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A Study of Pedestrian Behavior on Various Streets, Tirana, Albania

Abstract

The purpose of this article is to compare several street typologies (distributed from center to suburb) in Tirana, Albania while taking into consideration pedestrian behavior on these pathways. The streets "Myslym Shyri," "Bllok," "Kombinat" (an extension of Kavaja's Street), and "Ana Komnena" (formerly "Fusha e Aviacionit") will be the primary focus of this study. The following variables will be taken into account such as pedestrian behaviors, street identity, dissatisfaction, walking distance when shifting to another zone, effects of greenery on pedestrians, time spent, points of interest, frequency, pavement quality, preferred walking periods, gathering places, utilization of benches, ambulant sellers, impact of vegetation and greenery, water basins, preference for public transportation, and road signs. Direct observations and a questionnaire will be used to determine the accurate information. The study should provide recommendations as guidance for municipalities and stakeholders to better understand the behavior of pedestrians in Tirana's context. The streets that pedestrians frequent the most include the "Bllok" area and "Myslym Shyri" Street. The pedestrian resident population on "Myslym Shyri" street, which is dominated by people of all ages, including children, youth, and the elderly, has a slight advantage over the "Bllok" neighborhood. Furthermore, there is a wide variety of urban elements on Ana

Komnena Street (formerly known as "Fusha e Aviacionit"). Meanwhile, the pedestrians on Kombinati's street suffer a little bit more because of the traffic congestion and vehicle pollution.

Keywords: *street characteristics, pedestrian movement, street typology, pedestrian behavior*

Çeşitli Caddelerde Yaya Davranışları Üzerine Bir Çalışma, Tiran, Arnavutluk

Öz

Bu makalenin amacı, Arnavutluk'un Tiran kentindeki çeşitli sokak tipolojilerini (merkezden banliyöye doğru dağılmış) karşılaştırmak ve bu yollardaki yaya davranışlarını dikkate almaktır. "Myslym Shyri", "Bllok", "Kombinat" (Kavaja Sokağı'nın bir uzantısı) ve "Ana Komnena" (eski adıyla "Fusha e Aviacionit") sokakları bu çalışmanın ana odağı olacaktır. Yaya davranışları, sokak kimliği, memnuniyetsizlik, başka bir bölgeye geçerken yürüme mesafesi, yeşilliğin yayalar üzerindeki etkileri, harcanan zaman, ilgi noktaları, sıklık, kaldırım kalitesi, tercih edilen yürüme süreleri, toplanma yerleri, bankların kullanımı, seyyar satıcılar, bitki örtüsü ve yeşilliğin etkisi, su havzaları, toplu taşıma tercihi ve yol işaretleri gibi değişkenler dikkate alınacaktır. Doğru bilgiyi belirlemek için doğrudan gözlemler ve bir anket kullanılacaktır. Çalışma, Tiran bağlamında yayaların davranışlarını daha iyi anlamak için belediyelere ve paydaşlara rehberlik edecek öneriler sunmalıdır. Yayaların en sık kullandığı caddeler arasında "Bllok" bölgesi ve "Myslym Shyri" Caddesi yer almaktadır. Çocuklar, gençler ve yaşlılar da dahil olmak üzere her yaşta insanın yaşadığı "Myslym Shyri" caddesindeki yaya nüfusu, "Bllok" mahallesine göre küçük bir avantaja sahiptir. Ayrıca, Ana Komnena Caddesi'nde (eski adıyla "Fusha e Aviacionit") çok çeşitli kentsel unsurlar bulunmaktadır. Bu arada, Kombinati caddesindeki yayalar trafik sıkışıklığı ve araç kirliliği nedeniyle biraz daha fazla sıkıntı çekmektedir.

Anahtar Kelimeler: *sokak özellikleri, yaya hareketi, sokak tipolojisi, yaya davranışı*

Introduction

It is crucial to pay close attention to every component of the streets, including similar-height buildings, fascinating facades, trees, windows that promote viewing, crossroads, beginnings, and endings, halting points, and areas for leisurely strolling. In order to effectively manage social interaction, it is crucial to understand how individuals actively utilize and change the physical environment rather than reacting to it.

The behavior of pedestrians is largely impacted by culture, preference, and personality features as well as by environmental and situational variables. Walking as a physical exercise is influenced by environmental conditions (Bierlaire & Robin, 2009). It is significant to underline that every picturesque street welcomes leisurely and secure strolling, particularly from automobiles. The most popular means of segregating and thereby protecting people from automobiles are sidewalks and curbs. They could be physically apart, but it is not a guarantee of safety or peace. A safe pedestrian area is created by trees. Separations are also made by a vehicle parking lane at the curb. Once begun, the spacing of trees along a street shouldn't be interrupted. It is extremely important to keep pedestrians and automobiles apart while also providing shade and aiding in the definition of a roadway. Typically, the conflict centers consist of the desire to prevent trees from blocking entry to a significant public or private structure. Many attractive streets are surrounded by trees, and these may play just as much of a role in defining a street as the buildings do (Allan, 1995). Great streets are well-defined. Streets may be categorized in two ways: vertically, which is determined by the height of the walls or trees that are lined in the street, and horizontally, which is determined by the length and distance between the defining elements (Allan, 1995). Transparency on the street is a crucial problem. Typically, the roadway is made transparent by windows and doors. The maintenance component of the streets is also crucial. Since streets must begin and end someplace, their locations ought to be carefully planned. Doors may always be left open and welcoming.

Numerous elements such as fountains, gates, benches, kiosks, asphalt, lighting, signs, and canopies might be crucial to the effectiveness of the street. In terms of illumination, a streetlight that is positioned too high won't illuminate the immediate area surrounding it sufficiently. In order to better illuminate city streets, lowering the streetlight's height is one of the solutions. Special pavement can be quite expensive, and it rarely results in a noticeable improvement. The benches encourage our presence and assist in keeping people on the sidewalk. Generally, the finest streets are equipped with benches. Great fountains, gates, pavement, or lighting alone are insufficient.

