

Rethinking the Role of the Street: A Framework for Developing Liveable Streets in Urban Fabric of Turkey



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Abstract: *The streets have been converted into substantial traffic thoroughfares in contemporary cities, although the prevailing belief that the street is just a channel for movement has expired. Streets provide possibilities contributing to social interaction as a part of public life. They are “more than physical transit roads” because of their wider role and impact on activity patterns and social life by ensuring harmony and dynamism in the urban fabric. This study aims to rethink streets and explore the socio-spatial characteristics of vibrant and liveable street design. Following this aim, a literature review has been conducted through looking at several theories of liveable streets and their role in urban fabric to define an analytical framework which has been used to analyze the street. This framework has been defined in three main categories: physical, social, and functional attributes. Within the scope of this framework, a street in Gaziantep has been chosen as a case study to examine strengths and weaknesses through observations. In conclusion, concrete recommendations for determining problems have been proposed with the help of illustration/visualization techniques following the framework’s criteria. Moreover, these can provide a guideline for future designs.*

Keywords: *Liveability, Liveable street, Characteristics of liveability, Urban design, Social interaction, Social sustainability, Gaziantep city.*

Caddenin Rolünü Yeniden Düşünmek: Kentsel Dokuda Yaşanabilir Caddeler için bir Değerlendirme Çerçevesi

Özet: *Caddelerin sadece hareket için bir kanal olduğu yönündeki yaygın algı sona ermiş olsa da, günümüz caddeleri önemli trafik yollarına dönüştürülmüştür. Kamusal yaşamın temel bir parçası olarak caddeler, sosyal etkileşime katkı sağlayan imkanlar sunmaktadır. Kent dokusunda sağladığı düzen ve dinamizm neticesinde davranış biçimleri ve sosyal yaşam üzerindeki önemli rolü ve etkisi dikkate alındığında caddeler fiziksel geçiş yollarından çok daha fazlasıdır. Çalışma caddeyi bu bağlamda yeniden ele alarak canlı ve yaşanabilir sokak tasarımının sosyo-mekansal özelliklerini keşfetmeyi amaçlamaktadır. Bu amaç doğrultusunda yaşanabilir sokaklara ve bunların kentsel dokudaki rolüne ilişkin teoriler araştırılarak caddeyi analiz etmek için kullanılan analitik bir değerlendirme çerçevesi oluşturulmuştur. Bu çerçeve üç ana kategoride tanımlanmıştır: fiziksel, sosyal ve işlevsel özellikler. Bu çerçevede tanımlanan unsurlar doğrultusunda, Gaziantep’te bir cadde alan çalışması olarak incelenmiş, güçlü ve zayıf yönleri gözlemlerle ortaya koyulmuştur. Sonuç olarak, analitik çerçeve unsurları takip edilerek, problemlerin belirlenmesi ve çözümüne yönelik örnekleme/görselleştirme teknikleri yardımıyla somut öneriler sunulmuştur. Caddenin kamusal etkileşimdeki önemine dikkat çeken çalışma bulguları, gelecekteki kentsel tasarımlar için bir kılavuz niteliğindedir.*

Anahtar Kelimeler: *Yaşanabilirlik, Yaşanabilir cadde, Kentsel tasarım, Sosyal sürdürülebilirlik, Gaziantep.*

1. INTRODUCTION

Streets are essence, public spaces of the urban environment that influence people's daily activities. They have served as the first setting beyond the home where most children have been reared [1]. Since ancient times, the street has provided a public space network in a city [2] and acted as a platform for social interaction by hosting various activities that bring people together [3, 4]. The street is recognized as a public space used for social and commercial activity, communication, political activity, ritualistic and symbolic place in a city [2, 5].

By examining the street, one can understand the city and the society in which the street is located, contributing to constructing a sense of place and identity of the city [2, 3]. As Jane Jacobs (1961) cited: "Streets and their sidewalks, the main public places of a city, are its most vital organs. Think of a city, and what comes to mind? Its streets. If a city's streets look interesting, the city looks interesting; if they look dull, the city looks dull."

