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RESEARCH ARTICLE

AN EVALUATION OF STREET CHARACTER AS A FACTOR FOR LIVELINESSA CASE FROM ISTANBUL

E. Abu Esleih¹ and Dr. E. Akbalik²

1. Research Scholar, Okan University, Faculty of Art, Design and Architecture, Istanbul / Turkey.
2. Assistant Professor, Doğuş University, Faculty of Art and Design, Istanbul / Turkey.

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Abstract

Streets, being vital elements of public spaces, provide mobility and social contact. Beyond their transportation character, streets are the locations where people may interact with each other, satisfy their needs, and express themselves. These functions contribute to the liveliness of streets and have a significant influence on social life in public spaces. This research examines street characteristics as factors of liveliness that help us to identify the street as a public space. Taking physical features, visual identity, functions, and activities as parameters of street character; the research examines Istanbul's Bagdat Avenue by emphasizing these parameters on the liveliest sections of the avenue. The two-stage organized research outputs have shown that the liveliest sections of the avenue include variety of businesses, individual retailers, segments with a unique identity, and buildings with permeable and articulated facades. It can be asserted that the street's characteristics encourage individuals to behave in a way that enhances publicity and that the street's characteristics help in creating a more attractive place and a lively atmosphere for people to behave in a comfortable way that strengthens the publicity. This research aims to contribute to academic literature to develop a framework for rethinking design and planning for revitalizing urban life and explaining the human aspect of environmental design.

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Introduction:-

In urban design literature, scholars emphasize the importance of meaningful and lively public spaces due to their ability to enhance public life experiences and extend social relationships (Jacobs, 1961; Lynch, 1984; Gehl, 1987; Carr et al., 1992; Tibbalds, 1992). Public spaces have always been important for building a community since they are where different forms of life mingle and build the city. Gehl says that people who gather in public and engage in social activities strengthen links and improve city life (Gehl, 2010). Streets are vital public spaces since they facilitate many activities and contribute to a thriving neighborhood and community. According to Jacobs and Gehl streets should be seen as public social spaces, not just transportation channels (Jacobs, 1961; Gehl, 1987; Jacobs, 1993). This research aims to build a framework for rethinking the design and planning processes of streets and public spaces by focusing on human-space interaction. This may help to understand the dynamics and potentials behind the city's identity, social interaction, the economic and spatial features and characteristics of the street and

Corresponding Author:- E. Abu Esleih

Address:- Research Scholar, Okan University, Faculty of Art, Design and Architecture,
Istanbul / Turkey.

city as a whole. This research addresses the following questions in order to analyze the interaction between people and streets as a public area:

1. Is there a correlation between the characteristics of street design and human behavior?
2. How does each characteristic influence human behavior?
3. How may these characteristics contribute to a greater sense of liveliness?
4. Can liveliness be a measure for a street's definition as a public space?

Following these questions, the hypothesis can be stated as 'If the characteristics of street design are constructed correctly, they will have a favorable effect on people and will serve as markers of liveliness, resulting in the street being declared a public space.'

The research questions are investigated through a case study, ran between May 2021-March2022 at Bagdat Avenue in Istanbul. The case study consisted of two steps and included personal observation and face-to-face and online questionnaire research tools, approximately 57 participants were asked. BagdatCaddesi is in Kadköy province on Istanbul's Anatolian side. BagdatCaddesi is a 14-kilometer avenue that runs parallel to the Marmara Sea. The avenue is popular with upper-middle-class secularists. The 29th October Republic Day marches define the avenue. It's home to business and residential activity and has good public transportation.

Case Study:-

Bagdat Avenue in Istanbul:-

The approach for this study was divided into two steps, step one the street was divided into 4 equal sections, this step focused on all four sections of the street, while step two focused on the liveliest two sections of the street. The first step used two main methods to collect data, head counting and mapping, they were both achieved by in-depth observation of the sections. The findings show section 2 is the liveliest, while sections 1 and 3 are an excellent choice since they have a comparable level of liveliness, finally section 4 has the lowest level of liveliness. That is why sections 2 and 3 were studied in a deeper level in step two; to evaluate and examine the characteristics of the street. During step two, all of the street characteristics were investigated and evaluated; in order to make a comparison between Section 2 and 3 through their level of liveliness.

