

Potentialities in Creating the Pedestrian Malls in the Historical City Centers : A Study Case of Mawlawi Street, Sulaimani, Iraqi Kurdistan

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Abstract: *The characteristics of public open spaces in the city center play an important role in attracting people to walk when they attend their daily needs, entertainment and interact with other physical and even nonphysical feature of the built environment. The notion of car-free streets or pedestrian malls, especially in the downtown or the historical city centers has been emerged as a critical challenge faced to whose are responsible for urban managing, besides of urban planner and architects as well. Many factors (outside and inside) contribute to take the decision in transforming these streets into the pedestrian malls.*

Sulaimani as the other historic cities, although has the most compacted and traditional structure, especially in original and commercial part of the city, has suffered from the congested city center which day by day increases, the related urban problems and became more un-friendly. The study will identify the considerations that promote the decision makers in order to transform the most significant street in the historical city center into pedestrian mall. This aim requires to investigate factors which have become more common in most studies conducted previously, but some factors which were considered as effective and invisible at the same time, will act potentially and has been more impressive in enhancing these types of decisions.

Mixed methods have been used for analysing the case study. The results displayed that the Mawlawi street has the potentiality in transforming to pedestrian mall.

In the conclusion the decisions and some possible solutions have been introduced for awareness of city's authorities in order to take place in their near future development programs.

Keywords: Public open space, Pedestrian mall, Walkability, Mawlawi Street.

1. INTRODUCTION

What makes a city to be more human friendly safe and vital?. Many planners may say "fabric" or the structure of the city or a group of streets, building and blocks. In the great streets A. Jacobs compared the layout of more than 40 cities in the world and found that good streets tended to have narrow corridors (making them safe from moving cars), small blocks (making them comfortable)

and architecturally-rich buildings (making them interesting) [1].

However streets can accommodate all human needs of citizens like walking, shopping, gathering, meeting, and can be considered as significant living environment [2]. J. Jacobs about street and sidewalks states: "Streets and their sidewalks, the main public places of a city, are its most vital organs." [3]. In many developing cities all over the world, streets as the most usual public open spaces loose their users, attractiveness and popularity. As a result, streets come to be a convergence place with various pollutants besides of losing their functions as a public space with social interaction.

Streets may be made to attract and suit pedestrians by considering several factors. For instance, when paths are designed in a manner that improves their aesthetic qualities, people become more attracted to the street and hence use it more. Another factor in making the street more attractive is the consideration of night time activities as well as allowing the street to cater for diverse functions. Furthermore, successful public pedestrian public open spaces are made accessible, they are well-designed, and comfortable [4].

This study will focus on the Mawlawi Street as one of the main commercial street in Sulaimani downtown, which has been gradually becoming unfriendly, inappropriate of functions as well as lack of safety. The main objective of this study is to explore the abilities to transform Mawlawi Street to successful pedestrian mall, thus tries to answer the main basic question: What are the factors (Visible and invisible) affected in order to be more successful public space and consequently towards the pedestrian mall?

The methodology basically is qualitative, analytical, and will depend upon mixed methods as observations, mapping, questionnaire survey and evaluation of various physical, social, economic and environmental condition that based upon the factors of successful pedestrian malls. Analysing of achieving results, will highlight the potential of the Mawlawi Street in order to act as the successful model for pedestrian malls in Sulaimani city. Finally, this research concludes with specific recommendations for urban designer and policy makers in order to turn Mawlawi Street to be successful pedestrian public open spaces.

2. LITERATURE REVIEW

Often times, pedestrianized streets or malls allow very little to no vehicular circulation within them, these streets are kept primarily for use by pedestrians. The exception are the service providing vehicles such as emergency, waste removal and delivery Automotives [5]. However, there are some pedestrian malls where vehicles are allowed to pass through at certain stipulated times. In bigger cities, especially in Europe and the USA, some pedestrian malls permit mass transit vehicles like buses or trams, and these streets are referred to as transit malls. According to D. Pojani and Stead, Europeans created these streets for several factors. These include the advancement of mobility within city centres, controlling traffic and pollution, the preservation of historic architecture; improvement of the aesthetic qualities of city centres; creation of social public spaces; attracting more pedestrians from other places; decreasing the relocation of business from downtown to suburban areas and competing cities [6]. The primary types of pedestrian malls are as follows:

- **Full-time pedestrian malls:** this kind of street design is focused on increasing the livability and social activity of public urban spaces in a part of the city, thereby restricting all vehicular movement inside the streets. The streets would therefore only be used by pedestrians and emergency service vehicles.
- **Part-time pedestrian malls:** with this kind of street, vehicles are permitted to use the street at specific times only. However, no parking spaces are provided along the street for these vehicles.
- **Traffic-calming streets:** these streets are designed to help in decreasing the speed of vehicular traffic and the dominance of vehicles over pedestrians without fully restricting their use of such streets. However, footpaths are made wider and very little parking space is provided along such streets.

