

# THE TYPOLOGY OF TRAVELS IN PRISTINA IN RELATION TO PURPOSE, TIME AND DISTANCE

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**ABSTRACT:** Similar to most cities in Europe/the world, Kosovo also faces the problem of urban mobility, which is characterised by congestion. The most concerning problems are: waste of time, money, energy consumption, environmental problems and others. They arise due to the imbalanced state of using urban mobility in Pristina (Prishtinë), while eco-travels are minor. In order to reduce these problems, this paper aimed to examine the current situation of urban mobility in Pristina by analysing the mobility indicators of cars, trains, buses, bicycles and walking, in relation to purpose, distance and time. The research methodology was the direct survey method conducted with the citizens of Pristina and daily immigrants over a week. The results of the survey showed that 44% of the participants used cars for travelling, while other transportation alternatives (soft and eco-transport) were limited and problematic. In the absence of institutional practices for collecting periodic data, the results of this study will not only contribute in filling the information gap, but also will properly address the needs for transportation planning in Pristina and design objectives for a multimodal transportation strategy in this city to lessen the negative impacts of the aforementioned problems and increase travel facilities.

**KEY WORDS:** travels, travel modes, travel purpose, multimodal travel

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## Introduction

Although there is no acceptable definition for sustainability, sustainable development or sustainable transportation (Beatley 1995), it is generally accepted that sustainable development, and more specifically, sustainable transportation, means finding the right balance among (the current and expected) the environmental, social and economic situations (Steg, Gifford 2005). A popular definition of sustainable transportation was developed by the European Conference of Ministers of Transportation (ECMT 2004), which

stated that a sustainable transportation system is one that is accessible, safe, environmentally friendly and (economically) affordable.

Yet, is transportation in Pristina similar to the previously mentioned definition? As people commute on a daily basis, mobility (commuting) causes problems that exist in Kosovo as elsewhere in the world. These problems are most acute in Pristina, the capital of Kosovo. Referring to existing research and the researchers' daily experience in this city, the main problems are: the high level of traffic, the inability of infrastructure to cope with it and the transportation system in general.

The expansion of land areas and the vertical growth in housing have been associated with an increase in population density, which has also amplified the number of trips. This increase in urban mobility has been associated with negative aspects such as loss of time, high number of vehicles, high level of gas emission in the environment, difficulties for pedestrians since sidewalks are being used as car parking spaces, lack of infrastructure for bike users and so forth.

The collected and processed data, and the results on travel typology, travel modes, travelled distance in relation to travel types and means, travel duration, travel time during the day, all presented in this paper may be used by transportation planners, urban planners and similar professions. Resolving the problems associated with the current urban mobility situation in the city of Pristina remains a challenge for the future. As Pristina is expanding, the findings of this paper on travel typology and their correlation with the data on land use, such as city density, size of residence, mixed land developments, concentration of activities and others, will give a clear picture for the city's sustainable development in the future.

## Materials and Methods

Having prior knowledge on various travel modes chosen by people's own will and that the terminology used in the field of transportation might have various meanings in different countries, it is necessary to define the terms *origin* and *destination* (firstly in Albanian language and secondly by origin). In terms of lexicon, one can easily define these two terms: firstly, *origin* signifies the beginning of something, source, ancestry and so forth (Kostallari et al. 1981). The term *destination*, which was coined originally from Latin *destinare* (Vocabulary.com 2018), is pronounced differently in various languages and has similar meaning, namely, the final target, the last or main point of the person or thing and so forth (Oxford's free English and Spanish dictionaries 2019). Beyond that, it was thought of broadening the understanding of these terms in the field of transportation. This was broken down into two elements: initially, *location of origin and destination*, where *origin* represents the

place in which the trip begins and *destination* signifies the place where the trip ends; and then, *from where the trip begins and ends* (which are these places of origin and destination?). In the present case, they were labelled as: home, work, personal work, shopping/shopping, social/entertainment and more.

Travel purposes are some of the key points of the research. Thus, they are defined as follows:

- work - a trip to a regular place of work,
- home - any trip which has going home as its destination,
- personal work - visits to services and activities other than regular work, for example, lawyers, banks, estate agents, libraries, mosques/churches, hairdressers, consultations and medical treatment, or for food/beverages, except for the cases where the main purpose is entertainment or social,
- schooling/education - all trips to school, college, faculty and so forth,
- shopping - every shopping trip from home to stores or back, even if there is no intention of shopping, and
- social/entertainment - visits to meet friends, relatives or acquaintances, such as at someone's home or in a cafeteria, club, restaurant and so forth, all kinds of entertainment or sports activities and volunteer work, non-professional evening activities, political meetings and others.

To support the project, the research used data from the Traffic Research Report in October 2011 undertaken by the consulting company EGIS International (MIT 2011), which was conducted through automatic traffic counters on national and regional roads in Kosovo. It was noted that spring and autumn are the seasons when the geographical flow of traffic is not influenced by factors such as increased number of summer trips because of diaspora arrivals and decreased number of trips during the colder period of the year as a result of weather conditions or other factors. Based on these studies, it was considered that the optimal time for field data collection, namely the survey, was the first week of May 2018.