An attractive street should mostly have expanding areas at the intersections, and of course, the great street seems to be accessible by public transportation. Of course, roadways need to consider variables like density, diversity, length, slope, and land use. Great streets exist in many shapes, sizes, and varieties (Allan, 1995).

The chance of a physical accident, as well as the perception of the consequences of safety, comfort, and enjoyment of walking behavior, are key factors in pedestrian behavior. In the 1930s,

Le Corbusier proposed his 'autostradas' as concrete ribbons woven through the canopies of skyscrapers, elevated above ordinary roadways and free of visitors and people for maximum motor speed. Modernism's physical manifestation, urban modernity, was all about speed and also the idea of limitless mobility (Norton, 2008). The young, the weak, the impoverished, and the marginalized are more likely than the wealthy and powerful to be injured by an automobile.

Cultural variables, personal circumstances, preferences, and qualities, as well as environmental elements, all have a significant impact on walking. The potential of the environment to meet basic requirements, foster place connection, and foster a feeling of community are all highly significant primary factors and must be taken into account.

The majority of studies investigate elements like expansion pattern compactness, housing and employment density, accessibility, variety in land utilization, and architectural characteristics like shading setting, the aesthetic appeal of the local environment, neighboring shops, distance from shopping centers, and the availability of appealing stores and homes to determine the environmental matches of walking (Handy et al., 1998); (Ball et al., 2001); (Handy & Clifton, 2001). According to some studies, users are more inclined to walk to districts that have dining outlets including cafés and restaurants, a range of stores, and local and retail purchasing options (Handy, & Clifton, 2001); (Montgomery, 1998); (Hass-Klau, 1999); (Brown et al., 2007). From this perspective, the "Blok" area and the "Myslym Shyri" street are the most suitable and preferable streets in the context of Tirana. Components such as restaurants, bars, and shops are present in both of these areas with significant investment levels. Their location almost in the center of Tirana is also very important for the visitors and for the local community. Furthermore, these regions are particularly appealing to pedestrians.

According to some studies, a person's perception of their level of street safety can be affected by a variety of elements, including the preservation and overall condition of the environment, the design of the streets and spaces, various land uses, the environment's adjustments and adaptations, people's presence or absence, as well as the type of users. "Tertiary places," including shops, bars, and eateries, were highlighted in research on city streets as crucial components of daytime security and monitoring. According to several other researchers (Perkins et al., 1993); (Jacobs, 1961), people reported that streets with businesses and other nonresidential properties on them were safer. Just the psychological and environmental influences of the surroundings can provide pedestrian comfort. Outdoor activities need favorable microclimatic conditions, which include temperature,

sunshine, shade, and wind (Bosselmann et al., 1984). Protection from the sun, wind, and rain offers a physiologically acceptable environment.

According to Xhexhi (2023) some of the most classical examples of Greek cities, using the typical east-west axes, north-south axis dominant in Roman cities, and Islamic cities with the prevalence of narrow streets are designed to benefit from the use of the winds. Besides geography, climatic change has an impact on urban density, directions, the street network, as well as their shape. On the other side, trees are a part of the vegetation that contributes to a strong sense of attachment to certain locations. The utilization of trees ensures diversity and prevents monotony. They are essential in shaping the microclimates that affect a certain area's thermal comfort. The incorporation of green areas in urban life, pollution reduction, alternative modes of transportation, the presence of vegetation, and greater vertical and horizontal urban corridors, are also important factors that enhance the quality of life of the residents (Xhexhi, 2023).

According to another questionnaire conducted within a neighborhood in the city of Tirana, it is revealed that the residents are also concerned about noise and air pollution, regardless of the fact that the level of nostalgia and place attachment for the inner neighborhood is very high (Xhexhi, 2023). According to the actual study, the noisiest streets are “Bllok” area and the “Kombinati” area. The first one is overpopulated during the day and night, meanwhile, the second one is mostly during the day. “Bllok” area and “M. Shyri” Street are occupied by the local community who have a strong sense of place attachment, by the other visitors mostly from the suburban areas, the neighboring districts of Tirana, and foreigners (tourists). Meanwhile “Kombinati” area is visited by tourists on rare occasions and the main problem is traffic. The level of place attachment in this area is low compared to central areas.

1.Methodology

The approach consists of investigation, observation, and direct contact with pedestrians. The questionnaire has been created in a manner that makes it simple for users to get as much data as possible. There are three methods followed to inquire about pedestrians:

1. Direct confrontation (with the pedestrians)
2. Indirect confrontation (the questionnaires were left in a bar (near this road) and the clients responded to them).
3. Memory confrontation (pedestrian memory analysis)

All the responses were collected, digitalized, and analyzed. Each question will be compared for each street, creating different graphs, tables, and findings.

1.1 Location of the streets and areas

This survey's primary goal is to compare various streets in order to identify which one is most frequented and why it is frequented. It also aims to demonstrate both the advantages and disadvantages of these routes. A total of 18 questions were answered. There were collected 28 responses for the “Bllok” area, 25 responses for “Myslym Shyri” street, 27 responses for the "Kombinati" Area, and 23 responses for the "Fusha e Aviacionit” area.