Later, the growing vehicular traffic started conditioning all aspects of urban life in the city. For decades, streets have struggled with fast-moving or heavy traffic [5, 6]. Moreover, the function of the street as an interaction place has been socially neglected. With the needs of the growing cities with dense populations, the street was considered just a vehicles road. Vehicular traffic requirements and functional requirements based on separation of the uses were believed as a design dogma. One of the leading modern movement members was Le Corbusier, who said: "Our streets no longer work. Streets are an obsolete notion. There ought not to be such a thing as streets; we have to create something that will replace them". Later he said: "No pedestrian will ever again meet a high-speed vehicle." Moughtin (2003) criticized that fast-moving traffic cannot be accommodated within a street [5], while Stein labeled cars are a "menace to city life" [6].

As a result, today, these streets have turned into unsafe, dangerous, noisy, polluted, and impersonal domains [1]. This dramatic change in urban planning led to the absence of a human-scale environment for the sake of vehicular traffic, which led to the deteriorating liveability of the built environment [7]. Furthermore, the uncontrolled nature of transport construction often negatively impacts urban spaces, causing uninhabitable tracts of public space [8]. However, the streets have been converted into huge traffic thoroughfares in contemporary cities, although the prevailing belief that the street is just a channel for movement is not true. Streets provide possibilities contributing to social structure as a part of public life. They are "more than physical transit roads" because of their broader role and impact on socio-spatial life and dynamics.

It is vital to find urban design options and attributes in urban design in order to improve the quality of urban life [9]. In relation to this, it is important to ensure liveable and vibrant streets in order to contribute to the quality of the urban design and enhance the city's "quality of life." In order to achieve this goal, several social and recreational functions should take place on the street with the minimum negative impact of fast-moving vehicles.

This study aims to rethink the current role of the streets and demonstrate the opportunities of the streets by defining indicators/criteria for alive-liveable streets which contribute to the quality of public spaces. Moreover, proposals in the study providing efficient design concepts on urban fabric of the case study following the criteria will provide guidance for the future designs with concrete applications. The case study has been chosen from one of the metropolitan areas in Gaziantep, Korutürk Caddesi, which is a primary location for shopping and gathering.

2. MATERIALS AND METHODS

This paper focuses on the role of streets for liveable environments, which impacts social interaction. A literature review has been conducted through looking at several theories of liveable streets, which describe their primary characteristics and their role as public spaces in urban fabric to define an analytical framework used

to analyse the street. This framework has been defined in three main categories: physical, social, and functional attributes. The case has been investigated through observations in the scope of the framework proposed by the authors. This analysis of the case study, Korutürk Caddesi as a main road in Gaziantep, reveals the area's physical, natural, functional, and socio-economic conditions and gaps in terms of planning. The observations and accurate studies of the physical aspects of the studied street have been conducted through field notes and photos. The data were compiled during the observations on the site, and each aspect identified has been examined and classified in the proposed framework. In conclusion, the potential in Korutürk Caddesi for being a more liveable and vibrant street will be explored, and concrete recommendations will be represented with the help of illustration/visualization techniques following the criteria of the framework. Moreover, these can provide a guideline for the future street designs.

3. LITERATURE REVIEW AND ANALYTICAL FRAMEWORK FOR THE EVALUATION OF THE STREET

3.1. The Concept Of Urban Liveability And Liveable Street

Liveability is a common concept of urban planning [10]. Even there is no standardized definition for the concept of liveability and liveable city [11]. But there is, a primary condition for a place to be liveable has been broadly accepted “the well-being of a community and represents the characteristics that make a place where people want to live now and, in the future” [12]. While many writers defined liveability as “one of the aspects that could contribute to a high quality of living” [10]. Liveability emphasizes the importance of quality of living because it affects citizens' lifestyles and health conditions within the built environment [10]. It can be concluded that the concept of liveability is mainly focused on the “quality of life” issue. Therefore, the principles or criteria of urban design that should be identified must enhance urban design quality. The prompting calls for urban planning to be liveable is one of the most critical aspects of the city [9]. As urban components influence urban liveability and “quality of urban life” [13, 12].

