Measuring pedestrian quality standards: a case study of Al-Khourng walkway and Al-Rawan Street

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Abstract. Streets are an important component of the urban form and the most popular urban space in the city. Therefore, our streets deserve to be more than just traffic lanes because the negative impact of car-centered lifestyles has led to the reduction of urban spaces and their inadequacy with human needs, as it creates a social burden. We are also increasingly aware of the devastating cost of car air pollution, to our health. Cities are starting to realize that by encouraging more people to walk by reducing the number of car trips, as in old cities. A healthier and equal society can be created, business and investment attracted, and streets become a vital space for pedestrians and need to be governed effectively and efficiently to promote a conducive, sustainable and friendly environment for all. The aim of this study is to find out the difference between a pedestrian street scene and a car based on the characteristics of a pedestrian-friendly environment. The study area that will be covered in the research in the practical side is the Al-Khoranq walkway in the old city of Najaf with an organic planning and Al-Rawan Street in the modern districts of Najaf with network planning. As for the practical side of the research, geographic information systems technology was used with field surveys and image capture of the study area. The study reached a conclusion that the planning of our city around cars left many streets unattractive places for walking or hiking due to the failure to achieve safety and comfort for pedestrians, unlike pedestrian streets that were planned for the person and achieve his well-being when using the street.

Keywords: Human dimension, City of vehicles, City walkers, Pedestrian quality standards.

1- Introduction

For decades, societies were mostly planned for cars, not for people walking and cycling. But this approach to community design has had significant negative impacts on health and safety [1]. When the street environment supports walking through pathways, street trees, accessible building entrances, and convenient and attractive facades, the number of people walking and cycling increases dramatically. Walking or cycling regularly lowers obesity and other health problems. So, communities can make their streets welcoming walking and cycling by reviewing zoning laws and adopting regulations and systems that support cycling and walking [2].

The transportation system for the sustainable city is made based on pedestrian traffic. As a source of socialization, pedestrian streets are the best bed in city life. Depending on the suitability of pedestrian streets in terms of safety and the presence of land uses, it could be a place that represents cities. In fact, pedestrian streets provide the context for the longest presence for people to spend a lot of time in urban areas. People of different lifestyles can communicate with each other without the risk of transport vehicles, in a safe place [3]. It provides vital comforts for people walking by adding benefit and imperative to the person walking and gives them a feeling that they are welcome, and that...
the road is a good place. Pedestrian street improvements must be seen as open consumption just like other essential components of the highway, for example, traffic lights, signage, and traffic barriers. It has been proven that improving the road enhances human well-being and comfort, enhances strength in neighboring areas, and the quality of neighboring lands[4].

The purpose of this study is to find out the difference between a pedestrian street and cars according to the qualification criteria that make people use the street and lead to a livable urban environment. The study concludes that the features that contribute to attracting users to the street vary from one context to another. Al Khournak Street is characterized by an attractive, user-friendly environment that our urban streets generally lack at the present time due to the preference for cars over people when planning the city. The research also recommends reducing the problems of congestion and air pollution caused by vehicles and encouraging sustainable and environmentally friendly transportation represented by walking and cycling and providing them with a safe environment.

2- The human dimension versus planning ideologies
Throughout the 5 decades since 1961, various scholars and city planning theorists have provided studies and arguments for discuss death and life in cities. Much new information has also been developed and important progress has been made in practical urban planning, both in terms of planning standards and in terms of traffic planning. Especially in recent decades, many metropolitan cities around the world have worked hard to establish safer opportunities for pedestrians and urban life by making car traffic a lower priority. There have also been a number of interesting departures from the ideals of modern urban planning, particularly for new cities and new residential areas. Fortunately, interest is growing in building dynamic mixed-use urban areas rather than clusters of single, stand-alone buildings [5].

3- The main problems related to traffic [6]

Figure 1. The main problems related to traffic
(Source: Reclaiming city streets for people Chaos or quality of life, 2004)
4- Features of a pedestrian city
Increasing pedestrians has benefits for cities as it reduces pollution and traffic, attracts investment, and improves health and well-being.