Pristina, the capital of Kosovo, is, at the same time, the city that attracts and generates most travel from all other areas of Kosovo (Kelmendi 2012). This fact has sufficiently justified the reason for undertaking the research and for choosing the

city of Pristina (part of the municipality under the same name) as a research area.

Based on the official statistics in Kosovo, in 2017, the municipality of Pristina had 211,755 inhabitants (KAS 2018: 34), while the findings of the survey conducted in 2011 by the Ministry of Infrastructure and Transportation (MIT 2011) on the origin and destination of trips to Pristina showed that the number of passengers arriving to Pristina during a day for various purposes was around 97,491. Based on these data, a sample size of 384 surveys with 95% accuracy level was set. The sample had geographical coverage. It was proportional to the whole city and was gathered on a full weekly cycle, 7 days a week.

The target population for the present survey/study consisted of the residing citizens of Pristina as well as the people who come to Pristina for various purposes during the day. The survey was conducted with people of age groups over 16 years, as they were considered mature enough to travel and choose their own mode of travel. The main data collection method for this research was face-to-face survey. Moreover, deconstructing the existing findings and statistics from state institutions further assisted this study.

Since the research focuses mainly on work-related travel, the survey was directed to the areas where employees are concentrated, for instance, central and local institutions, university/school facilities, hospital facilities/health centres, industrial areas, including service areas, recreation areas and so forth, all at neighbourhood level as far as possible.

To gather data from the entire city, seven surveyors were involved in the project, each covering one or more neighbourhood or parts of it. The surveyors identified the respondents by applying criteria such as the inclusion of all different people who travel and who are over 16 years. For instance, if the survey is conducted in a restaurant, not only the waiter/bartender, but also the customer can be surveyed; if the survey is conducted in a shop, the seller and also the buyer can be surveyed; if the survey is conducted in a university, not only the professor, but also the student can be surveyed, and so forth.

Of similar importance was also to determine what demographic data would be collected. The information that was gathered about the participants is as follows:

1. gender, which is considered to be of particular interest as it is believed that women use particular types of transportation. In some countries of the world, including the European countries (excluding the Netherlands where 55% of the bicycle riders are females), they use fewer bicycles (Pucher, Buehler 2008), while greater use of bicycles by women is conceived as higher-level safety of this type of transportation in certain cities (Baker 2009). Meanwhile, Jan Garrard, a senior lecturer at Deakin University in Melbourne, Australia, considered cycling by women a key transport-urban indicator, as he says: *If you want to know if an urban environment supports cycling, you can forget about all the detailed 'bike ability indexes' – just measure the proportion of cyclists who are female* (Baker 2009),
2. age: Gathering information about the age of the respondents is related to the age of getting a driving licence, with the possibilities of buying a car. Buying a car is considered a rite of passage, while choosing a car is widely valued as an expression of an individual's identity, reflecting his or her individual strengths and status,
3. employment status,
4. level of education and so forth.

The last two categories of data (3 and 4) were collected, but have not been analysed and discussed in this paper.

The participants were asked about all the trips they had done during the last 24 hours. Since travellers usually made more than one trip within 24 hours, our study included 1496 trips, which averages 3.89 trips/24 hours. In addition, data on the mode of travel were collected, especially which types of transportation were used for the purpose of travel. Of particular interest were the data on the purpose, time and distance of the trip.

## Results

In accordance with the research methodology as stated in the previous paragraph, the following results focus on geographical distribution, travel modes and purpose, travel distance, duration of trips, daily frequency of trips and, last but not the least, structure of travellers.



## Geographical distribution of trips in the city of Pristina

The results of the study (based on the sample from 384 surveys and 1496 trips) show that there exists an uneven distribution of trips in particular areas of Pristina. The greatest attraction of trips is in the central area and the areas nearby, which is linked with the great number of services offered in these areas (Fig. 1). While moving from the city centre to the more suburban areas, the number of activities and services decreased, resulting in fewer trips towards those areas. This difference, as stated above, is caused by citizens who come from other places to the city of Pristina. The distribution of trips generated from the areas outside Pristina was more balanced when compared to all trips in general. Thus, while citizens within the city aimed more towards the central and closer areas, citizens outside Pristina aimed towards a more balanced spread in all areas, yet again with an inclination towards the city centre.

## Travel purpose

Urban mobility is a direct result of the number of jobs, job location, population and housing. These act as generators of trips, since residential areas constitute the origin of mobility.

For this reason, data based on travel purpose are collected for the following categories: home, work, personal work, shopping, social/entertainment and schooling. The trips are linked with specific urban activities, planned or voluntary. During the survey data processing, this approach was found to be true. It was noted that most of the trips targeted home (35%); the second category was work-related trips (20%), trips aimed at personal work and social/entertainment travel (17%). Moreover, the survey also showed a higher level of trips for social and leisure purposes in comparison to trips for schooling and shopping. School travel purposes (6%) and shopping (5%) were found to be similar (Fig. 2).

Unlike what was stated earlier, if data of the citizens who come from cities outside Pristina are analysed, it shows that almost half of the trips (46%) are related to work and personal matters, while other purposes such as going home, trips for social/entertainment purposes, shopping and schooling are less in number.