Different techniques are used to slow down vehicles, including the use of different colours and textures on the road in order to make the drivers aware that they are using traffic-calming streets [7].

The pedestrian mall type of primary focus in this study is full time pedestrian malls.

2.1. Pedestrian Malls as a Public Space

Y. Chen et al assert that a public open space is an important part of the urban sphere which fulfils day to day urban life [8]. Generally the term “public space” is considered as a place which is public and readily accessible to be used. It is a part of the city to which inhabitants have access and are able to use freely uninhibited [9].

There are three main indicators which can be used to determine the effective use of public open spaces, and these are; the quality of the physical characteristics, the needs of the users and the spatial structure of the space [10]. According to M. Francis, any well designed public space is anchored by a clear understanding of the user needs; to attract them, facilitate their activities as well as

be comfortable enough for them to spend more time using the space [11].

Public spaces are some of the most important elements of a city in that they provide a setting for citizens to socialize and enjoy recreational activities. Similarly, streets offer these qualities as well as providing the public with space for transportation and offering socioeconomic and cultural activities [12].

H. M. Rubenstein asserts that nowadays the term “mall” is used as a denotation of a new kind of street or plaza in central business districts of the city, focused on pedestrians and public transportation [13]. B. Ergen also asserts that the term “mall” has traditionally meant a public promenade or walkway covered with shade-providing trees [14] (Fig. 1). Pedestrian malls are therefore important manifestations of the pedestrianization movement. When articulated successfully, these malls have been seen to increase sales; they have an impact on the revitalization of the city centre; they inhibit the deterioration of the urban fabric; and they improve human interest and interaction within such spaces [15]. The municipality and other stakeholders such as business owners help in the management of pedestrian malls [16].

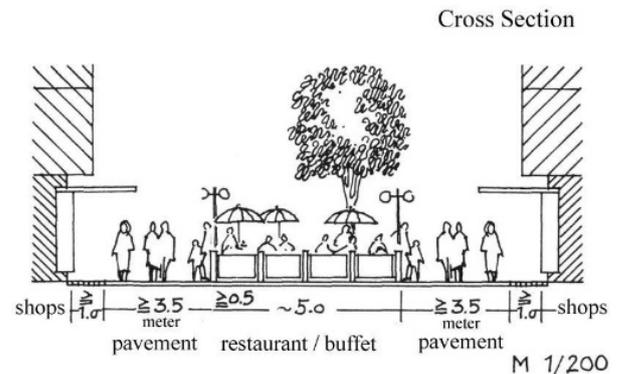


Figure 1: Cross Section of Pedestrian Mall [17]

2.2. Principles of Successful Public Spaces

Recently, many researchers have risen up the question of increased walkability and walking space. M. Alfonzo, established the pyramid of walking needs, as a theoretical model of the decision method in the design of walkable space (Fig. 2). It has been used as a frame in many recent studies. This model can:

- Serve as a framework through which to understand the relative importance of the abundance of variables identified in the current research.
- Assistance in guiding practice and research in future [18].

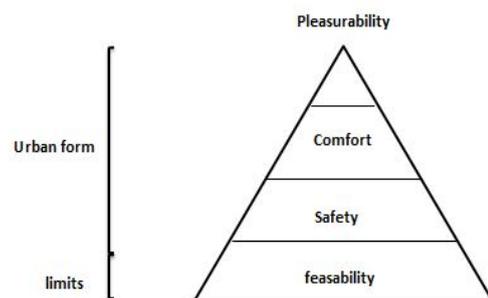


Figure 2: The concept of hierarchy of walking needs [18]

Environment have a great relationship with public space activities. When designing pedestrianized streets or malls, it is important to consider carefully the relationship between humans and their environment.

S. Abley asserts that walkable public open spaces offer “the range to with the built environment is friendly to the presence of people who live, shop, visit, enjoy, or spent time in an area”. In other instances, the term “walkable public open spaces” is widely used in association with sustainable city, provision of economic and social benefits, and they offer the public access to outdoor health activities, especially in densely populated areas.

Additionally, there is a growing body of written work which shows several characteristics of walkable public open spaces (streets); some of which include the fact that they bring life to city centres and contribute as livable spaces which provide safer urban environments [19].

F. Kent and A. Schwartz are among some of the classic and contemporary urban theorists who defined accessibility, activities, comfort and sociability as the four main essential features of successful streets [20].