1. **Economic efficiency**: A pedestrian city is more efficient to boost the local economy. Enabling more walking or cycling can help create attractive places to shop, invest and do business. The development of public urban spaces is a strong catalyst for tourism, regeneration and vitality.

2. **More healthy**: Walking is the most active person and has a beneficial effect on both mental and physical health. It also reduces pollution (air and noise) [7].

3. **Strengthening societies**: Good pedestrian areas provide recreation and tourism, increase social connections and a safe lifestyle. Cultural heritage is important as attractions, in addition to the cultural beauty of buildings and streets and their preservation. Which enhances walking, exercise, sitting and viewing, availability of street lighting, a sense of safety and assistance in finding pedestrian friendly paths. The pedestrian-friendly streets also attract cultural activities and strengthen the community [8].

4. **Accessibility**: The accessible place can be used by people of all ages and abilities. Pedestrians in such an environment consider reaching their destinations easier and faster, and humans also demand better quality corridors. Its walking characteristics include a variety of ground use. Depending on the distance to destinations, further walking can be achieved with accessibility [9].

5. **Humanized**: a sense of hospitality and suitability for individual and societal interactions, and pedestrian paths provide a variety of uses and activity characteristics for a diverse urban landscape [10].

Table 1. Benefits of a walking city [11]

| Benefits               | Environment                                      | Quality of life                                      | Health                                      |
|------------------------|--------------------------------------------------|-----------------------------------------------------|---------------------------------------------|
| residents              | The air quality is better, Low noise, cleaner and more efficient. | More open spaces and social interaction, children are more independent and local services more viable. | Increase physical fitness. Reducing respiratory illnesses and improving mental health. |
| Local area             | The air quality is better. Reduced need for development land. | Get rid of congestion. More local services are accessible. | Reduced respiratory illness.                |
| The local environment  | Reduced CO, and other emissions. Retention of greener land. | More walking and cycling                             |                                             |

(Source: Car free and Low-Car Development, 2014)

5- Study area:
The research determines the scope of the study represented by (Al-Khournq walkway) in the old city of Najaf, the street activity is day and night. It is 227 meters long and 6 meters wide. The walkway is characterized by being designated for pedestrians only, with an isolation for the movement of vehicles. While the available uses are commercial, mixed, religious, educational, and heritage buildings, as shown in Figure 2. The second scope of the study (Al-Rawan Street) the object is in Al-Amir district to the new neighborhoods of Najaf. Is one of the largest and most famous commercial streets in the city, it is only active at night. Its length is 900 meters and its width is 25 meters, and the street is characterized by the integration of pedestrian traffic with vehicles, as shown in Figure 3. While the available uses are (commercial and mixed). The practical side of the research was represented by using GIS technology to measure the length and width of the street of the study area with field survey and taking photographs to assess the area. Map No. 1 and 2 show the land uses for the study area.
Figure 2. Al Khourng walkway
Figure 3. Al Rawan street
Map 1. Land uses in AL Rawan street (Source: Researchers)

Map 2. Land uses in Al Khourng walkway (Source: Researchers)
6- The difference between a pedestrian street and a vehicle:
The following table shows the difference between Al Khourng pedestrian walkway and Al Rawan Street. Which has a merger between pedestrians and vehicles, according to the quality standards represented by (protection, human scale, safety and ease of access ....), as in table 2.

| Quality standards | Al-Khourng Street | AL Rawan Street |
|-------------------|-------------------|-----------------|
| Safety            | Achieves          | Doesn't achieve |
|                   | It achieves to some extent |               |
| Comfort           | Achieves          | Doesn't achieve |
| Mixed land use    | Achieves          | Achieves        |
| Attraction        | Achieves          | It achieves to some extent |
| Human scale       | Achieves          | Doesn't achieve |
| Connectivity      | Achieves          | It achieves to some extent |
| Accessibility     | Achieves          | Doesn't achieve |

(Source: Researchers depending on field survey)