Due to the role of purpose, it was considered important to measure time, distance and number of trips (for the same purposes). Thus, the graph in Figure 3 shows the common state of the three elements together.

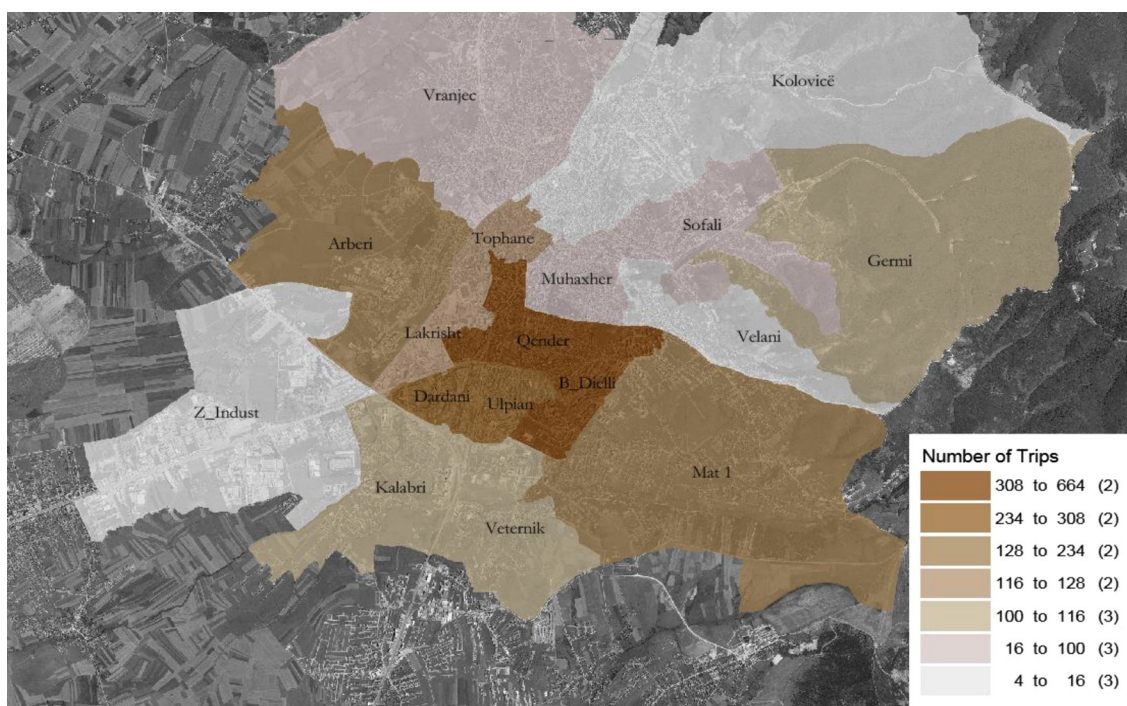


Fig. 1. Number of trips in the Pristina city centre areas.

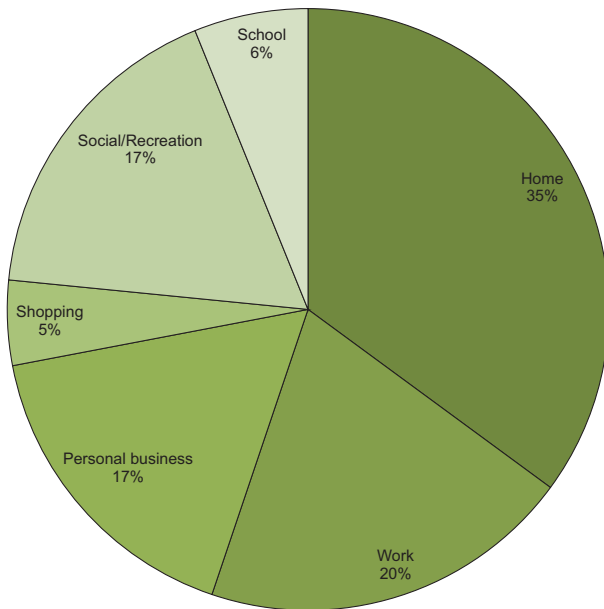


Fig. 2. Travelling by purpose, May 2018.

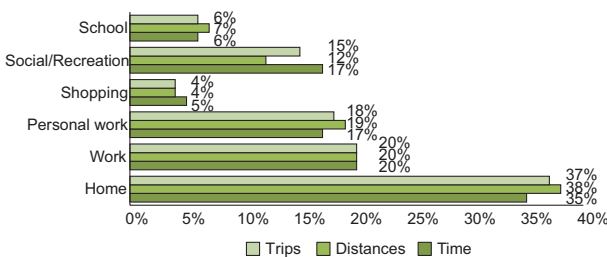


Fig. 3. Time, distance and number of trips by the type of transport, May 2018.

This combination displays that travelling home is not only performed by 35% of the respondents, but also takes more time and covers a longer distance compared to other trips (Fig. 3, Home category).