Figure 1. Location of the streets (Source: Google Earth; author's elaboration)



Figure 2. “Kombinat” area, (extension of Kavaja street), by night and by day (source: Xhexhi, K)



Figure 3. “Myslym Shyri” Street in the morning (source: Xhexhi, K)



Figure 4. "Bllok" area in the morning (source: Xhexhi, K)



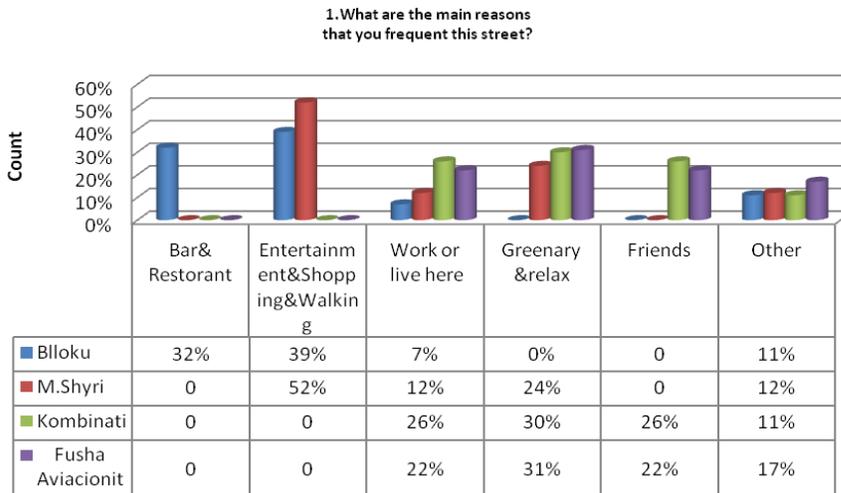
Figure 5. "Ana Komnena" street (former "Fusha e Aviacionit") in the morning and in the afternoon (source: Xhexhi, K)



2.Results of the questionnaire

The results of each question are analyzed in the next graphs.

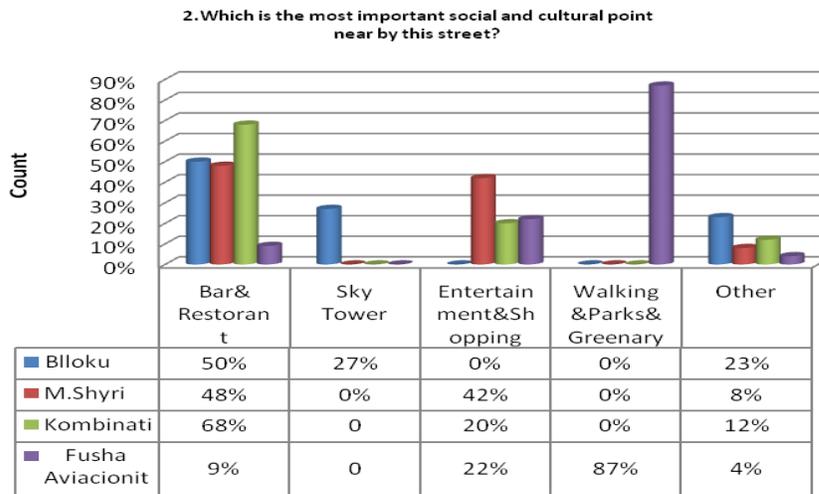
Table 1. Frequency of the streets (source: Xhexhi, K.)



The primary factors contributing to the frequency of the first two street categories are shopping, entertainment, and walking, particularly on "Bllok" and "Myslym Shyri" streets. The

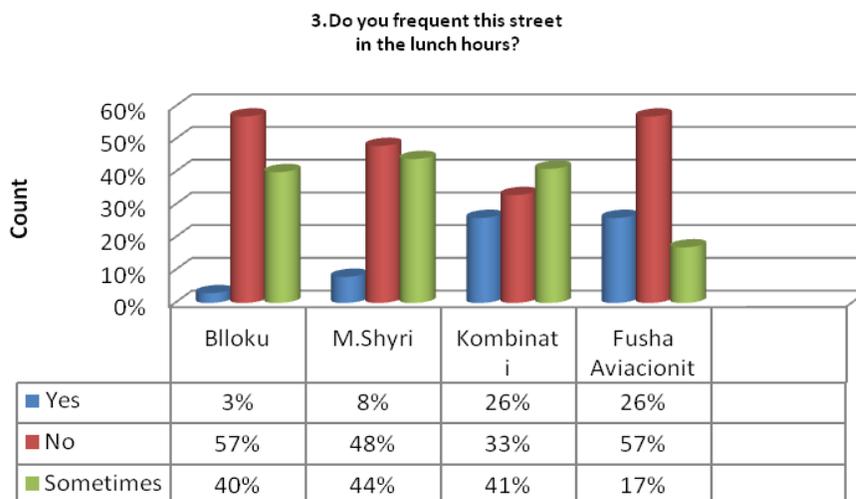
most common choices for the other streets are friends, jobs, and green spaces for recreational activities. According to Table No. 1, the first two streets are the most preferred by pedestrians in terms of entertainment.

Table 2. Most important social and cultural points (source: Xhexhi, K.)



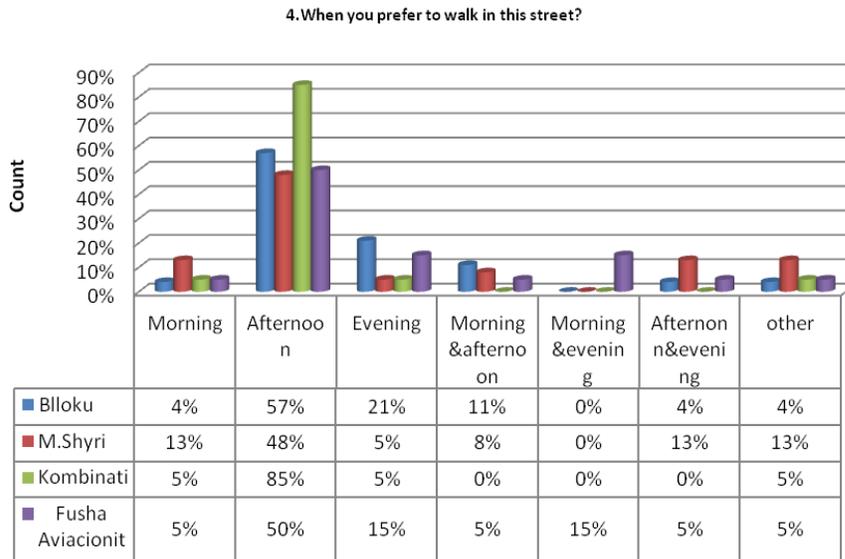
It has been observed that in all these streets, restaurants, and bars are the pedestrians' primary sources of unique social and cultural attraction. Shopping and entertainment occupy the second position. It's significant to take into account that, as Table No. 2 illustrates, the “Sky Tower” is the most attractive point of interest in the "Bllok" area, while the recently constructed pedestrian area is located on Ana Komnena Street (Fusha e Aviacionit). Users within this area prefer to walk in order to enjoy the park and green areas of the promenade.