In this research all of those characteristics were studied and investigated, however this article features the output of some of them, Climate & Physical comfort, Sidewalks, Permeability of Street's fronts, and Variety of Stores & Activities were explained in this article

Section 2 runs from Mucahit Sokak to Omer Pasa Sokak, is lined with shops and boutiques both local and worldwide brands of clothes and accessories, as well as restaurants, cafés, and banks. Additionally, it is tightly packed with businesses; in certain locations, shops are placed on both the main and underground levels. Besides that, there are some construction sites, whether for individual stores or entire buildings. The buildings in this section have classic facades, 5 floors, and are mixed-use, with commercial space on the ground level and residential space on the upper levels, but they are exclusively used for commercial. The existence of a tunnel for crossing the street, which has a number of stores, is another unique feature of section 2 street.



Figure 1:- The plan of section 2 of BagdatCaddesi. Source: Edited by Abu-Eslieh, E., 2022.

Section 3 is from Omer Pasa Sokak to Fenerli Reis Sokak, surrounded with a variety of stores, including independently owned businesses, banks, restaurants, cafés, a hospital, a school, and a park. Another feature worth noting is the Goztepe 60 Yil Park, which serves as a vital focus point for visitors, especially those with children or pets. The majority of the buildings in this section are planned for mixed use with 5 stories.



Figure 1:- The plan of the section 3 of BagdatCaddesi. Source: Edited by Abu-Eslieh, E., 2022.

The case study investigated the relation between streets and liveliness and its characteristics through various indicators such as streets physical features, visual identity, functions and activities. These characteristics were observed in two sections of BagdatCaddesi 2 and 3, which were found the liveliest. The characteristics are:

1. Physical Features:-

- a) Natural Characteristics
 - i) Climate & Physical Comfort
 - ii) Topography
- b) Streetscape
 - i) Street Dimensions and Scales
 - ii) Sidewalks
 - iii) Street's Furniture

2. Visual Identity:-

- a) Permeability of Street's Fronts
- b) Personalization of Stores
- c) Articulation of Street's Fronts
- d) Community Places

3. Functions & Activities:-

- a) Variety of Stores & Activities
- b) Local Businesses

Climate & Physical Comfort:-

Physical comfort is a necessity in lively streets since people will not spend time in uncomfortable places. Handing out questionnaires to individuals to assess the influence of climate on their street experience helped collecting data on how people view the climate and how much they depend on it for activities.

25 % of street users are indifferent about the weather while planning to visit. This may be related to the activities they seek to partake in or the urge to go to the street regardless of the weather, as well as their feeling of comfort while strolling the street, as they consider themselves protected from the weather. %68 of people state that, they change their plans if there are severe weather conditions. This is especially true for elderly who enjoy street walks; they need good weather to avoid accidents. Observations show some elderly people walking under the rain with umbrellas, adults, parents with children prefer outdoor-friendly weather since youngsters are naturally curious and bad weather limits this activity.

If you are planning to go visit the street, do you think bad weather will affect your decision?

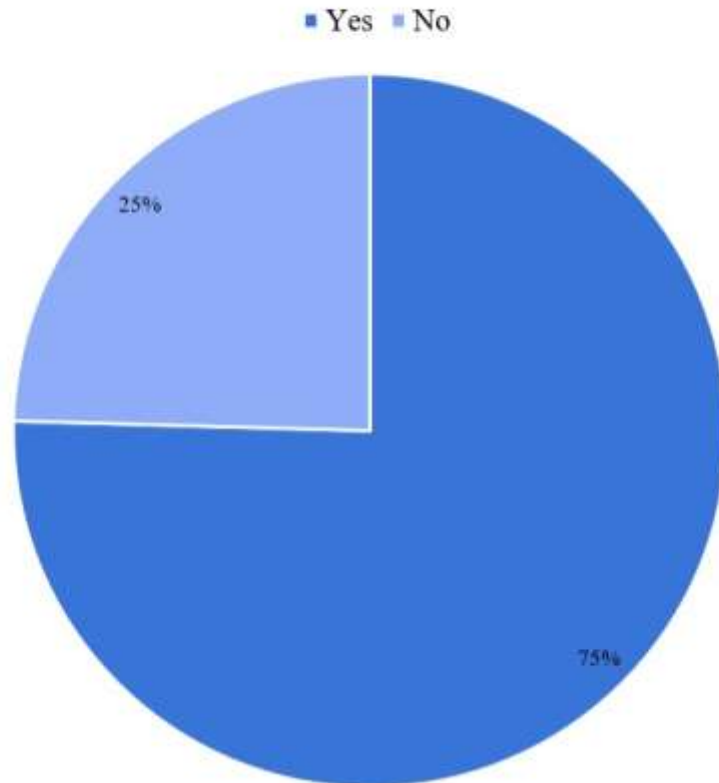


Figure 2:- The percentage of people that the climate impact their decision when visiting Bagdat caddies. Source: A survey, Q: If you are planning to go visit the street, do you think bad weather will affect your decision? N:57 Participants. Source: Abu-Eslieh, E., 2022.