### Most common travel modes in the municipality of Pristina

It was noted that the greatest number of trips, distance and duration was reached by using cars (Fig. 4). The second prevalent type of transportation in the city was walking, which was characterised by short distances. Buses were the most frequently used public transportation compared to minibuses and taxis and were much more frequently used than trains, which were minimally used. In the absence of suitable bicycle lanes, this type of transportation had symbolic use.

With two combinations, the results of the trips are as shown in Figure 5.

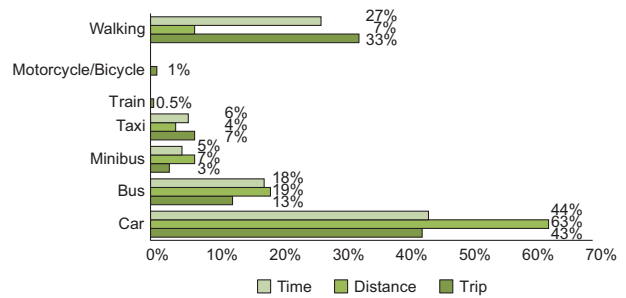


Fig. 4. Time, distance and number of trips based on the type of transportation (travel modes).

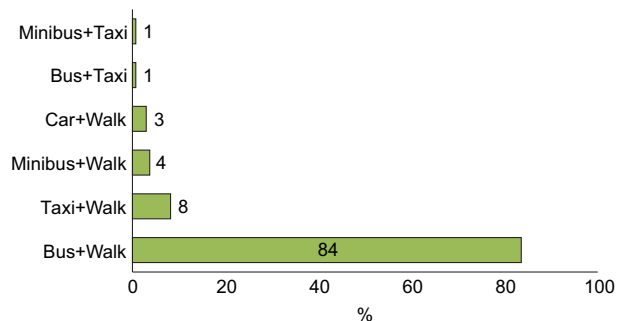


Fig. 5. Travelling with two types of transportation.

## Travel modes and purpose descriptions

### Use of cars

Cars, the most applicable (used) type of transportation in Pristina (44%), were mostly used for home, work, social/entertainment purposes and less for shopping and schooling.

### Walking

Citizens in Pristina accomplished their tasks by walking (in 32% of the cases), as for going home, going to social and recreational activities, personal work and schooling (Fig. 6, Transport models).

### Use of public transportation

Differences were found between the types of public transportation in terms of use. Buses and taxis were mostly used for social/entertainment purposes, while minibuses were used for work and home.

### Use of bicycles

Bicycles have symbolic use in the city and serve to perform various personal tasks. The high usage of motor vehicles, in particular, taxis, cars, and minibuses, in the municipality of Pristina, according to respondents, is related to the purpose as some work centres are far from their place of

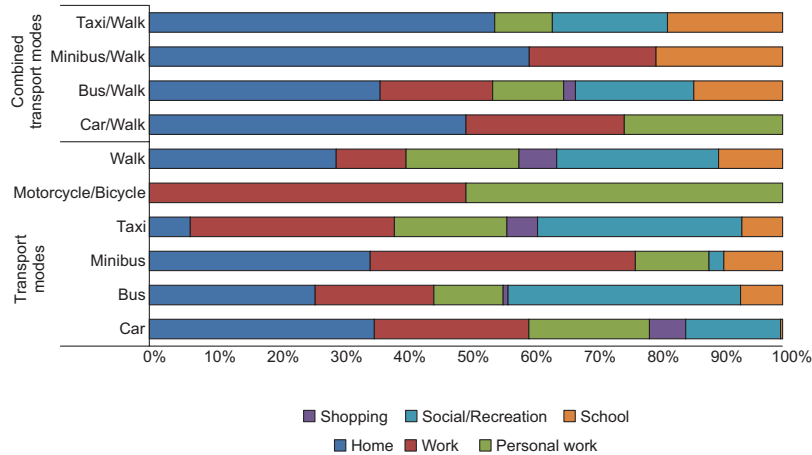


Fig. 6. Types of transportation used based on travel purpose in the city of Pristina.

residence and other services. On the other hand, this high rate of vehicle usage also signifies lack of railway lines (only one line), metros and trams and limited opportunities for cycling (only 3 km lane) and walking.

**Travel distance and means of transportation**

The results of the survey show that short trips by travellers are done on foot and by bicycles. Depending on the distance, travellers choose these travel modes: short trips from 0.5 to 1 km are mainly covered on foot or by bike. Also, 89% of the walking trips are found to be for covering a distance of 0.5–1 km, while 11% of them are used for covering 1–5 km. Trips covering a distance from 1 to 5 km are mostly done by taxis, buses, minibuses and walking. Characteristic is the high use of cars (43%) for short distances from 1 to 5 km. Cars, minibuses and buses are used for travelling over 5 km (Fig. 7).

**Duration of trips**

**Duration based on the type of transportation**

When it comes to duration, the results showed that public transportation (minibus and bus) takes the longest and motorcycles/bikes take the shortest time (Fig. 8). This is justified by the fact that the aforementioned vehicles have many stops and they are deteriorated. On the other hand, with urban planning in Pristina, there are no special lanes, especially for buses.