The table was concluded based on the field study of the study area, and it was found that the Al Khourng walkway achieves the safety factor for pedestrians of all age groups resulting from the non-interference of the relationship between pedestrians and car occupants in the same street. Which supports mental and physical health and aesthetic image as a result of getting rid of traffic congestion and reducing traffic accidents and air pollution. Unlike Al Rawan Street, where the safety and security factor is not achieved due to an interference of pedestrian movement with cars, which has a negative impact for street users. The Al-Khourng walkway also achieved the comfort factor to some extent due to the lack of seats and appropriate shading. As well as, Al-Rawan Street does not provide comfort for pedestrians for the same previous reasons. In addition, there is a pedestrian sidewalk that is not commensurate with the intensity of movement, which leads to collision between men and women and obstructing the movement of the disabled and their wheels Children, the more afforestation, the roofs and the shading of the space, the more dynamic the pedestrian-friendly environment.

The two study areas contain mixed land uses, including commercial, cultural, religious and residential uses. The Al Khourng walkway achieves a pedestrian attraction due to the holding of cultural and religious activities, which encourages social interaction and attracts tourists and investors. It contributes to creating a friendly and socially ideal environment. As for Al Rawan Street, it achieves the attraction factor to some extent because it does not contain a pedestrian street that encourages the holding of events and festivals. Al Khourng Street achieves the human scale, because the width of the street and the height of the buildings are between two to four floors. Which is the appropriate height for a person and does not make him feel dread, fear and loss. While Al Rawan Street is the width of the street and the height of buildings that exceed some of the four floors, as they do not match the pedestrian scale.

As for the ease of access and communication factor with other neighboring streets, the Al Khourng walkway achieves a high percentage because it has a length of 227 m. It achieves access to services without trouble and hardship and is suitable for all ages and abilities. While Al Rawan Street becomes access to services by making more effort and effort because the length of the street is 900 m not suitable for elderly women and children.
7- Conclusions
1. We conclude that the ban on the movement of unnecessary vehicles is not a separate measure, but rather an important one. The most important measure concerns providing attractive transportation services. With this method, economically and socially compatible accessibility can be achieved, both in the city and in the surrounding areas. Today's city planning has left many streets without attractions for walking, hiking and cycling.
2. Pedestrian cities are considered green cities that are environmentally friendly, walkable streets with services close to the home reduce car use, which reduces fuel consumption and harmful emissions that pollute the environment.
3. At present, the human dimension has been overlooked and not taken seriously in urban planning and design, such as accommodating an increase in cars in urban areas. Compared to the old city, which deals with the human dimension such as walkable streets.
4. A preference Priority for more sustainable modes of transport is an approach that promotes social inclusion and access to services. These policies may also be more equitable in that we reduce the harmful effects of noise and congestion in urban areas that everyone experiences.
5. Reducing automobile traffic is important to the sustainability of a community including its density and civilization, or in particular to the growth of its industrial and business place.

8- Recommendations
1. Reducing congestion and air pollution issues for vehicles and encouraging pedestrian-friendly streets.
2. Enhancing the quality public life throughout the city by reducing reliance on cars and replacing it with sustainable transport by walking or biking.
3. Make public transit, pedestrian and biking more appealing alternatives to private vehicles.
4. Enhance urban economic vitality by developing attractive streets for pedestrians, visitors and investment.
5. Provide easy accessibility and safety for persons with limited mobility.
6. The necessity of reconsidering the planning process that gives priority to the automatic movement completely ignoring that planning should serve the human being. Therefore, it is necessary to focus on creating a safe environment for pedestrians through the work of an integrated and connected network for pedestrians and separated from the automatic movement.
7. City planning with the highest priority given to pedestrians and achieving safety and security for them.
8. Providing neighborhoods that focus on pedestrian movement with reasonable walking distance and easy access to services.
9. Adopting the principle of a sense of the residential neighborhood through the human scale when planning and designing the streets of the neighborhood.
10. Paying attention to the planting and roofing of the pedestrian street and providing seats to sit in order to encourage social interaction.

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