All these are designed in a manner that retains and promotes the vibrancy of pedestrian malls, as well as people’s attraction to such spaces. F. Kent also asserts that “If you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places”. Furthermore, other urban design researchers and scholars consider the four factors of thriving public spaces as accessibility, use, design and comfort [4].

There are four factors of successful pedestrian malls:

- **Accessibility**

According to K. Bates, a successful public space is one with good accessibility, where the public can walk, use public transit, cycle, and where car parking is provided nearby. An increased number of entry points for pedestrians and public transport users may be articulated by using shorter blocks and more intersections to allow for easier access to different parts of the space.

Pleasurable and safe pathways are also important in making these spaces attractive [1, 21 & 22]. J. Speck articulates that the number of pedestrians is increased by more transit in the city and he also puts emphasis on the notion that good transit is aided by compact, diverse and walkable neighbourhood structures [22]. J. Gehl and J. H. Crawford adds that successful public spaces should provide ample parking within close proximity so that users of the space may be able to park and walk through the spaces [23&24].

Accessibility depends on three things: the capacity of people to travel or communicate, the location of opportunities and activities, and the availability of connections using transport or electronic communications as shown in Figure 3 [25].

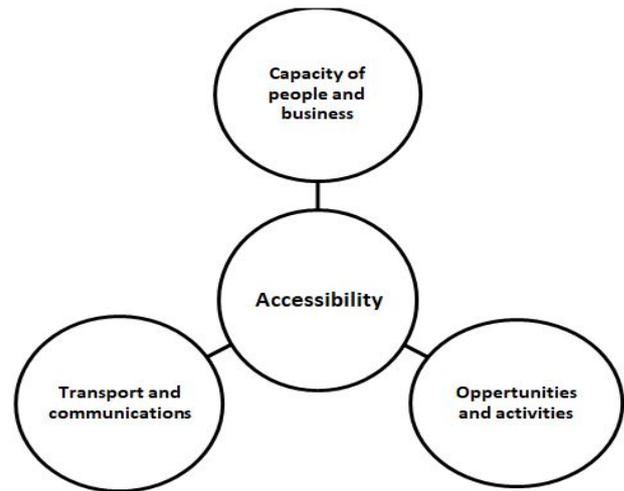


Figure 3: Dimensions of accessibility [25]

- **Uses and activities**

An active street life is created when public spaces offer opportunities for sitting, walking and allow for participation in activities, thereby increasing social contact and recreation [21, 26 & 27].

According to J. Gehl, people are attracted to outdoor spaces when there is a variety of activities and A. Jacobs asserts that public spaces which have residential quarters close to them are often successful [1 & 21]. Additionally, a key component of successful public spaces is the mixed use of buildings, especially those around public spaces and along main-street corridors. These various uses help in creating physical and economic diversity which makes the street more active [22 & 13].

W. H. Whyte emphasizes the importance of food establishments such as food carts as a means of encouraging people to stay in the space and interact socially [29].

It is imperative to also consider placing various attractions not too far apart from each other while maintaining the main attractions at the ends of the public space for people to have easier access while moving along the space [26].

- **Design**

It is important to consider the form of a public space in determining how successful it will be in terms of keeping people interested in it. Form has three main factors which include location, enclosure and visual interest.

With specific regard to pedestrian streets, C. Alexander and W. H Whyte asserts that public spaces function better when located in the heart of the city, downtown [26 & 28]. Furthermore, in order to define the public space and orient users towards it, buildings should be built close to each other and along the public space ad facing it [1, 21 & 23]. Creating enclosure is one key factor in designing public spaces. They should also be created at small scales so that users are able to indulge all their senses when experiencing the space, and it is particularly important that they have visual connection and they are comfortable to interact in such spaces [21].

An enclosure that is, to human scale may be achieved by determining a proportional balance between the width of the public space or street and the height of the buildings

directly adjacent to it. Many urban theorists assert that the height of buildings around public spaces should remain low at about 4 to 10 stories high [1, 21, 23 & 26]. Furthermore, C. Alexander asserts that the difference in height between two neighbouring buildings should remain at one storey.

People may also be encouraged to use public spaces through the aspect of visual interest, which A. Jacobs defines as the mystery and the magic of urban design and further asserts that this visual interest is created through the physical layout of the public space, how building facades are treated as well as through landmarks and views which attract people to downtown. While articulating the form of public spaces, amenities and services to the public should be thought out as well. These amenities should include space for sitting, landscape and water features, benches, lights and sculptures [1].