One of the comprehensive definitions of liveability as mentioned by Crowhurst Lennard and Lennard (1987), “Liveable cities pay attention to the creation of architecture, streetscape, and public space design that facilitate the presence of city dwellers in the public domain and the heart of the city. Such cities are also committed to reducing traffic and resolving safety, pollution, and noise problems utilizing a variety of mechanisms” [9].

As seen, the concept of liveability in urban design can be obtained on a small scale through urban street design [9]. Streets are vital components of liveable and appealing communities. Streets aren't simply movement channels for cars, bikes, or foot; they're also social gathering places. Liveability related to streetscapes first made an appearance in Donald Appleyard's book *Liveable Streets*, published in 1981 [7]; he emphasized the importance of liveability, particularly in the streets, as a critical goal in achieving a pleasant urban environment. As he stated, the street is “the most important of our urban environment” [9]. Since then, the idea of liveable streets has become quite popular. Definition of the liveable street or living street is a street concept that compares to the conventional urban street concept, places more concern and focus on pedestrians and cyclists so that the street can be equally used for all [6].

Liveability is linked to specific features related to streets, such as ease of orientation and movement, to reduce the stresses caused by pollution and crowding, in addition to designing a built environment that is responsive to the varying needs of residents [14, 13].

Appleyard's study identified seven indicators of street liveability, amongst them, the street as a sanctuary safe and secure; a healthy environment; a community where communal life strives; a sense of community and belonging; a place to play and learn for children; and, a historic place with a “special identity for residents or the city at large.” [10, 15].

3.2 Analytical Framework

Based on the theoretical discussions in the literature review, a framework has been proposed to examine the street and develop design typologies and zones for vibrant and adequate street design in terms of liveability. The prominent characteristics of liveable streets have been categorized into three main elements in the literature review. These are physical, social, and functional attributes [12, 16, 17, 18]. Accordingly, the analytical framework has been created following these three attributes to evaluate Korutürk Caddesi in terms of liveability.

physical attributes affect the street’s design, quality, and liveability [18], as most social problems emerge from physical issues [4]. Street should focus on design in terms of physical and spatial improvements in relation to this. Moreover, many studies have extensively emphasized the social attributes of the street as an indicator for liveability [1, 2, 16].

Since no specified approach is detected in selecting the attributes and depending on the literature [18, 17, 8, 19], this study mainly focuses on the most significant examined practical characteristics of the liveable street. Although there are some general aspects for designing liveable streets, these should be intended in a flexible way according to local needs, instead of prescriptive methods or regulations to develop street standards.

Overall, particular physical attributes that form this study’s framework include traffic management, parking space, sidewalk, crossing facilities, facilities for disabled people, street greenery elements, and improved physical attributes (paving, street furniture, vegetation, etc.). Moreover, to enhance liveability, social attributes are the essential points that should be considered. As streets provide the optimum place for public life and social inclusion, impacting street liveability. Furthermore, many studies have stressed the street’s social attributes in its liveability [1, 2]. The social characteristics of liveable streets concern additional safety and comfort, the social interaction and activities occurring in the street, and considering inhabitants’ feelings of privacy, belonging, and responsibility for their streets [16, 19]. There are a variety of functions that take place along the street. When the space’s quality improves, these functions will be developed. Functional attributes of liveable streets are related to many features such as Accessibility, mixed-use and density, and active and passive edges.

Table 1. Attributes of livable streets

Physical Attributes	Functional Attributes	Social Attributes
<ul style="list-style-type: none"> ▪ Traffic management ▪ Parking space ▪ Sidewalk ▪ Crossing facilities ▪ Facilities for disabled people ▪ Street greenery elements ▪ Improved physical attributes 	<ul style="list-style-type: none"> ▪ Accessibility ▪ Mixed-use and density, and active and passive edges 	<ul style="list-style-type: none"> ▪ Safety and comfort ▪ Human Activities

4. CASE STUDY

4.1. Study Site Location

Gaziantep city is the sixth-largest in Turkey and the eighth-most populous, located in the country’s south-eastern part (Figure 1). In the last decades, it has had a rapid population growth and urban extension due to its high migration rates from Syria and the surrounding countryside [20]. The city’s new residential

neighbourhoods emerged to accommodate population growth. As a result, the number of car users rose, causing many issues such as traffic congestion, traffic accidents, bad pedestrian and cycling conditions, and poor social relationships.