Respondents, who stated that they changed their plans due to weather conditions, were questioned further to learn why they avoided street during bad weather conditions. 21% of respondents said walking in bad weather is inconvenient, while 26% said there's no weather protection. A number of segments in section 2 and 3 lack natural or constructed shade devices, such as trees or canopies; this makes the street uninviting during bad weather. As a natural shade mechanism, trees help decrease the temperature underneath them, offering a nice atmosphere for specific activities. 24% of individuals impacted by weather live far from the street, making it difficult to visit in bad conditions if they depend on public transportation or must walk. 29% of respondents indicated they can't complete their street visit's purpose due to inclement weather. (Check Fig 4).

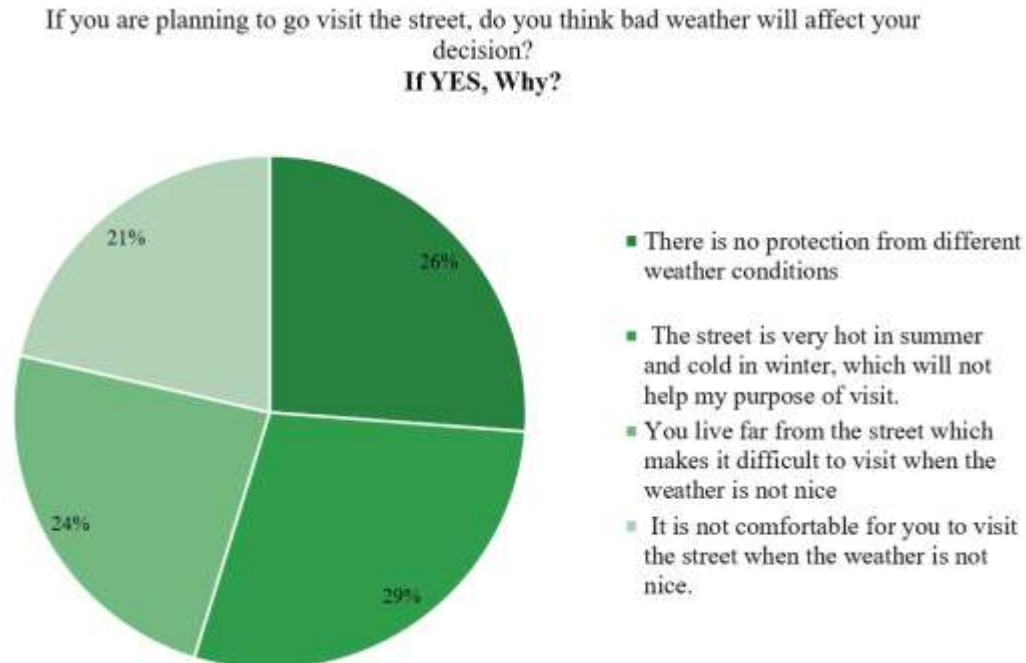


Figure 3:- The reasons why people change their plans in bad weather. Source: A survey, Q: If YES, why? (Follow up question to If you are planning to go visit the street, do you think bad weather will affect your decision?) N:57 Participants. Source: Abu-Eslieh, E., 2022.

Overall, sections 2 and 3 are densely forested and equipped with various devices for sheltering from numerous climate conditions; the presence of some areas that are less comfortable than others are to be expected on a street like BagdatCaddesi; the street is quite long, and there are several locations that can serve as a substitute for those areas in inclement weather. In general, trees assist to cool the street under them, making it more enjoyable for people to participate in any form of activity.

Sidewalks:-

The width of the sidewalks varies in multiple segments of the street due to the varied functions of the businesses in front of the sidewalk, the absence or presence of a parking lot in that segment of the sidewalk, and most importantly, the statuesque nature of the buildings in terms of their locations and scales when designing and constructing the sidewalks. Nonetheless, the width of the sidewalk beside section 2 fluctuates between 6m and 9.60m in most segments, exceeds 9m in several segments, and is less than 6m in just a handful segments.



Figure 4:- Different widths in the sidewalks in section 2 of the street. Source: ©Esraa Abu-Eslieh, 2021.

The sidewalk width in section 3 fluctuates between 4m and 8m, averaging around 6m and reaching 8m in a few spots. However, it is evident more than 8m in front of the park, which is regarded a landmark of the street, and may exceed 11m in that place.



Figure 5:- Different widths in the sidewalks in section 3 of the street. Source: ©Esraa Abu-Eslieh, 2021.

