to their cell phones. Many attribute vehicles crashes and road fatalities to drivers’ negligence of traffic conditions due to their preoccupation with work-related obligations forcing them into responding to messages, emails and calls as part of their employment obligations. In some countries, state laws hold employers liable for distracted driving if proved that a person was using a hand-held device while driving to make calls or send emails and text messages for business purposes. While technological solutions promise to become one of the most powerful interventions that can effectively and efficiently address road safety issues, more in-depth research is needed to measure their impact and provide feasibility analysis of the potential use of software applications in the local context.
Bibliography