Karşıyaka district is one of Gaziantep's low-income neighbourhoods. The main street in Karşıyaka, Korutürk street, is a very lively, mixed-use, commercial street with numerous markets and shops (Figure 2). The mayor of Gaziantep emphasized the importance of Korutürk street as she considered Korutürk Street to be the brain and reflection of Şehitkamil [21]. It is one of the most important neighbourhoods in our city. In 2015, the urban renewal process had carried out in the street as part of Gaziantep Municipality's strategy to boost the city's commercial streets. The renewal was limited to improvements regarding infrastructure and superstructure. The street includes mixed uses, residential, commercial, and administrative.

The commercial areas are dominated by different shops: grocery shops, clothing stores, gold shops, food shops, etc. The street has multi-story buildings, in which shops occupy the ground floor and the first to third floors house apartments. It also includes a mosque, post office, banks, police center, intermediate school, traditional Turkish restaurants, and many other activities. The street has been selected as a case study due to its economic importance and the location's potentialities, which can increase the vitality of the street and improve its functional performance efficiency. As this street is located near the Zeugma Museum, the most famous and iconic place in Gaziantep city. For evaluating the attributes, the survey was conducted to obtain people's viewpoints on the identified attributes. In addition, in-depth open interviews with participants, who were very familiar with the streets, were questioned to understand more about people's perspectives on their neighbourhood and life issues.