**Duration based on the purpose of travel**

Trips undertaken for social/leisure purposes (20 minutes) are slightly longer than for home and personal work, while shorter trips are used for the purposes of work and school (Fig. 9). This is linked to the distance of shopping centres as well as natural parks, which are 2 km away from the centre of Pristina.

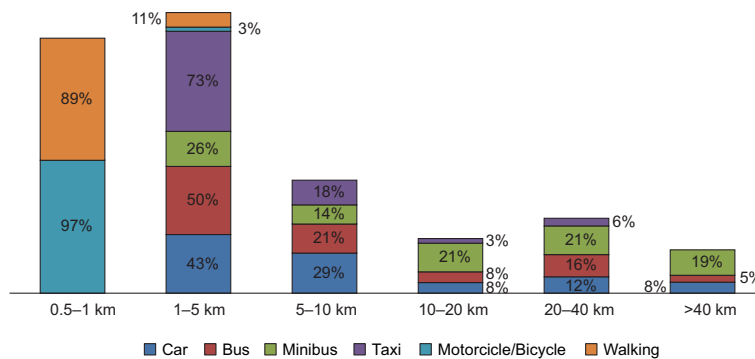


Fig. 7. Travel distance based on the type of transportation in the city of Pristina.

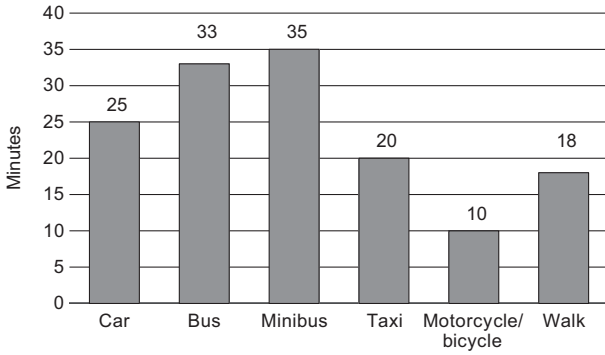


Fig. 8. Average travel time based on the type of transportation in the city of Pristina.

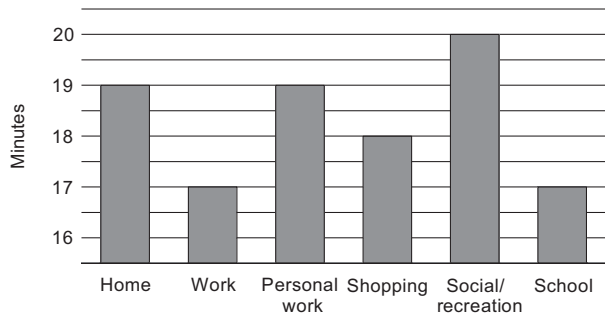


Fig. 9. Average travel time based on purpose in the city of Pristina.

**Daily frequency of trips**

Analysis of the data obtained from the survey shows that the 24-hour trips in the municipality of Pristina show two peak hours, at 8 am and 5 pm (Fig. 10).

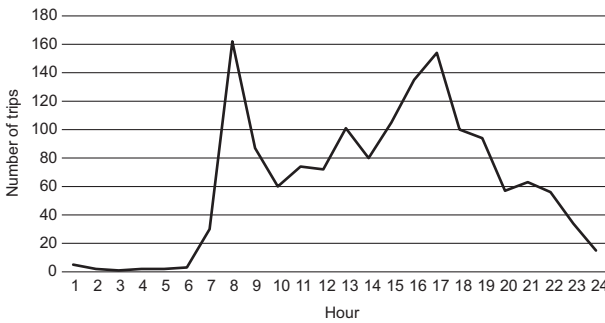


Fig. 10. Number of trips during 24 hours in the city of Pristina.

The graph also reveals that trips begin to increase from 6 am and reach their peak at 8 am, a time that coincides with the beginning of the official working hours. After this, the number of trips declines sharply by 10 am, with successive ups and downs until 5 pm when again it reaches a second maximum, at a time that now corresponds with the end of the official working hours. After this, the number of passengers decreases slower in comparison to the increase in the number of trips during morning. The lowest level of trips within 24 hours is observed from 2 am to 6 am.

**Structure of travellers**

**Trips based on gender**

The survey shows that men make more trips. They dominate in the total number of trips (62%) compared to women, who make up the remaining 38% of all trips.

**Travels based on the type of transportation, gender and age**

The survey results show that the biggest car users are men (52%), while female travellers use the car only in 29% of the cases. The situation with the use of other transportation modes is different. *In addition to cars, women dominated in the use of other transportation modes.* They preferred walking more as 42% of their trips were made on foot and only 28% of the trips by men were made on foot. Similarly, public transportation such as bus and taxi was used more by women than men (Fig. 11).

**Travels based on age**

From the age analysis of the surveyed passengers, it was noted that the young population uses bikes/motorcycles, walking and public transportation. All those who use motorcycles/bicycles belong to the age group of 16–25. This age group also uses walking and public transportation more and less number of cars for their trips.