Table 3. Frequency of the streets in the lunch hours (source: Xhexhi, K.)



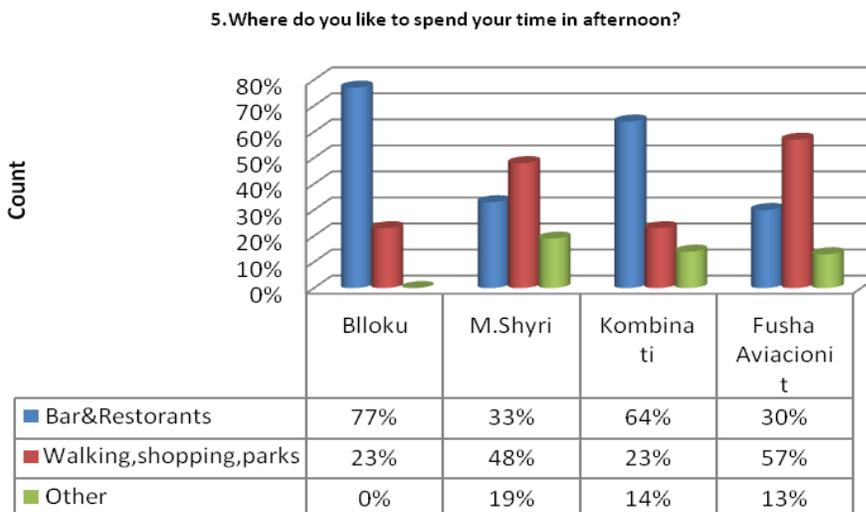
In every street, the pedestrian's frequency of lunch hours decreased. The regions known as "Bllok" and "Ana Komnena" (Fusha e Aviacionit) streets have a greater rate of pedestrian inactivity during lunch hours. Meanwhile, the higher value of the attendance is in "Kombinati's" street as seen in Table no.3.

Table 4. The favorite time for walking (source: Xhexhi, K.)



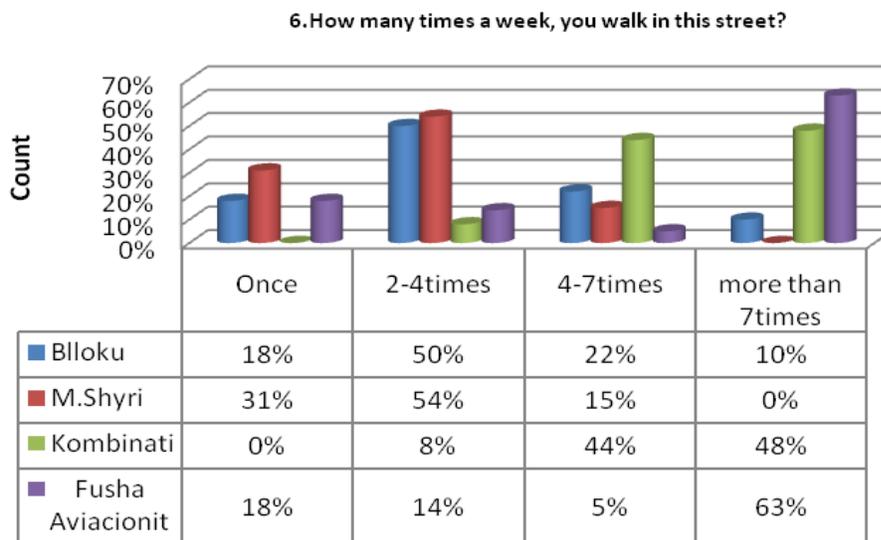
The table above illustrates some quite obvious findings. Most pedestrians who were interviewed reported that they preferred simply walking across the street in the afternoon, and some of them even in the evening. As Table No. 4 shows, pedestrians prefer to walk in the afternoon rather than in the morning in the "Kombinati" area.

Table 5. Leisure time spent in the afternoon (source: Xhexhi, K.)



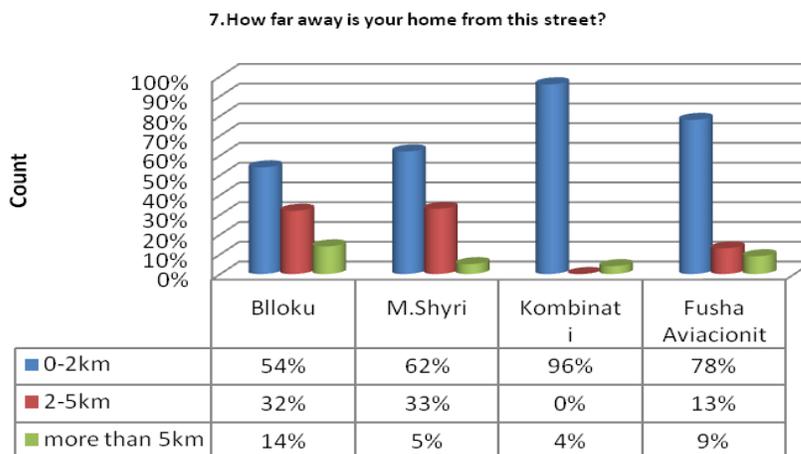
The majority of pedestrians like frequenting restaurants and bars regularly. The only exception is "Ana Komnena" (Fusha e Aviacionit). Most of the pedestrians who circulate on this street prefer taking advantage of the new pedestrian pathway. As Table No. 5 illustrates, "Myslym Shyri" street has the second-highest value related to parks, shopping, and walking activities.