Figure 1. Turkey map and Gaziantep city boarder

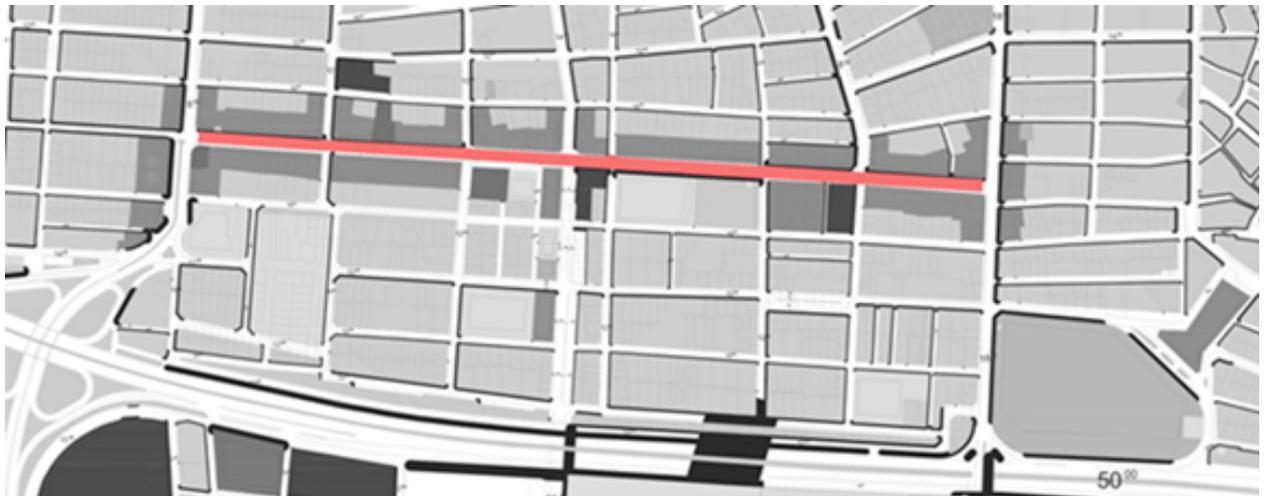


Figure 2. Korutürk Street

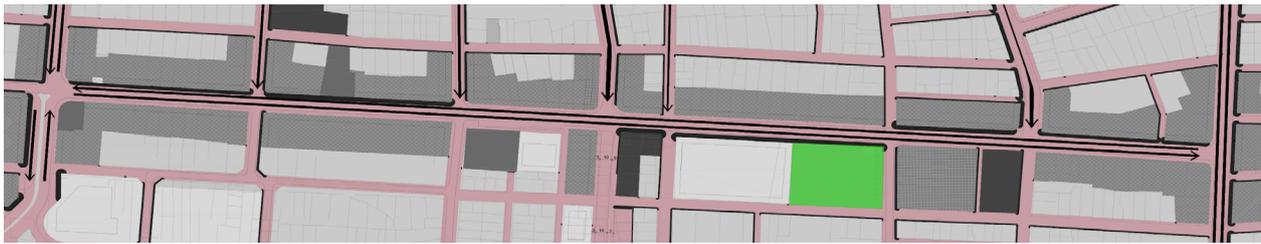


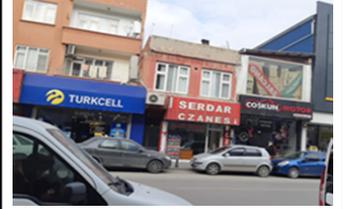
Figure 3. Traffic and Accessibility along street showing primary and secondary streets

4.2. Evaluation Of The Livability Of Korutürk Street

A framework has been defined based on the literature review regarding streets and their role in social interaction in terms of liveability. In the framework, sub-indicators have been classified into three main categories: physical, social, and functional attributes. In the scope of the framework, the socio-spatial characteristics of the case study have been analysed through observations of the authors, including field notes and photos. The weaknesses determined in terms of physical, social, and functional attributes that affect the streets' design in terms of quality and liveability have been represented in Table 2.

Table 2. Summary of finding and resulting attributes of Korutürk street (Photo by Authors)

Problem	Description	Photo
Physical attributes		
Traffic management	Traffic in the street is two-way, including public transportation and private cars, without separating the traffic lanes. It has high traffic causing traffic congestion and environmental pollution for residents. The street's width is not suitable for a two-way street	
Crossing facilities	The street lacks crosswalks and traffic calming; there are no signs to warn pedestrians and drivers or restrict vehicles' speed. Moreover, the traffic doesn't consider the danger of traffic, speed, and accidents with no calming traffic techniques. That affects widely and negatively the safe of the children who use the school in the street.	
Parking zone	Car parks are available on both sides of the street, creating a dead space. Parking on the street causes substantial traffic congestion and pollution. Furthermore, the cars parked on sidewalks obstruct pedestrians' movement. Another issue is that users park on unoccupied lands in the back because the street does not have enough car parking space.	

<p>Sidewalk</p>	<p>The sidewalk is narrow, limiting pedestrian mobility and making it difficult for two or more persons to walk together comfortably. In addition, sidewalks are always taken by the shops, or street vendors, which pedestrians can't use for a suitable comfortable walking</p>	
<p>Street greeneries</p>	<p>The street greeneries fall short of expectations. There is a small number of trees planted and have no order along the street and hardly any landscape features. Furthermore, there are no green areas, and the majority of the surfaces are covered in concrete tiles</p>	
<p>Improved physical attributes</p>	<p>The street lacks sitting, shading elements, bike lanes, and barriers to keep people safe. There are no seats available on the street, even though there are numerous banks and administrative offices where one must wait. The lack of bike lanes on the street is due to the street's width, which is insufficient to accommodate bike lanes. There are no ramps or special materials on the street walkways to safely help physically and visually impaired individuals navigate the street and sidewalks</p>	
<p>Visual Image of facades along the street</p>	<p>The street is in a poor area and suffers from urban decay, which gives the road a bad image. Moreover, building heights vary along the street and do not create a strong sense of place and enclosure. Additionally, the poor condition of shops facades which have no order along the street, makes the street less enjoyable to walk through.</p>	
<p>Social attributes</p>		
<p>Human Activity</p>	<p>People use the street for necessary activities such as shopping and vehicular access without sufficient open space for neighbourly activities. In addition, the street is suffering from a lack of gathering nodes, sitting areas, recreational facilities, and play spaces to do optional and social activities.</p>	
<p>Comfort and Security</p>	<p>Physical and environmental problems mentioned previously affect the street users, such as lack of seating elements, narrow sidewalks, shortage of greenery, and others. These make the street not comfortable when walking.</p>	
<p>Safety</p>	<p>The ground floor is always dedicated to commercial uses, which offer a lively space all day and increase safety through the street watchers (shopkeepers). In contrast, the level of safety decreases at night due to the lack of activities and functions on the street.</p>	