Section 2's sidewalks clearly mark the three activity zones. It shows that the first zone, where buildings entrance and exit, is wider and features sidewalk cafés, signs, and canopies. The width of the sidewalk determines the size of the second zone, the mobility zone. The second zone needs a clear, obstacle-free path to enhance efficiency. The third zone is where people spend most of their time on the street, enjoying and watching city life. It's distinguished

by fixed benches and street furniture. In certain cases, kiosks and small retailers are positioned in this zone, creating a visual barrier and mobility restriction if they extend into the second zone.



Figure 6:- The zones of activity in the sidewalk in section 2. Source: ©Esraa Abu-Eslieh, 2021.

Section 3's three activity zones are obvious in some segments but ambiguous in others. The first zone, where people window shop, is clear and obvious. The second zone provides a wide, barrier-free path for travel. The third zone of activity, stationary activities, where people watch life, is clearly used and achieving its goal. Several segments of Section 3 struggle to establish a clear zone distinction, leaving the sidewalk congested and ambiguous, with people avoiding barriers, standing in the center of the sidewalk for a break or window shopping, and fixed benches situated inappropriately, making them uncomfortable to use.



Figure 7:- The zones of activity in the sidewalk in section 2. Source: ©Esraa Abu-Eslieh, 2021.

People were asked for their evaluation for the mobility on the sidewalks of the two liveliest sections. The evaluation was done using a Likert scale from 1 to 10, 1 being very poor quality while 10 being good quality. Most people consider walkability and sidewalk size to be favorable. Most participants rated the sidewalk's condition as 7, which is neither bad nor excellent; it's serving its purpose. Despite the average rating of 7, most individuals ranked the sidewalks lower. This suggests most people on the street think the sidewalks can be improved. Some people gave the sidewalk a higher rating than the average (7). These people may see the street as an entertaining place where they spend a lot of time, so they do not care about the quality of the sidewalks or the street. They are having fun and engaging in activities, so for them it does not need significant improvement, or they like the statuesque of the sidewalks.

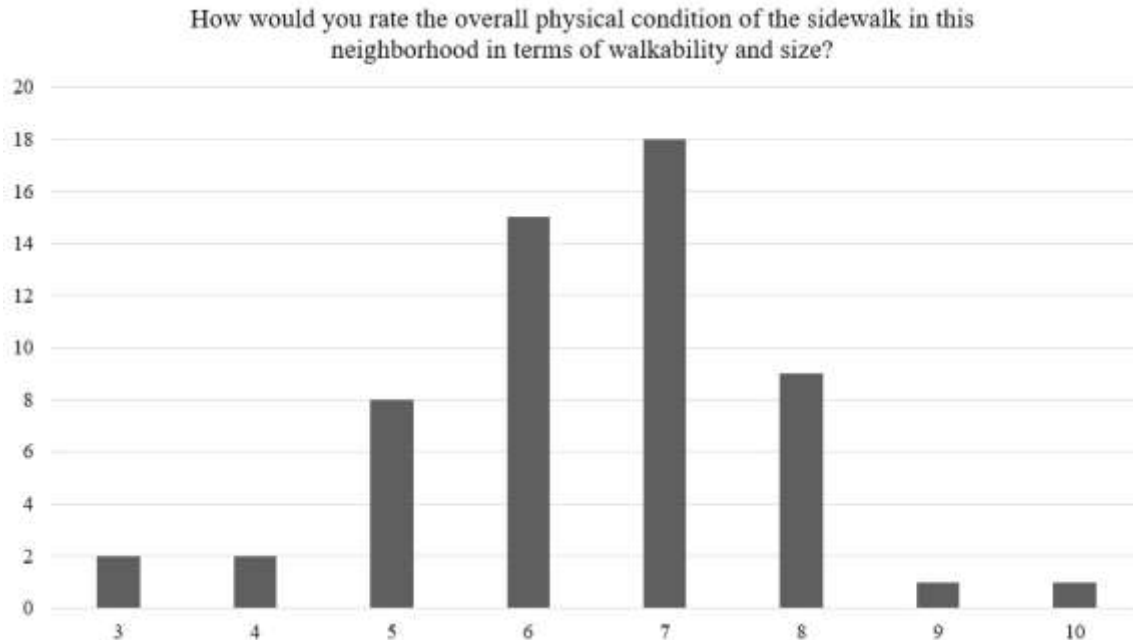


Figure 8:- Participants evaluation for walkability and size of the sidewalks. Source: A survey, Q: How would you rate the overall physical condition of the sidewalk in this neighborhood in terms of walkability and size? (Likert scale 1-10) N:56 Participants.