Table 6. Frequency during a week (source: Xhexhi, K.)



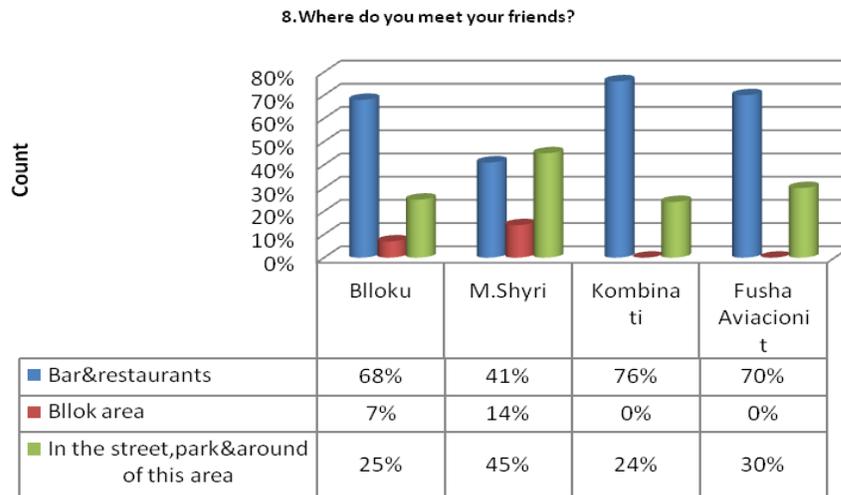
The "Ana Komnena" (Fusha e Aviacionit) and "Kombinati" streets have greater percentages related to this scenario. Streets "Bllok" and "Myslym Shyri" share the second place. Based on the observations, it is evident that suburban pedestrians mainly utilize the streets close to their residences, and they visit inner city streets such as the "Bllok" area or the "Myslym Shyri" street at least twice a week, as Table No. 6 indicates.

Table 7. Distance from the street (source: Xhexhi, K.)



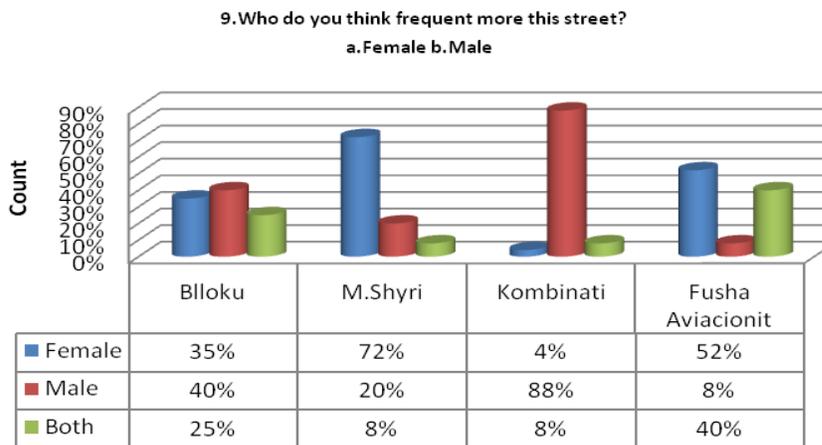
Higher values are found to support shorter distances, with a maximum of 2 km for all streets. Meanwhile, the values in the other two suburban streets are lower. Pedestrians in the "Kombinati" area and "Ana Komnena's" (Fusha e Aviacionit) frequent mostly the nearby streets. One important component influencing the street's frequency level is its distance. Due to the distance, suburban pedestrians are not enthusiastic about utilizing the central streets, as Table No. 7 illustrates.

Table 8. Meeting point (source: Xhexhi, K.)



The majority of pedestrians meet up with friends at appropriate bars and restaurants on suitable streets. The same logic is applied to the four streets. As Table No. 8 illustrates, the parks within the relevant area rank second.

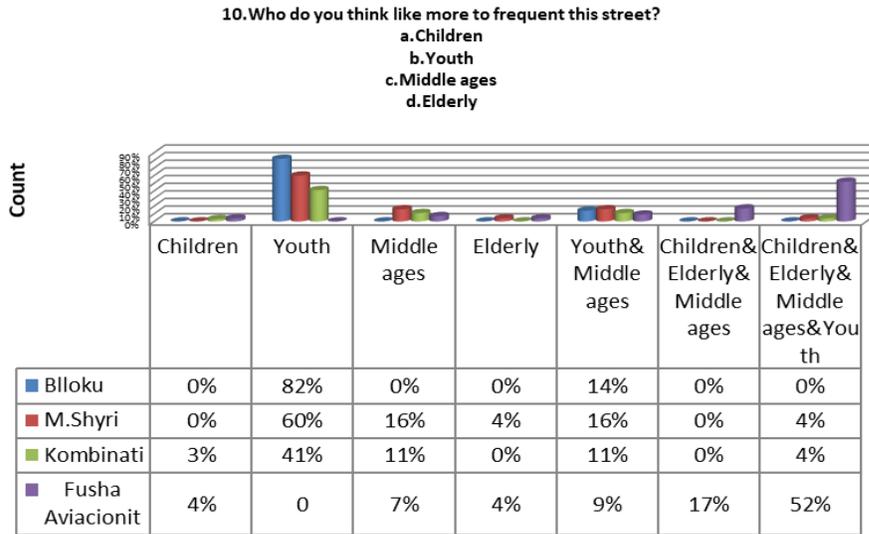
Table 9. Gender frequency (source: Xhexhi, K.)