• **Comfort**

Pedestrian zones, just like any other public space, should be comfortable for the users. This comfort encompasses protecting people from harsh weather conditions and maintaining the space to keep it clean and livable. Nevertheless, comfort is derived from how people feel when using the space. With physical comfort, having access to the sunlight, shade and protection from the wind are prerequisites for a successful public space [21 & 28]. According to J. Speck, when a public space offers physical comfort, people are able to use it through most weather conditions. Additionally, elements such as trash containers should also be designed in such a way that people will want to use them [22].

It is crucial that all amenities found in public spaces, including streets, are well maintained and kept hygienic [27]. Last but not least, there should be pavements provided to provide comfort when walking [21]. So, and as mentioned previously the study try to tabulate all these main or secondary dependent or independent variables which are contributed in transforming the most open public spaces (streets) in historical cities into pedestrian malls in table (1), as following:

Table (1): The layout of all variables affected in transforming the public open spaces (Streets) into pedestrian malls in historical city centers (by authors)

Main issue	Main objective (dependent variable)	Main factors	Independent variables	Indicators
		Physical characters	Accessibility	-Easy accessed -Public transit Sufficient parking nearby
			Activities	-Variety of activities -Mixed uses -Main attraction at the end of public space (Sculptures or land marks) -Social contact - Recreation

Man to Public urban space relation ship	Walkable public urban space (Pedestrian mall)		Design	-Easy accessed -Public transit -Sufficient parking nearby -Variety of activities -Mixed uses -Main attraction at the end of public space (Sculptures or land marks) -Social contact -Recreational activities -Enclosure -Human scale (proportional relative scale between width and height of buildings) -Visual interest (building facades Colors textures landscaping signage. -Building along the street (building close to each other) -Design of amenities (sittable space – benches– lighting
				Comfort
	Non-physical characters		Historical background	-Time factor -Historic events
			Spatial structure	-Its location in the transport system -Connect to district. -Land uses
			People's loyalty	-Its concerns to local inhabitants -How is attractive to visitors -To which extent it contributed to citizens mental map

3. CASE STUDY: MAWLAWI STREET

Mawlawi Street is selected as a case study for this study because its significance as one of the busiest and famous historical and commercial streets located within the core of the Central Business District (CBD) of Sulaimani. As an influential axis, it links the public park and Salm Street to the city center and historical area and also it is the entrance to the city center and historical district in Sulaimani city, with the width of 15m and 750 meters long (figure 4). This street as a case study, which hosts a variety of activities on both its sides, including hotels, restaurants, retail stores, green groceries, bookshops as well as vendors and hawkers as part of the informal trade in the street. However, because there is no efficient public transport, people rely mostly on privately owned cars, which causes congestion on the street and makes it uncomfortable for pedestrians when walking there. Furthermore, there is a lack of a residential function and the built environment has unattractive qualities and for such a historical street, it has become inactive and unsafe especially at night [29]. However, it is important to promote the potentialities in transforming such a commercial street in historic downtown to the successful pedestrian mall, see the following figure 5. Moreover, for the purpose of assessing of Mawlawi Street, S. AlObaidy has suggested the night activities for Mawlawi Street. In order to activate some places and shops along the street due to the functional variation related to the street [31].



Figure (4): Location of Mawlawi Street (by authors)



Figure (5): Perspective view (Day and Night time) of Mawlawi Street as the busiest commercial area [29]

3.1. Methodology

To achieve the research objectives, and in order to explore the potentialities of walkability in public open spaces (Streets). This research conducted the mixed-method approach which is quantitative and qualitative data. In this regard, J. W. Creswell et al, motivate researchers to use mixed methods in doing their research, because the combination of both forms of data provides the most complete analysis of research problems [30].

The qualitative survey included observation and interview. The direct observation method is used to collect data which is concentrated on the physical aspects and social behaviours of the street. The interview was conducted by 5 professionals (like architects, urban planners and designers and municipality leaders) and 50 local people who work in Mawlawi Street to validate the previous the theoretical findings.

Quantitative data were collected via questionnaire and conducted with 50 visitors and users to Mawlawi Street. For data analysis to find out the contributory factors due to stimulate the traditional street transfer to pedestrian mall. Based on participant data, the main variables have been analysed, the analysis process includes different statistical functions, for instance, X² (Chi-Square) test, T- test and a one way analysis of variance (ANOVA) to find Mean of the variables in order to obtain the essential information.

Finally, the summarised results will be presented in tables in the following sections. All tests were performed in IBM SPSS Statistics 24.0 software. Further methodological issues should be taken seriously such as (SWOT) analysis in order to ensure a valid analysis leading to reliable results and findings so as to understand their perspective about the potentialities in transforming Mawlami street to the successful pedestrian mall for four basic characters were found: accessibility, uses and activities, design, and comfort.