People and street animals are the primary users of sidewalks. Their experiences and behavior shape the sidewalk; therefore, it must be structured to attract people to spend time and participate in a variety of activities. If it doesn't, people will lose interest and go elsewhere. Section 2's sidewalks are more welcoming than section 3's. Most section 2 sidewalks provide easy moving, sitting, and standing. Some segments of section 3 lack appropriate room for people to stand, sit, or move freely due to barriers that hinder mobility; the width of the sidewalk in section 3 did not contribute to the establishment of these three activity zones.

Permeability of Street's Fronts:-

Permeability refers to the ability of the street fronts of buildings to be visible to pedestrians. As a part of the questionnaire, three photographs have been shown to people on the street and they were asked to choose which street front they preferred. The majority of participants selected figures 2 or 3, whereas 2% picked figure 1. All three figures were from the same section to prevent comparing sections 2 and 3. 49% of people prefer a street with high permeability while walking. On top floors, customers may observe storefront products and shoppers. This permeability attracted individuals and let them engage in activities inside the buildings. People preferred entirely glass facades (3) over less permeable facades, even if they couldn't see inside the building or the products on the street's front. This ensures people's safety and presence. Permeability of upper levels may be perceived as a safe zone since individuals can see what is occurring and there is no uncertainty or risk. 2% of respondents preferred street front facades with little permeability; this may be related to the location, building, or companies within. Some of the street's services, such as a doctor or lawyer, need privacy. Certain buildings need restricted permeability.