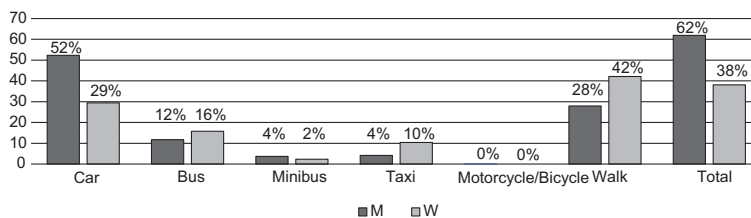


Fig. 11. Travels based on gender and type of transportation.



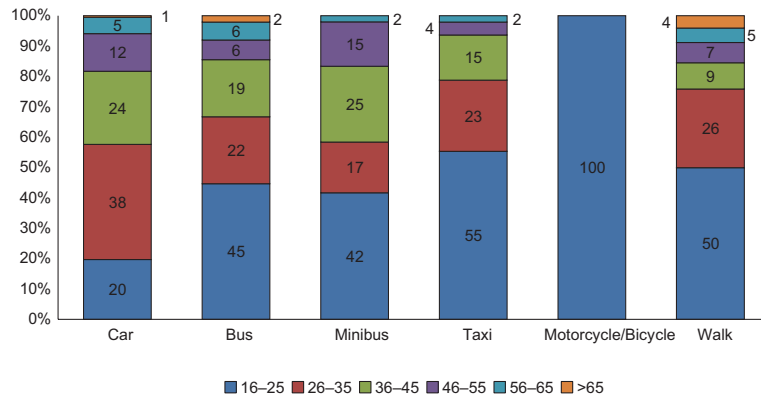


Fig. 12. Types of transportation used by people of different age groups.

Alternatively, people in the age group of 26–65 years use cars and walking. Besides cars, those in the age group of 26–65 years mostly use public transportation such as taxis, buses and minibuses. A percentage of them prefer to walk. Citizens over 65 favour more walking and buses and less number of cars (Fig. 12).

The survey findings showed that the able-bodied population uses cars (Fig. 12). However, within this population, the biggest users of cars are in the age group 26–35 (38%). The bus is used mostly by those belonging to the age group of 16–25 years (45%), minibus by those aged 16–25 (42%), taxis by the people aged 16–25 (55%), motor and bicycles by those aged 16–25 (100%) and walking is used by people aged 16–25 years (50%).

## Discussion

### Pristina, a city of cars

Referring to Banister (2008: 73), in his approach to sustainable movement paradigms, he states that, *travel is a derived demand and not an activity that people wish to undertake for its own sake*. This is just the value of the destination activity that results in travelling. It seems that his approach was found in our case study as well. Although the notion *travel is a flowing demand* may weaken if the income increases and leisure becomes more valuable (a matter not included in the scope of the present study), this result would help to explain the prevalence of transportation solutions for urban problems that may arise in the future from the large increase of faster and longer trips.

Based on importance, after cars, walking and cycling are the second modes of travelling for residents in the municipality of Pristina. It is not certain whether this mode of urban mobility is widespread in Pristina due to low costs, lack of modern infrastructure in the municipality of Pristina, economic inability to own a car or the lack of quality in public transportation. The researchers will refer to the fact that these are the features of mobility in developing countries, or the tendency to use vehicles as little as possible for reasons related to environmental education, sustainable development and so forth. Discovering the reasons for dominance of these types of mobility will be the subject of future research.

On the other hand, official statistical reports published by the Kosovo Agency of Statistics show that 82% of all vehicles registered in Kosovo are cars (KAS 2018a: 4), while minibuses and buses together account for 1.3% of all vehicles. In Pristina, only certain types of transportation, such as cars, buses, minibuses, taxis, motors/bicycles and walking, are utilized more. There is only one train line connecting Pristina with some of the other cities in Kosovo that serves exclusively for the migrants of the cities to which the railway is connected. The same line does not serve trips within the city (Trainkos 2018).

### Conditioning factors of limited transportation system in the city of Pristina

The need for sustainable cities cannot exist without sustainable mobility. Accomplishing this principle requires long-term strategies, while strategies require long-term planning,



continuous implementation and consistency in policies, regulations and communication.

After the Kosovo Spatial Plan, which represents the national-level and more general planning, the Municipal Development Plan (MDP) and the Urban Development Plan (UDP) are two documents that regulate and manage the territory development in economic, spatial and other developmental directions. These documents differ from the spatial scale of planning: while the first MDP covers the whole territory of a municipality, the second UDP covers the urban area, especially the city of our municipality (our research area). These two plans were compulsory for drafting in all municipalities of Kosovo, according to the old Law on Spatial Planning in Kosovo, Article 13 and 14, Law of 2003/07 (Assembly of Republic of Kosovo 2007). For the implementation of this legal requirement, the Municipality of Pristina drafted these documents 9 years after, especially in 2012. These two documents are intended, at least formally, to be active for a period of 10 years, until 2022 (Municipality of Pristina 2013a, b).

Paradoxically and regrettably for Pristina, only 1 year after (2013), Kosovo adopted the new Spatial Planning Law where land regulation and planning takes on new contours and obliges other forms of land planning and regulation (Kosovo, municipalities and cities). With this law, there is no UDP anymore. There is an MDP, but with a new meaning, and it requires implementation of the Municipal Zoning Maps – spatial planning documents at the local level (municipal level), according to the law on spatial planning of 2013 (Assembly of Republic of Kosovo 2013).