3.2. Observation

More attention could be paid to activate public spaces and focusing the concern for quality on the physical elements that cater for walkability. Furthermore, a deeper understanding and evaluation of the street as a dominant public space in an urban setting, based on extensive research and literature review; is important in identifying physical features which act as the main characteristics of a walkable street [32]. Direct observation is a method which will be used to collect data which will be focused on the physical, functional and social imperatives of the street; for instance, uses and activities, comfort, design and accessibility.

Photographic images will also be taken as a tool in documenting this data on the characteristics of Mawlawi street. Mawlawi street is the most popular commercial and shopping mall street in the city of Sulaimani and most of its buildings on both its sides are single story structures (and the street is 15m wide, creating a weakened sense of enclosure) which host different activities such as cafes, shops, restaurants, retail businesses, hotels, offices, a farmer's market in the middle of the street and a small public plaza at the end of the street in order to existing these variety of activities on both its sides in Mawlawi Street it helped to transform and suitable to be a Full-time pedestrian malls, as shown in figure 6.

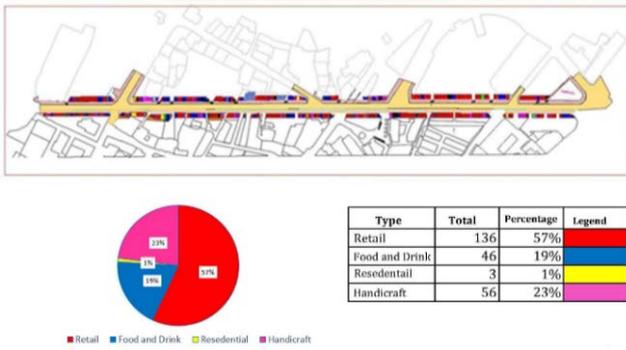


Figure 6: the plan image of Mawlawi street showing the different types of activities (by authors)

Mawlawi Street, there is a high volume of vehicular traffic on and insufficient parking space, this leads to parking on the edge of the street, thereby disrupting pedestrian access and circulation, as well as causing a conflict between vehicles and pedestrians. Additionally the street is also uncomfortable for pedestrians as the sidewalks are very narrow and inaccessible to physically disabled people. By virtue, but Mawlawi street experiences a high concentration of activity during the daytime, but when most of the businesses and shops close and this makes the street unsafe to use at night, this illustrated in Figures 7.



Figure 7: Heavy traffic at day and inactivity at night on Mawlawi street (by authors)

As revealed in the following figures, this street has no visual appeal in terms of the architectural features of the buildings, this makes it uncomfortable to the users. There are a few short trees along the streets as well as awnings on some buildings, however, these do not offer adequate shade or protection from the sunlight and wind which makes it an uncomfortable space to walk in. The street sidewalk is also unclean and the buildings are not well-maintained which adds to the discomfort of people using the space.



Figure 8: Non-visual appealing and uncomfortable in Mawlawi street (by authors)

In addition to that, in February 2019 the traffic authority in Sulaimani made some changing regarding to traffic directions in Mawlawi street the traffic jam in Mawlawi Street gradually has reduced (Figure 9).

However, traffic flows have increased and pedestrian safety also reduced because of increase speed of vehicles along the street.



Figure 9: Changing direction and unsafe pedestrian crossing in Mawlawi street (by authors)

3.3. Results and Discussion

Factors (physical and non-physical), which have the basic roles in pedestrian mall production, have been investigated; and discussed consequently as following:

3.3.1. The relationship between Street comfort

measurable and opinion about design of street As J. Gehl has stated that a public space should have paving which is comfortable to walk on and it related to good design [21&24]. As well as, it has revealed that some feel that detailed design at the small scale is crucial to creating a strong design foundation and that this makes it possible for other activities to develop relaxed people [21 & 28]. ANOVA test has been taken to make sure that there is a good relationship between design and comfortability. As illustrated in the following table 2, the analysis of the relationship between design and comfortability measurable, as increase the mean of design due to rise in the mean of comfortability. Though, there is no significant relationship between them, which is the chi square estimated values bigger than the confidence levels $0.088 > 0.05$ from the Chi-Square test.

Table 2: ANOVA test to find out the mean of design and comfortability measurable (by authors)

Street comfortability		
Opinion about design of street	Mean	Number
Negative	4.41	22
Neutral	5.35	17
Positive	5.45	11
Total	4.96	50

3.3.2. The relationship between accessibility and comfortability

As well as, the ANOVA test has been considered as shown in the table 3 to find out the question, which is what type of transport mode people prefer to use for Mawlawi Street? From the answer of the question displayed that more people are going to use walking at the same time people more comfortable, but some of the people use private car, which is less comfortable. Based on this fact, it will improve accessibility of transport and walking space, then due to increase of comfortability.