The question mentioned above is the subject of rather divergent opinions. The males take the first position in "Kombinati's" street. Meanwhile, the females take the first position in "Myslym Shyri" and "Fusha Aviacionit" streets. According to the question indicators, the "Bllok" area is relatively compact. It is observed that males support their gender while responding to this question,

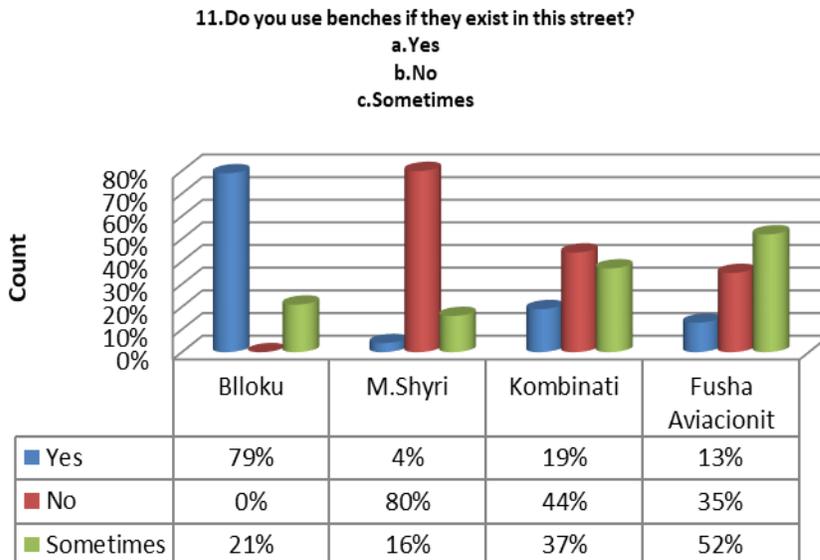
and females may engage in the same argument, according to the observation. Additionally, in “Kombinati” street is clearly visible that the majority of the interviewed pedestrians are male as seen in Table no.9.

Table 10. Frequency by age (source: Xhexhi, K.)



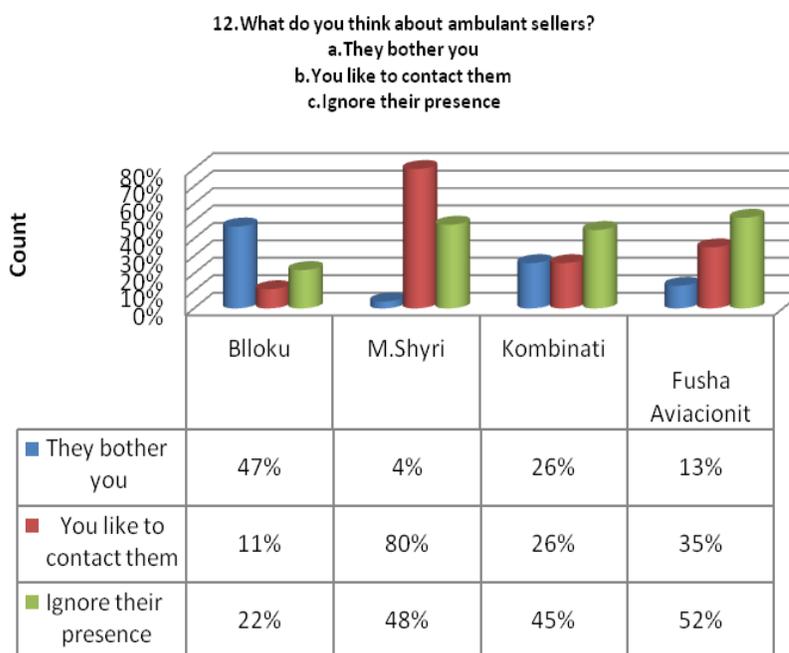
It has been observed that the "Bllok" is the area where the youth is concentrated. As Table No. 10 illustrates, it is indicated that the elderly and children in these streets are not seen as a significant or solid group by anyone at all. According to the responses, these categories are unfortunately neglected.

Table 11. Benches usage (source: Xhexhi, K.)



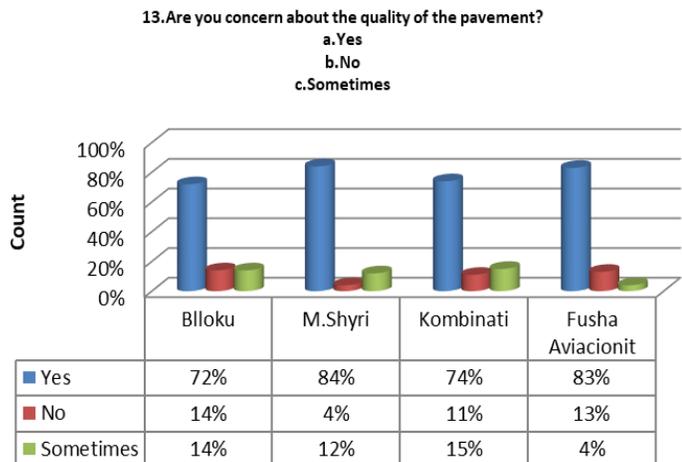
Regarding the above question, there are differing opinions between the "Bllok" area and "Myslym Shyri" street. Despite being quite close to one another, the pedestrian's reactions differ. It is apparent that the pedestrian interviewed had a rather young average age. The younger generation in the "Bllok" area, and "Myslym Shyri" street prefers to simply watch (observe) and engage in several activities while circulating along the streets. This is due to the character of the area. The lack of benches in these two areas is evident. The will of the pedestrian is to use them if they exist. Meanwhile, pedestrians in suburban areas prefer sometimes to use benches as seen in Table No. 11. The benches in these areas are a common component. In the "Bllok" area and "Myslym Shyri" street benches are required in order to revitalize these areas even more.