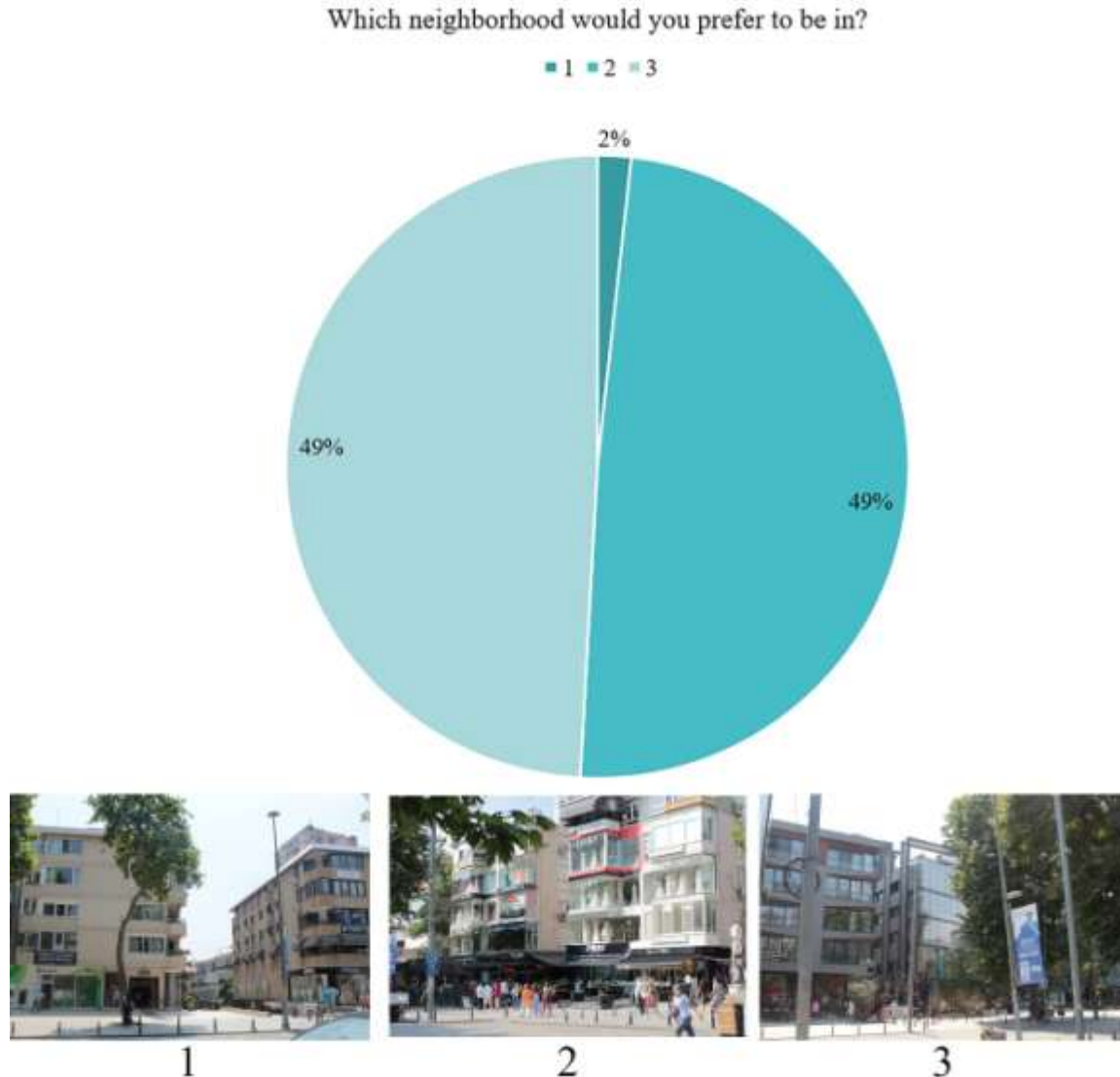


Figure 9:- Participants preference in street's fronts depending on permeability. Source: A survey, Q: Which neighborhood would you prefer to be in? N:57 Participants. ©Esraa Abu-Eslieh, 2021.

In section 2 people sit or stand in front of street facades with a medium solid-to-void ratio. In front of closed/solid facades, street performers created an attraction point. In contrast, fewer individuals engage in activities in front of facades with high solid to void ratio. This behavior depends on a building's architecture and function, modern street fronts with high solid-to-void ratios, new materials, and current design have many activities. People are interested in buildings with international and local brands, they like to purchase there because of the brand. In front of buildings with a low solid-to-void ratio, there was no notable activity. In some areas, activity was strong, while in others it was low. It depends on its surroundings, not the street front.



Figure 10:- The map of the buildings and the mapping plan in section 2. Source: Abu-Eslieh, E., 2022.

In section 3, most activities took place in front of medium solid-to-void ratio facades, people sat, stood, and socialized in front of them. Closed facades featured many people standing alone or in groups and sitting in front of them; commonly, street workers stand or sit in front of such facades. Activities in front of street fronts with a high solid to void ratio differ from those in section 2, where people sit and stand in front of primarily solid façades. This may be related to the buildings' functions, such as a school, park, or government institution; people gather in front of these facilities to rest before completing their paperwork or wait in the street for their children. There was no pattern of activity in front of facades with low solid to void ratios.



Figure 11:- The map of the buildings and the mapping plan in section 3. Source: Abu-Eslieh, E., 2022.

Facades with a medium solid to void ratio have a greater level of activity because they are visually accessible and attractive. These facades aroused people's senses and encouraged window shopping and socializing. Performers used the closed facades as a platform to entertain bystanders. Street fronts with a high solid to void ratio were viewed as an attraction point for people if the building and its function captivated their interest, such as the Marks & Spencer store, where the façade has more closed parts than void, but the design of the building and the brand increased the level of activity in front of it. Finally, street fronts with low solid to void ratio have less activity since can see everything. These buildings are interesting and stand out along the street, but they lack the curiosity that would drive visitors to stay; everything is visible from the outside, and window shopping may provide all the information needed. People like to spend more time exploring buildings with a medium solid-to-void ratio and a sufficient amount of street front permeability, not open all the way, nor closed.

Variety of Stores & Activities:-

Diverse activities and stores attract different people, increasing the street's liveliness. Gehl's classification of stores in a 100-meter-long segment helped categorize street fronts and divide each part into smaller pieces to analyze activity. This established the section's liveliness and compared it to the other sections.

In section 2, the majority of facades are type B-Friendly (44%), with 10-14 doors per 100 m, modest units, a few blind and passive units, and a pleasant façade design with minor ornamentation. This façade supports social life and interesting activities, this section's shops vary in size. C-Mixture (29%) has 6-9 doors per 100 m. It contains a mix of large and small units, blind and passive units, a simple façade, and minimum ornamentation. 18% of section 2's facades are the liveliest type A-Active. This type has 15-20 doors per 100 m, smaller units and many shops, suggesting a broad variety of uses, no or few blind or vacant units, a distinctive façade arrangement, a vertical façade shape, and enhanced focus on details and materials. E-Inactive facades (6%) have 0-2 doors per 100 meters. These facades contain enormous units with few or no openings, no functional distinctions, and a high number of blind and passive units. In section 2, this façade was visible in front of large construction sites and the government building, with one entrance per 100 meters. Type D-Boring (3%) facades have 2-6 doors per 100 m. large units with few doors and windows, limited functional variation, basic facades, and little or no ornamentation. Section 2's facades vary, building sites with inactive facades might add various openings and glass windows to improve the visual connection and create an interesting and pleasant façade. This will transform the façade and enliven up the street. The activity levels rise near type A-Active and type B-Friendly facades; due to their ability to encourage visitors to linger and explore them. Facades shape the scene people see while going down the street, thus they must be engaging to give people something to look at and engage with. When built and planned correctly, facades create a livelier street and a greater connection between people and the activities inside, and the public life of the street and the private life of the building. In front of façade types C-Mixture or D-Boring, activity levels are high in certain segments and low in others. This may be connected to the type of façade across the street; if it is type A-Active or B-Friendly, it will boost activity in type C-Mixture or D-Boring locations; if it is type C-Mixture, D-Boring, or E-Inactive, the chance of a lively façade will be reduced.