Table 3: The relationship between accessibility and comfortability (by authors)

Street comfortability		
Type of transportation mode	Mean	Number
Private car	4.56	16
Public transport	4.86	14
Walking	5.35	20
Total	4.96	50

3.3.3. The relationship between activity and comfortability

Using T-test for analysis of the data as illustrated in the (table 4) that the majority of people are not visiting the Mawlawi Street at night because of darkness and not shopping meanwhile, they are comfortable. It can be seen that there is a good relationship between activities of the people and comfortability particularly at night, because if Mawlawi Street open at night and having different activities such as; cafe, restaurants, people are more likely to visit there, people might take rest after work.. However, there is a same issue in terms of restaurants and fast food. This result is also supported by questionnaire survey. Many participants stated that the Street does not need new shops and products, but it needs availability of good quality of clothes, fruits, vegetables, and fast food for example at night.

Table 4: The relationship between activity and comfortability

Street comfortability	Visiting at night	Mean	Number
	Yes	4.30	10
No	5.13	40	

3.3.4. Non-Physical characters:

As mentioned in the literature review the main variables that constitutes this factor are historical background, spatial structure, and people's loyalty. All these factors have some secondary indications which draw the way how to measure them. As shown in the following sections:

- Historical background:**

Time factors and historic events are some indications which determine the outline for this variable and the verbal or drawing descriptions are clarified as in the table below (table 5):

Table 5 : Historical background variable, its indications and descriptions (by authors)

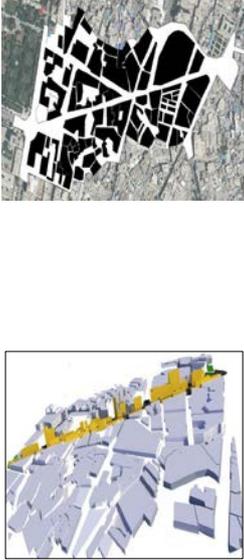
Historical Background	Time factor	The history of mawlawi street is returned to the history of Sulaimani construction that means that the city and the street have over than 200 years old.	The history of the city is evident that the street could not be separated with all main and important historical events of the city, moreover it contributes
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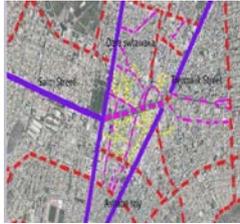
	Historic events		in writing the history of the city.
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- Spatial Structure:**

Spatial structure for any urban area is concerned with its location among some spatial system networks as mass transportation and spaces, ratio or its compactness, and its connectivity to the around neighbourhoods or land uses, as clear in the following table (6):

Table 6 : Spatial structure variable, its indications and descriptions (by authors)

Spatial Structure	Its location in the transport system		-In the heart of the transport system of the city. -Form the main axes elongated from the center of the city toward the western boundary of the city -Figure-ground image of the city shows that the street characterized by the compactness which the built-up area is in high level, besides of the streets, alleys and some demolished buildings helped in increasing the open spaces ratio in the study area to about the 52%.
	Space ratio or its compact		-The street connect the

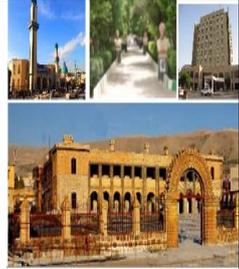
	Connect to important neighborhood land uses		northern part of the historical city center. -Connect the historical residential neighbourhood (Kaneskan) to the main traditional commercial center of the city.
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• **People's Loyalty**

This item includes some indications related to how the street contributes to drawing the mental map of inhabitants, how it attracts the visitors, what are the visual impacts on the street users, as explained in the table below (table 7):

Table 7: people's loyalty variable, its indications and descriptions (by authors)

People's Loyalty	Its concerns to local inhabitant		In the questioner survey showed that %70 people are concerned to local inhabitants and around 80% of people think about the Street as daily activities and their needed.
	How is attractive to visitors		Because of Mawlawi Street is a street such as land mark in the City. As well as, it is a place in city center with different activities which close to each other.
	-Visual impacts		As noticed in the questionnaire results that people's royalty returned to visual impacts (streets proportion, some points in the street, some buildings, and some landmarks)
	To which extent it contributed to citizens		The availabilty of some important

mental map		landmarks and the Mawlawi's connection to those landmarks helped inhabitants to draw their mental maps easily and clearly.
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3.4. (SWOT) Analysis based on interviewer and professional perspectives:

Based on literature review, accessibility, uses and activities, design, and comfort characteristics of the Mawlawi Street have been discussed and made the Open-ended questions, users were asked questions about the strength, weakness, opportunity, and threats in order to understand their perspective about potentialities in transforming Mawlawi street to the successful pedestrian mall for those basic characteristics which analysed and evaluated variables as mentioned above.