Table 12. Ambulant sellers (source: Xhexhi, K.)



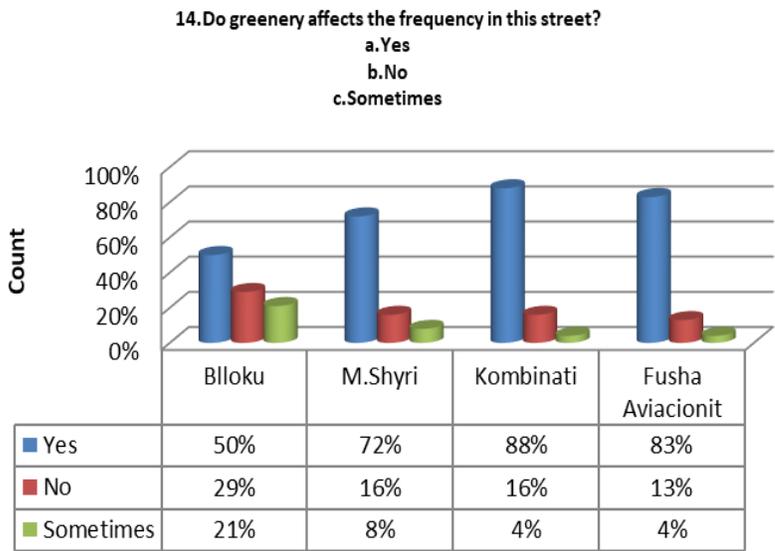
There are a lot of imbalanced values in the above table. The most powerful one is the likeness of the pedestrians to contact the ambulant sellers in "Myslym Shyri" street. According to the observations such responses are related to the commercial character of the street. The pedestrians are prepared for such an impact. The "Block" area presents another value due to the different characteristics of the street. In "Kombinati" and "Fusha e Aviacionit" streets the pedestrians prefer mostly to ignore the presence of the ambulant sellers as seen in Table no.12.

Table 13. Pavement quality (source: Xhexhi, K.)



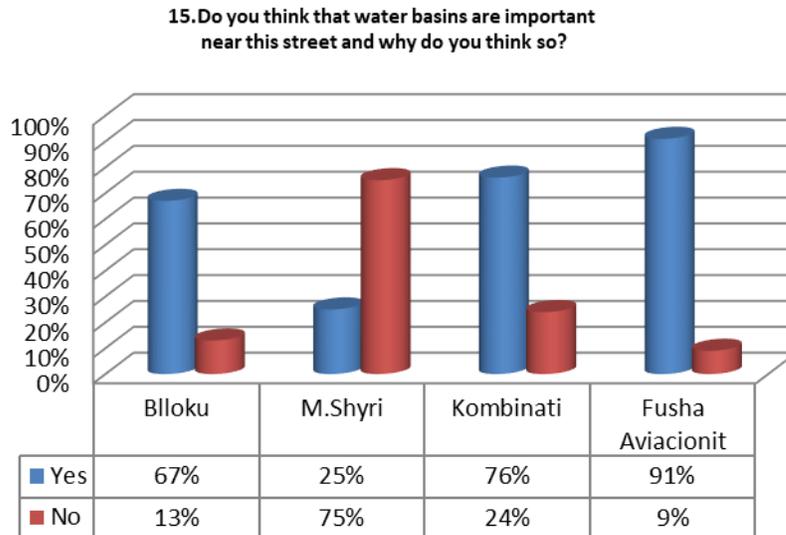
The responses to the above question are clearly understandable. The pedestrians in all the areas are very sensitive and have a lot of concern about the quality of the pavement as seen in Table no. 13.

Table 14. Vegetation and greenery impact (source: Xhexhi, K.)



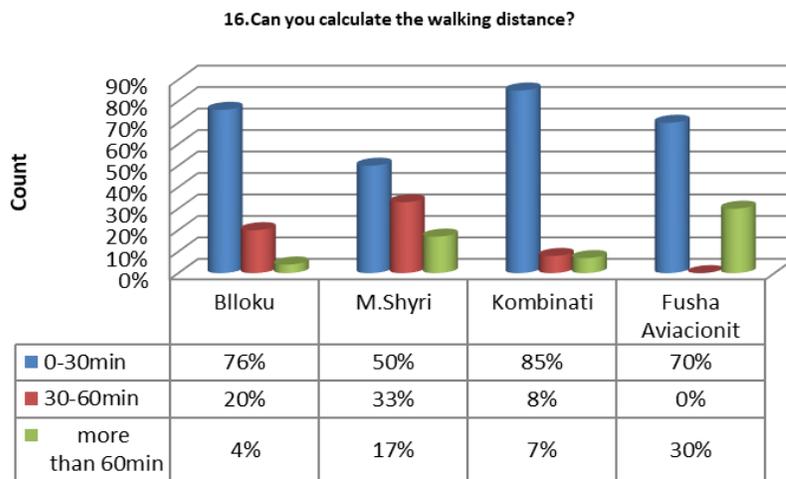
Approximately the same responses are archived also for the vegetation and greenery impact in all the areas. The pedestrians do consider that the vegetation is important during the street's frequency. The pedestrians in the "Bllok" area are not so convinced about the impact of the green areas on the level of frequency of the street. They consider also other parameters as seen in Table No. 14.

Table 15. The importance of water basins (source: Xhexhi, K.)