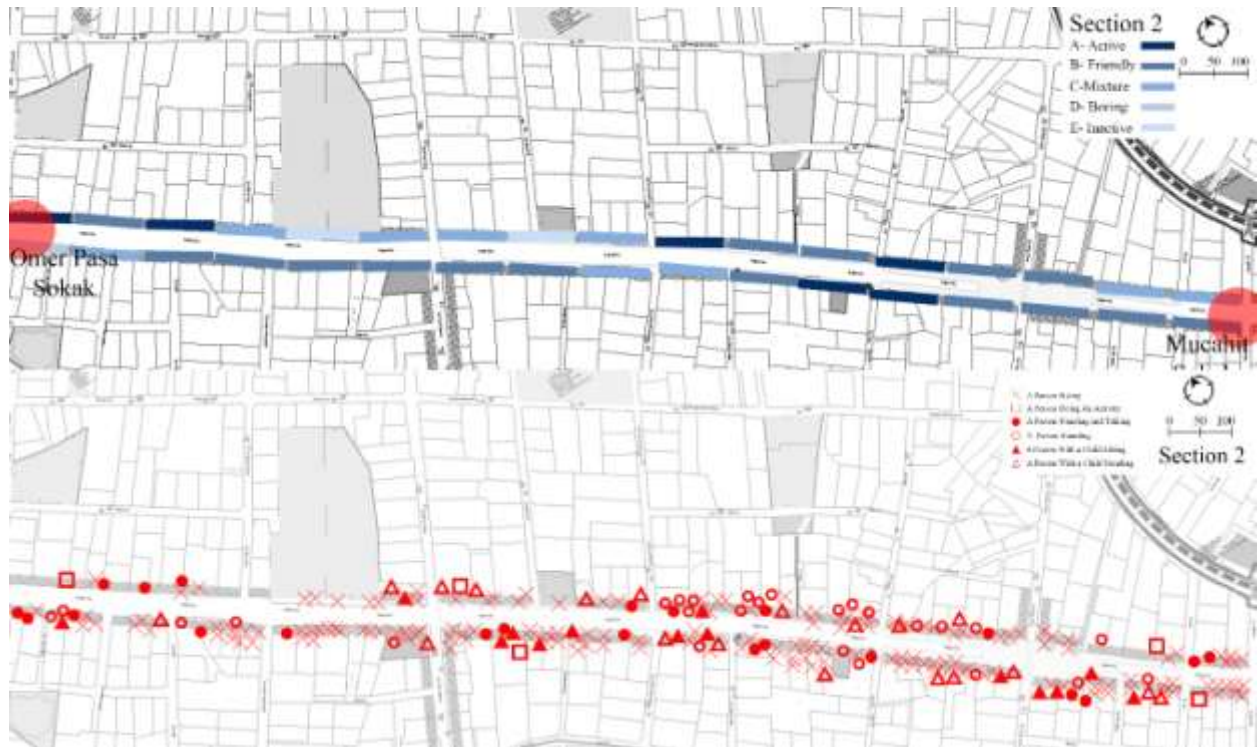


Figure 12:- The map of the facades in and the mapping of the activity in section 2, showing the active segments of the section comparing to the type of the façade. Source: Abu-Eslieh, E., 2022.

Facades type E-Inactive, the level of activities drops significantly because there is nothing to see, people walk quickly past those locations, and they are not impacted by the type of façade across the street from them; in fact, they can influence the level of activities in the facades around them, whether they are across the street or next to them, because the façade is closed from any opening, and it might give the feeling of danger.



Figure 13:- The map of the facades in and the mapping of the activity in section 3, showing the active segments of the section comparing to the type of the façade. Source: Abu-Eslieh, E., 2022.

In section 3, most of the facades are type B-Friendly, around 50% of the total. There is no type A-Active in the area, therefore even in segments with several shops and openings, in some parts the façade is closed. Type C-Mixture (44%) is the second most common façade type in section 3, it includes large and small, open and closed buildings. After that comes type E-Inactive facades 6%, which are in front of the school and governmental institutions. These facades are neither closed nor impermeable, but they are considered inactive because there is no information about what people do in those buildings. In general, the functions of these buildings are known and require privacy to function well. 3% of facades are type D-Boring, which comprises large units with boring facades. The façade in front of the park may look open to street activity, but there are visual obstructions on its walls and trees from the inside that make it difficult to see park activities.