Functional attributes		
Functions and Land Use	The street is a residential street with additional functions on the ground floors of the buildings. These functions play an essential role in creating a lively street. But during the night, this street is completely passive because most of the functions on the ground floors are closed. There is a negative point in the street: the lack of cafés, restaurants, and plazas for social interactions.	
Accessibility	The street is one of the primary streets of the Karşıyaka district in terms of Accessibility. The analysis of Accessibility in the street shows that the number of secondary and auxiliary streets which are connected to the street help to increase the permeability of the street (Figure3). However, while public transportation and private cars have easy access to the roadway, no one uses bicycles due to the absence of bike lanes. Furthermore, sidewalks obstruct pedestrians' movement as mentioned previously. In addition, the existence of many intersections and not enough crosswalks along this street. This situation reduces the street's overall safety	

As a summary, the street is considered one of the most important commercial streets in Gaziantep city as it presents a good economical aspect. Moreover, it offers several services for street residents and visitors. Even though the mentioned physical problems keep the street from being liveable, the diverse and lively functions encourage people to use the street. Therefore, the next part will suggest recommendations and strategies that would help enhance the street situation.

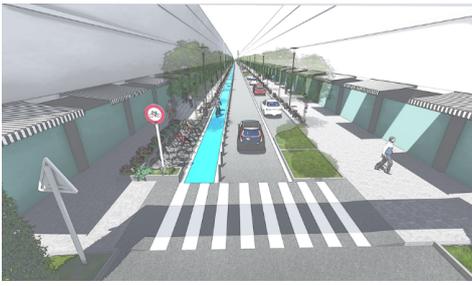
5. PROPOSED IMPROVEMENTS AND DISCUSSIONS

Within the concept of liveable streets, this paper assessed the physical, social, and functional attributes of Korutürk Street. The results showed many urban elements should be enhanced in terms of the liveability of the street. The proposed improvements need to be considered by several actors such as designers, local municipalities, and decision-makers. These concrete improvements present a part of the street with the help of illustration/visualization techniques following the criteria of the framework.

1.1 Improving the Physical Attributes

Instead of prescriptive new methods or regulations for developing streets, these criteria are designed to be flexible to local demands.

Table 3. Recommendations for Improving Attributes of Street

Items	Intervention	Imaginary photo
Traffic management	<p>Traffic management strategies include traffic reduction ordinances and speed limits. Also, the street should be closed part of the street in front of the movement of cars and make them in one direction. There is a possibility to use a parallel street oppositely.</p> <p>Moreover, bicycle lanes should encourage more people to cycle and walk, thereby achieving Accessibility through multiple transportation options. Furthermore, drivers' awareness can improve that they are entering a slower-speed, pedestrian-oriented street environment.</p>	
Crossing facilities	<p>The street needs traffic calming at the entrance to slow entering vehicles and discourage through traffic. Gateways are suited and valuable for all roadway transitions to slower-speed environments.</p> <p>The number of crosswalk lanes along the street should be expanded, and they should be designed for ambulatory disabilities and children as well.</p>	
Sidewalk	<p>The sidewalks on the street must be improved, especially with regard to accommodating the use of pedestrians. They should provide enough space for people to use the sidewalk in various ways: walking, socializing, accessing buildings, etc. They should be designed following the minimum global standard for livable streets, which is 4 meters.</p>	
Parking zone	<p>Car parks are available on both sides, but they must be organized and designed to reallocate for other uses. As it can be served as an extension of natural elements and improve pedestrian accommodations. So, the parking zone can be increased on the secondary streets.</p>	
Improved physical attributes	<p>Physical qualities such as (paving, seating, lighting elements, waste bins, and so on) landscape and vegetation contribute to providing a safe and friendly environment for pedestrians.</p>	
Improve visual Perception	<p>Suitable design criteria should be developed to display commercial signages to get the visual consistency and the harmony to reduce randomness and visual pollution in the commercial street</p>	