The law also requires a new document after the Kosovo Spatial Plan, which is called the Kosovo Zoning Map. The same should be a precedent to the Municipal Zoning Map as a second level of planning. This document (Kosovo Zoning Map) has not been implemented so far.

As explained above, two problems were encountered: firstly, 9 years delay of drafting the UDP of the Municipality of Pristina in the face of a new law coming just 1 year after (2013), which immediately presents problems in implementation of this plan, since as explained, it requires drafting of new documents; the second problem is the lack of the Kosovo Zoning Map, while municipalities as a second territorial level are obliged to

have the Zoning Map of the Municipality (which also lacks in the municipality of Pristina).

These formal problems show fragility and disagreement in the field of spatial planning in Kosovo. An addition to this is the fact that there are even more problems involved in their implementation, including in the area of transportation, and therefore, heavy traffic often witnesses an inadequate system which, among others, depends on the compilation and implementation of such documents, which have defects from the beginning as seen above.

Transportation strategies aim to reduce these effects by moving to environmentally friendly transportation modes such as walking, cycling and car classification. In the future, this approach, combined with the latest technological advances, would increase the role of public transportation and individual motorised transportation using clean vehicles (vehicles that are expected to emit lesser gases into the atmosphere). Completing these strategies requires long-term planning, consistent implementation and consistency in policies, regulations and communication.

### **Sustainable cities cannot exist without sustainable mobility**

More sustainable transportation modes, such as public and non-motorised transportation, play an indispensable role in making cities liveable and less polluted. Current models of urban mobility also have significant negative impacts on air quality, noise pollution, safety and the use of public spaces.

The current pattern of urban mobility in Pristina municipality is dominated by the use of motor vehicles such as cars, minibuses, taxis and buses. Among them, 44% of the respondents use cars. The high rate of motor vehicle usage has a significant negative impact on air quality, noise pollution, safety and the public use of this area. According to the data of the Annual Report on the State of the Environment in Kosovo for 2016, especially on the state of air quality, it is noted from the results of the air quality monitoring system at the 'Pristina-HMIK' and 'Pristina-Rilindja' stations PM10 and PM2.5 that the percentage of dust particles released by the movement of motor vehicles exceeds the Maximum Allowed Value (MAV) (KEPA, 2018). Thus, at 'Pristina-HMIK'

station with  $74 \mu\text{g}/\text{m}^3$  and 'Pristina-Rilindja' station with  $66 \mu\text{g}/\text{m}^3$  within 1 year (KEPA 2018). These excesses were more noticeable in October, November, December, January, February and March, which, together with the fog that affects the formation of winter smog,<sup>1</sup> continued at the same rate in 2017 as well. Such atmospheric phenomena caused difficulties in the circulation of vehicles, which led the road authorities to take measures in order to prevent them from being used for a period of 2 weeks. Considering that these vehicles are the only way for residents of this municipality to carry out their daily commitments (work, home and others), this has the effect of making it harder to achieve their goal, and thus paralyse their quality of life in this city, especially in the aforementioned months. Nevertheless, if we refer to the basic principles of the European Union (EU) White Paper that *Action cannot be delayed* (European Commission 2011), the choices we make today will determine transportation in 2050 and the goal that *by 2050, there will be no more conventional cars and fuels in cities* (MIT 2015). Therefore, even if these principles are presented in Kosovo's sectorial and transportation strategy, it is noted that the municipality of Pristina lacks a transportation development plan, or at least it does not seem to be implemented.

<sup>1</sup> Winter SMOG created as a result of climatic conditions (high atmospheric pressure, high humidity and low temperatures) and numerous sources of air pollution (transportation, use of coal, wood, oil, gas, 1 MAV-Maximum Allowed Value for PM10, annual average as per Administrative Instruction 02/2011 for air quality norms 2 MAV-Maximum Allowed Value for PM2.5, annual average as per Administrative Instruction 02/2011 for air quality norms ( $\mu\text{g}/\text{m}^3$ ) 0, 10, 20, 30, 40, 50, 60, 70, 80 'HMIK' PM10 & PM2.5 2017 PM10,  $\mu\text{g}/\text{m}^3$  PM2.5,  $\mu\text{g}/\text{m}^3$  MAV, PM10,  $\mu\text{g}/\text{m}^3$  VML, PM2.5,  $\mu\text{g}/\text{m}^3$  0 10 20 30 40 50 60 70, 80, 90, 'Rilindja' PM10 & PM2.5 2017 PM10,  $\mu\text{g}/\text{m}^3$  PM2.5,  $\mu\text{g}/\text{m}^3$  MAV, PM10,  $\mu\text{g}/\text{m}^3$  MAV, PM2.5  $\mu\text{g}/\text{m}^3$  different waste heat, energy industry - Kosovo A and Kosovo B power plants, various industries and active businesses). Throughout the SMOG period, KEPA and the Ministry of Environment and Spatial Planning have informed the public on the levels of air pollution and conducted various activities to minimise this pollution.