The summary of the interviews and variables showed in the table (8). As a finding of a SWOT matrix analysis of the street which revealed those negative points keep Mawlawi Street from being an unsuccessful pedestrian mall. However, existing more significantly positive points, including strengths and opportunities that could be combated these problems and be essentially important to create a great design strategy which could support in making Mawlawi Street the more vibrant walkable street.

Table 8: SWOT analysis (by authors)

Strength	W	Weaknesses
<ul style="list-style-type: none"> • Existence of permeability. • Existence of public transit nearby • Mixed use area. • Variety of functions. • Proper of street width. • Continuity Building along the street. • Historical background. • Linked between two strong nodes (Bakhi Gshity and Sara Square). • Compacted area. 		<ul style="list-style-type: none"> • Insufficient parking in the street. • Poor condition and narrow sidewalk. • Lack of activities at night. • Imbalance of different sexes. • Lack of visual interest. • Lack of street elements such as sittable space, way finding and public toilets. • Street vendors make barriers for both pedestrians and cars. Inaccessible for disable people.
Opportunities	O	T
<ul style="list-style-type: none"> • Existence of municipality vision, strategy to close and redesign the street to be a pedestrianization street. • Availability improper activities can be replaced for new development activities for 24 hours. <p>This transformation will be the first step to change the other similar streets to pedestrian malls in the future.</p>		<ul style="list-style-type: none"> • The idea may be rejected by those whose their interesting exposed to be in dangers • Losing identity of architectural features and culture. <p>The economic crises of KRG and local authorities may not support these projects in the current time.</p>

On the other hand, the administration of Sulaimani had earlier attempted to use Mawlawi Street by pedestrians, but soon found the experiment brought more disadvantages than advantages. This research has shown those important attributes of successful pedestrian malls can be able to bring more advantages to Mawlawi Street, besides of their future probabilities related to weaknesses and threatens which have temporarily and might be overtaken gradually.

4. CONCLUSIONS

In this study, pedestrian mall was examined by using quantitative and qualitative methods survey. The characteristics of public open spaces in the city center play a vital role in attracting people to walk when they attend their daily needs, entertainment and interact with other physical and even non physical feature of built environment. The study has investigated factors which have become more common in most studies conducted previously, but some factors which were considered as effective and invisible at the same time, will act potentially and has been more impressive in enhancing these types of decisions. The following essential conclusions were drawn from the study:

1. From the analysis of the relationship between design and comfortability measurable using ANOVA test, by changing the attitude of people from negative to positive for design due to increase in the mean of comfortability, which was linear relationship. However, from the chi-square tests illustrated that there is no significant relationship between design and comfort of the street, which is the difference between chi square estimated and critical is positive and the significant (P) value is greater than 0.05 level of confidence.
2. It can be seen from analysis data that when people using walking mode cause to increase comfortability then using public buses, which is less comfortable. Therefore, people are more preferring to use pedestrian on this street rather than other transport mode such as private cars.
3. Obviously can be seen that there is a good relationship between activities of the people and comfortability particularly at night, because from data analysis showed that people are not visiting the Street, but if Mawlawi Street open at night and having different activities such as; cafe, restaurant, people are more likely to visit there, people might take rest after work and chatting with friends.
4. It can be seen from SWOT analysis, which shown more positive points that could be combated these problems and be essentially important to create a great design strategy which could support in making Mawlawi Street more vibrant walkable street.
5. Research on pedestrian mall is helpful to engineer traffic and planners also policy makers for better understanding of the pedestrian conditions and provide pedestrian mall. Hence, all the obtained results, concluded decisions, and recommendations will introduce and take under the awareness of city's authorities in order to take place in their near future development programs.

6. This research confound the strong, scientific and more reliable document that supports the decision makers to draw their strategies in transforming the Mawlawi street in current time or near future as well as in transforming the other streets with similar characteristics especially in city centres to pedestrian malls in far future.