5.2. Improving Social Attributes

1.1.1. Improving the Human Activity

Outdoor human activity is divided into necessary and optional activities. People tend to engage with optional activities and encourage interacting with other people when the environment is pleasurable. The presence of commercial stores offering basic utilities, such as corner stores, local cafés, and restaurants, in between residential neighbourhoods is critical in sustaining life on the street [22]. Thus, the businesses on the ground floor should support liveliness and generate and sustain social activities and others that support these activities include cafés, restaurants, and other types of food outlets.

In addition, social activities along the street should be improved in order to attract a diverse group of people with different backgrounds and age groups, such as residents, tourists, and students. Moreover, more attractive functions must be introduced, such as street activities (plazas, street corridors, etc.), which are essential in attaining liveable streets.

1.1.2 Improving safety and security

To achieve liveability in the street, it should be a comfortable place where people can learn and perceive the nature and social connections in the neighborhood. Streets full of people are safer as residents of the street act like great street watchers and sidewalk guardians. Moreover, storekeepers and small businessmen take care and ensure the safety of the street heavily because it influences their business individually. The safety and convenience of using the street can be improved by drawing a clear demarcation between public and private spaces. Furthermore, improving safety elements (traffic and crime prevention) can provide a sense of safety when using the street.

5.3. Improving Functional Attributes

Diversity is one of the most important indicators of liveability; this diversity increases interaction between people and leads to variation in their activities and stimulation [4]. Diverse and lively functions encourage people to use the street and increase interaction between people and leads to variation in their activities. The combination of several uses in the area attracts people and makes the environment safer, especially at night. These functions could include providing high-quality public facilities and playgrounds for children and cultural activities. Moreover, the connection between the Zeugma Mosaic Museum and Korutürk street should be improved to attract more tourists to the street. The museum is an important icon to the city and an attraction point to tourism. The connected street should be well designed and clearly defined to invite people to the street (Figure 4).



Figure 4. The photo shows the connection between Korutürk street and Zeugma Mosaic Museum (In Blue color)

6. CONCLUSION

The study has addressed the importance of street and the relationship with liveability and proposed an analytical framework to evaluate the streets. In the scope of this framework, indicators of liveable streets have been categorized into three main attributes physical, social, and functional. A case study has been selected to apply this evaluation concretely with the help of illustration/visualization techniques following the criteria of the framework. This research provided a review of the theoretical literature addressing the concept of liveability and liveable streets as an essential factor in upgrading streets and creating an analytical framework for the most important physical, social and functional indicators to raise a street's liveability. Recommendations which concretely applied on the case study for increasing its liveability reveal the potential to be liveable streets, which can play a significant role in adding to the overall liveliness of the Gaziantep city. Thus, the street must first and foremost continue to exist as a place for human contact through improved land-use policy, open space design, infrastructure and streets. This means "Everyone must use the streets" [2]. A street on which our children will bring up, adults live, and older people spend their last days.

It is important to emphasize the socio-spatial diversity that characterizes the area in which the study was conducted. In conclusion, concrete recommendations for determining problems following the criteria of the framework can provide a guideline for the future street designs. However, it is worth emphasizing that these implementations should be intended in a flexible way according to local needs instead of prescriptive methods or regulations to develop street standards. Although there are some general aspects for designing liveable streets, specific solutions should be developed for each different area. But it cannot be considered to represent the entire city. Thus, research needs to replicate the current study in other areas of Gaziantep city. However, it highlighted some of the shortcomings in the street design and planning that are needed to be considered by local decision-makers. For future studies, the authors plan to include in-depth interviews for a better understanding of people's perceptions of street design and how it affects their behaviour and activities.

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