## The youth with cars or public transport?

The findings show that the propensity of men to use cars is high in Pristina, although existing studies, which are the only evidence, show a decline in the rate of car use by young people in Europe. Focas and Christidis (2017: 5, after Kuhnimhof et al. 2011), who compared youth travel patterns in the United Kingdom and Germany, concluded that *the historic trend towards increasing motorisation may have come to an end for young Germans and Britons*. According to Focas, Christidis (2017), the mobility patterns change and young people's travelling behaviours are a major factor in the *Peak Car* phenomenon.

The question being asked today is: what will happen to young people as they grow older? According to Jorritsma and Berveling (2014), it is too early to state that young people will turn their backs on driving (Focas, Christidis 2017). They will simply delay the use of the vehicle. Therefore, they do not want to be without cars, but want to delay the use of cars. There will always be a reason to use cars (Banister 2008).

A decrease in desire to obtain a driving licence is also observed among the youth in the municipality of Pristina. According to data from the Ministry of Internal Affairs, driving licences were issued to 11,599 people in 2016, while only 8708 licences were issued in 2017 (Qarri 2019). This decline may be justified by several factors such as fuel price increases and the driving school awareness campaign of 2016 to increase the price of driving licence fees because of increased hours of practice from 16 to 20 hours.

With regards to this issue, the Social Research Association (2015) found that *the vast majority of young people cite cost factors as the main reason why they are driving less* (Focas, Christidis 2017: 5). They often prefer travelling by public transportation, walking or cycling. There is also an increasing number of young people who say they do not want a car and this thought increases with age. Some recent studies in the United Kingdom (Le Vine, Polak 2014) and the United States (Blumenberg et al. 2012) suggest that early adolescents may be more prone to become car drivers.

However, there are no aspirational data of current young people when they were under 16, in order to know how these aspirations declined

over time. Phil Goodwin (2012) systematically analysed research and debate on the phenomenon of *peak driving*. The author breaks down ideas that negate interpretations of the lack of rise and/or fall of the vehicle and identifies the key themes and issues related to the *peak car*. His study not only systematises the nature of the debate, but also offers three possible hypotheses intended to explain the phenomenon of *peak driving*. The three hypotheses are as follows:

1. the *Interrupted Growth* hypothesis shows that the main reasons for the recently observed tendency changes are the effects of three main factors, namely, income measured as gross domestic product (GDP) per head, population and automobile cost. Current assumptions about future changes in income, population and fuel price combine to suggest that car traffic will continue to increase in the coming decades. One of the main proponents of this theory is the United Kingdom Department of Transport (2013, 2015) which believes in existing transportation calculations, even if they are currently inconsistent with the reality,
2. the *Saturation* hypothesis is based on the assumption that car traffic will reach a maximum point. It proposes that car use per head has reached, or is near, the maximum level that it can reach because greater car use does not yield greater cost or time benefits. Traffic congestion and the alternatives offered by public transportation, walking and cycling define that *peak*. This theory is also supported by studies on travel budgets by Metz (2010),
3. the *Peak Car* hypothesis maintains that car use per head is going through a peak, and the current decline may be an early sign of a long-term decline in car use due to a complex combination of drivers in whom the economic impacts are changed by politics, attitudes, social, technological and cultural changes (Goodwin 2012).

Our case study is not meant to reinforce or weaken the aforementioned hypotheses, but what is observed from the findings speaks of a high degree of car use (supporting the *Growth Interruption* hypothesis), while missing/defective options in Pristina, such as the poor quality of public transportation and the lack of soft transportation, delay the arrival of the *peak* according to the second *Saturation* hypothesis.

## Conclusions

The most widespread form of urban mobility in Pristina is dominated by pendular and personal trips, indicating that the local population is mostly engaged in mobility among residence, work and personal activities. Transportation is characterised by a large-scale use of cars. According to the importance, the second most important ways for residents to travel are walking and cycling. These forms of transportation are used in the absence of dedicated lanes for alternative forms of travelling, due to the lack of soft transportation forms and the bitter reality, that is, the low quality of public transport.

The large-scale use of cars compared to public transport, local transportation, cycling and walking in Pristina indicates a limited transport system with no alternatives. Occasional changes of hierarchy in the form and content of Pristina city development plans and delays in implementation have damaged the essence of urban mobility that must be inclusive, safe, resilient and sustainable in the city of Pristina. This shows that the principles for sustainable transportation development require specific action plans and more willingness in order to become applicable. Unfortunately, these were lacking in the city of Pristina, especially since Pristina is the capital of Kosovo.

By choosing these mobility models and these means of travel, distance and time (the goals of the study) become more difficult to be accomplished for the citizens of Pristina (distance takes longer and time is extended for an equal distance).

If a transport development plan exists and would be implemented in the municipality of Pristina, it would make not only the objectives of the transport sector strategy viable, but also the principles of the White Paper itself. These steps would serve to lay the foundation for sustainable development in Pristina.

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### Author contributions

The authors have contributed to a variety of stages, including here the data collection, processing and analysis, discussion and review of the literature, and writing the paper. They agree to share contributions according their participation: Fitim Humolli (45%), Nevila Chinaj (35%) and Naim Kelmendi (20%).

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