The activity level is highest in front of B-Friendly facades, comparable to section 2. In some locations, even when the façade is friendly and has multiple stores, it does not have a high level of activity; this could be due to its proximity to other less active facades or even close, also the functions in those stores, there are a number of banks and furniture stores in the section, those types of stores do not attract people on a daily basis, leaving the place to have a friendly façade but with a low level of activity. Depending on function and neighboring facades, activities in front of type C-mixture buildings vary. Some sections are busy, while others are quiet. In addition, there is a medium level of activity in front of E-Inactive facades in front of a school and a government institution; due to their functions and the time of day, there is a high level of activity during working hours and a low level before or after. Type D-Boring has a moderate level of activity, which is impacted by more active surrounding facades and building sites that may modify the façade type.

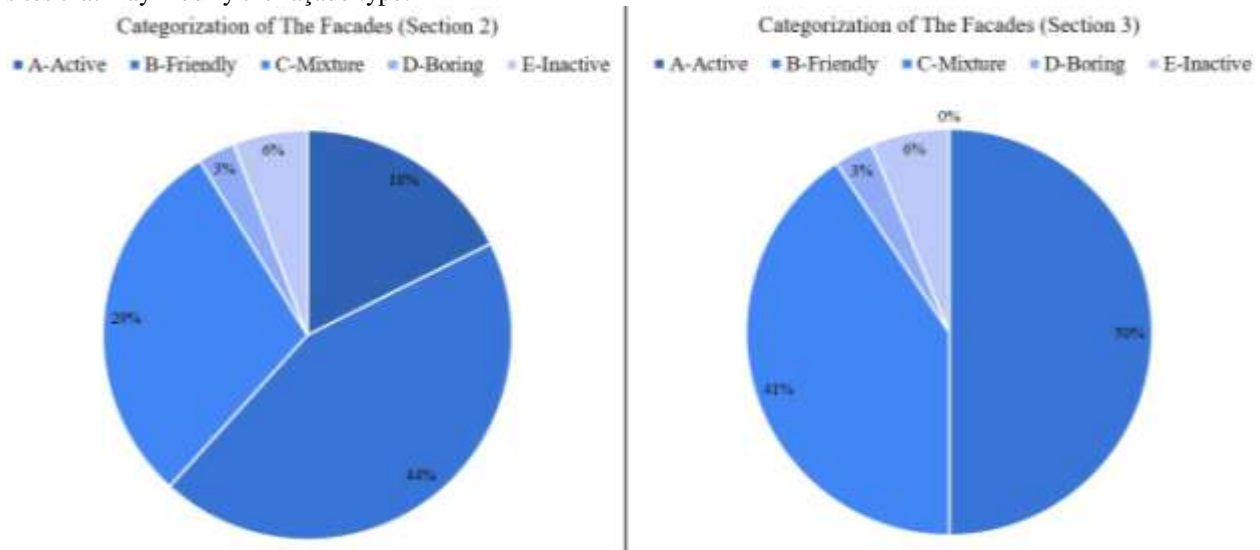


Figure 14:- (Left) The percentage of facades types in section 2. (Right) The percentage of facades types in section 3. Source: Abu-Eslieh, E., 2022.

Conclusion:-

Liveliness indicates that people get engaged and enjoy themselves in public spaces. The characteristics that formed as liveliness factors contribute to the formation of a street where many people enjoy spending time. The street's liveliness is increased by being designed and constructed in a way that encourage people to spend more time in it and helped them perceive it as a public space.

Each of these characteristics may affect liveliness independently and collectively. On the other hand, natural qualities such as climate and topography, as well as the streetscape characteristics such as sidewalks, size, facade articulation, the existence of community places, and the presence of local businesses, have a significant influence on the street's liveliness. Nonetheless, people may still come and enjoy the street despite the presence of these characteristics. These characteristics contribute to the street's liveliness, but they need the presence of other characteristics to obtain the maximum level of liveliness.

The street's characteristics and features if planned thoughtfully and deliberately, can help form the public space where people live and make it lively and active. As well as diminishing the street's capacity for liveliness and vitality, when designed poorly and without understanding its impact.

This research aimed to evaluate the relation between liveliness and spatial/functional characteristics in a street scale. Future studies may focus on the effect of green areas and illumination on a street's liveliness and identity as a public place. Walkability, connectivity, and socializing might also be examined as concepts for public spaces. The ability to designate a street as a public place may contribute to its sustainability and promote an understanding of public spaces as a crucial idea in sustainable urban planning and design, resulting in more sustainable cities and communities.

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