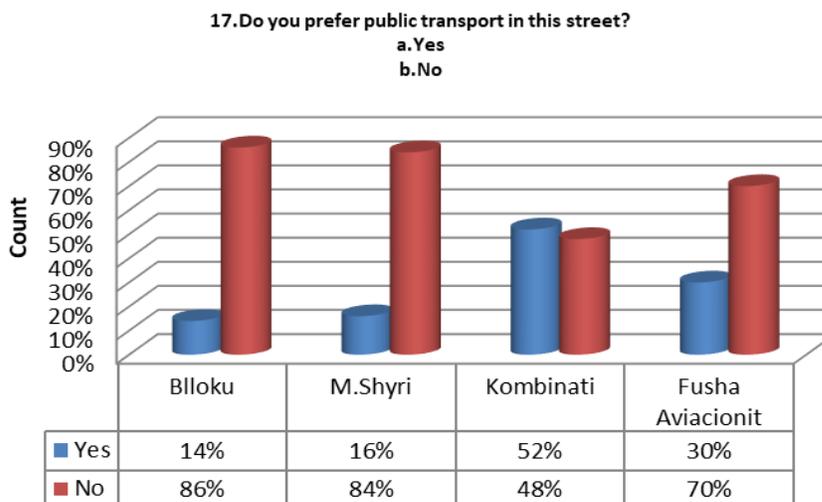
The responses mostly concern how the water basins create a microclimate on the streets. Because of the density of high vegetation, and shade provided on “Myslym Shyri” Street, pedestrians do not consider water basins to be essential in this area. Furthermore, the lack of such commodities for the rest of the streets is associated with the need for water basins as seen in Table No. 15.

Table 16. Walking distance calculation (source: Xhexhi, K.)



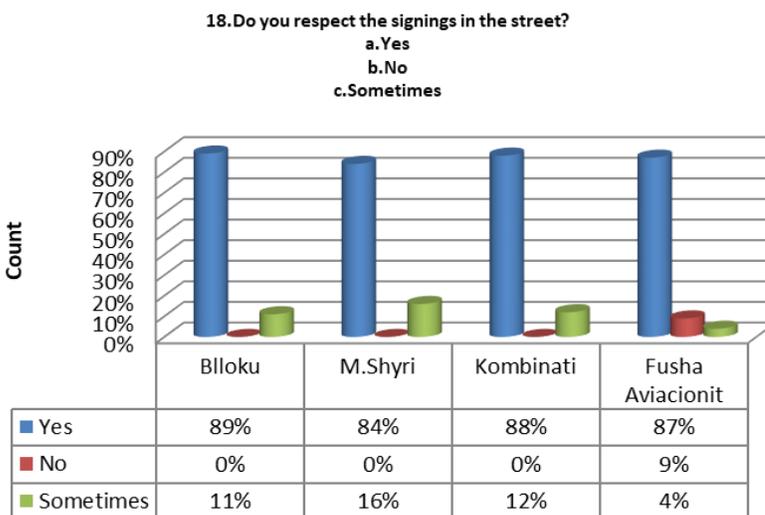
The majority of pedestrians do not frequent these streets for an extended period of time. Basically, they simply travel through these areas. “Myslym Shyri” is the most frequented street considering the time period together with “Fusha e Aviacionit” street as seen in Table no.16.

Table 17. Public transport preference (source: Xhexhi, K.)



Except for "Kombinati" street, the base reaction of the respondents is “no”, as seen in the above table. The solution to this particular problem involves a significant distance from the center. As an intersection for connections, public transportation is essential for residents to reach the city's core. The necessity for public transportation is not as significant on the rest of the streets. The pedestrians believe the public transportation will be confusing for them, due to traffic jams and vehicle pollution as seen in Table No. 17.

Table 18. Road signs (source: Xhexhi, K.)



According to the above table, the majority of the pedestrians respect the signings in the streets but according to the direct observation, the responses do not match. It has been noted that pedestrian traffic on these streets may occasionally be chaotic disobeying traffic signs.

3. Discussion and future work

Due to various projects and numerous constructions, the city of Tirana is presently experiencing a reality that is changing every day. The city continues to place a high priority on building new roads as well as maintaining and repairing those that are already operating for both motor cars and pedestrians. The challenge of today's city is also the creation of roads that should serve the community in the best possible way by integrating all the aforementioned necessary urban components in order to enhance the quality of life of the residents. The study should provide recommendations as guidance for municipalities and stakeholders to better understand the behavior of pedestrians in Tirana. Future studies will focus more on the construction materials, the role of the vegetation, and the orientation of these roads as well as the focal points of interest located in them.

Conclusion

Pedestrians circulate along all the streets mentioned above. There is a tendency for the majority of the suburban pedestrians to frequent the central area ("Bllok" area, "Myslym Shyri" street) a minimum of twice a week. The reverse situation happens very rarely and it happens just for any particular reason. "Bllok" area and "Myslym Shyri" street are the most frequented streets by pedestrians. "Myslym Shyri" street has a slight advantage over the "Bllok" area, which is populated by different categories of pedestrians including children, youth, middle ages, and the elderly. The lack of some urban components such as benches in these areas by adding them, will help to improve the quality of life of the pedestrians. However, such components do not exist in isolation. According to the observations, it is noticed that some parts of the water basins and some minimal rest areas (small parks) are missing mainly for most of the streets. The quality of life will be improved much more if such elements are implemented along these streets. "Ana Komnena's" Street (Fusha e Aviacionit) is relatively a new walking path and does not lack any of the urban components (regardless of the fact that the water basins need to be fixed). For that reason, this promenade is too much frequented not just by the pedestrians nearby but also from the vicinity areas. "Kombinati's" street being part of the national street that passes through this area is relatively psychologically damaged. Although visitors enjoy walking along this street, pedestrians are also conscious of the pollution caused by cars and traffic congestion. According to them, this street is not the best place to raise healthy children. The other urban components are not absent in this street, giving it a constantly balanced appearance. A balanced and ecological city will require a lot of green areas, green infrastructure (electric or alternative mobility) water basins, relaxation areas

(benches), and materials that lack the ability to absorb solar energy, points of interest, and a variety of social, commercial and cultural activities that help to improve these routes. It must also create attraction poles by multiplying them from the center to the suburban area. Reducing heavy traffic, and planning pedestrian streets will prioritize people over motor vehicles.

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