REFERENCES

- [1] A. Jacobs, "Greet Streets," MIT Press, London, 1993.
- [2] S. Fouladkhani, "Success and Sustainability Criteria for Streets: The Case of Ismet Inonu Boulevard (Salamis Road), Famagusta" EMU-Doğu Akdeniz Üniversitesi (DAÜ), pp., 11-25, July., 2014.
- [3] J. Jacobs, "The death and life of great American cities," New-York, NY: Vintage, PP., 39 1961.
- [4] K. Bates, "Making Pedestrian malls work: Key elements of successful pedestrian malls in the US and Europe" University of Oregon, PP., 17-19, Jun., 2013.
- [5] C. V. Zegeer, "Planning and designing local pedestrian facilities," Sacramento, CA: Local Government Commission Center for Livable Communities, July, 1997.
- [6] D. Pojani, D. Stead, "Sustainable urban transport in the developing world: beyond megacities," *Sustainability*, vol., 7 (6), pp., 7784-7805, Jun., 2015.
- [7] N. Hussein, "The Pedestrianisation and Its Relation with Enhancing Walkability in Urban Spaces," *Contemporary Urban Affairs*, vol. 2 (1), no. 5, pp., 102-112, Jan, 2018.
- [8] Y. Chen, T. Liu, W. Liu, "Increasing the use of large scale public open spaces. A case study of the North Central Axis square in Shenzhen," *China Habitat International*, pp., 66-67, 2016.
- [9] K. Pradinie, "Who's own the public space?," *Social and Behavioral Sciences*, vol., 227, pp., 693 – 698, Nov., 2016.
- [10] A. Abbasi, "Open space quality in deprived urban areas: user perspective and use pattern," *Social and behavioral science*, no. 6, pp. 194-205, October, 2016.
- [11] M. Francis, "Urban open space – Designing for user needs," Island press NW Washington DC, 2003.
- [12] H. S. Turel, E. M. Yigit, I. Altug, "Evaluation of elderly people's requirements in public open spaces: A case study in Bornova District (Izmir, Turkey)," *Building and Environment*, vol., 42(5), pp., 2035-2045, 2007.
- [13] H. M. Rubenstein, "Pedestrian malls, streetscapes, and urban space," John Wiley & Sons, 1992.
- [14] B. Ergen, "Investigation of streets and pedestrian malls as public spaces," *Istanbul Ticaret Üniversitesi Fen Bilimleri Dergisi*, vol., 12 (23), pp., 1-12, Jun., 2013.
- [15] J. Fruin, "Pedestrian planning and design," Metropolitan Association of Urban Designers and Environmental Planners / North Western University, 1987.
- [16] C. Teller, "Shopping streets versus shopping malls - determinants of agglomeration format attractiveness from the consumers' point of view", *The International Review of Retail, Distribution and Consumer Research*, vol. 18(4), pp., 381-403, 2007.
- [17] D. Prinz, "Städtebau: Städtebauliches Gestalten, Germany, Verlag W. Kohlhammer," 1984.
- [18] M. Alfonzo, "To walk or not to Walk? The Hierarchy of walking needs," *Environment and Behavior*, Vol 37, pp., 808-836, Nov, 2005.
- [19] S. Abley, S. Turner, "Predicting walkability," NZ Transport Agency research report, vol. 452, pp., 114, Mar., 2011.
- [20] F. Kent, A. Schwartz, 2010, online, <https://www.pps.org/article/grplacefeat>
- [21] J. Gehl, "Life between buildings: using public space," Island Press, 2011.
- [22] J. Speck, "Walkable City: How Downtown Can Save America, One Step at a Time," *Documents d'anàlisi geogràfica*, vol., 61(2), pp., 436-437, Nov., 2012.
- [23] J. H. Crawford, "Carfree Cities," Utrecht, Netherlands: International Books, Nov., 2002.
- [24] J. Gehl, "Cities for people," Island press, 2013.
- [25] D. Halden, "10 Years of accessibility planning in the UK- what has been achieved?," In European Transport Conference, /Association for European Transport, 2009.
- [26] C. Alexander, "A pattern language: towns, buildings, construction," Oxford university press, 1977.

- [27] R. J. Gibbs, "Principles of urban retail planning and development," John Wiley & Sons, 2012.
- [28] W. H. Whyte, "City: Rediscovering the center," University of Pennsylvania Press, 2012.
- [29] H. M. Khder, S. M. Mousavi, T. H. Khan, "Impact of Street's Physical Elements on Walkability: a Case of Mawlawi Street in Sulaymaniyah, Iraq," *International Journal of Built Environment and Sustainability*, vol., 3(1), pp., 5-7, Mar., 2016.
- [30] J. W. Creswell, A. C. Klassen, V. L. Plano Clark, K. C. Smith, "Best practices for mixed methods research in the health sciences. Bethesda (Maryland)," *National Institutes of Health*, pp., 541-545, 2013.
- [31] S. AlObeidy, "Examining principles of sustainability in streets Sulaimani city center towards achieving sustainable urban city," *Sulaimani Journals for Engineering Science*, Vol. 6 No. 3, May, 2019.
- [32] K. Clifton, A. Smith, D. Rodriguez, "The development and testing of an audit for the pedestrian environment," *Landscape and Urban Planning* 80, Vol., 1-2, pp., 95-110, 2007.