

STREETSCAPE AT JALAN TEMENGGUNG, KOTA BHARU, KELANTAN: EVALUATING ITS EFFECTIVENESS TOWARDS THE WALKING CULTURE

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ABSTRACT

This research concerns the visual perception of alternative approaches and methods in urban environments to transform streetscape, requiring the users' direct involvement in creating a comfortable and satisfying environment for the community. The aim is to embody an excellent walking culture in Bandar Kota Bharu, Kelantan. As the shophouses' income decreases due to the low population coming to the city, new modernised buildings are underway to increase the revenues. It is essential to create awareness and encourage community involvement in the process of preserving Jalan Temenggung's shophouses cultural heritage. The objective of this paper is to evaluate factors that influence the architectural interventions on walking culture in the study area. The advent of walking culture architectural projects was motivated by the lack of walking activity in the area and the deterrent of revenue against the heritage shophouses. The respondents are giving to rate the streetscape according to the efficacy of the current streetscape, which defines physical characteristics and evaluates public expectations about the implications of existing urban streetscape design. Also tends to create good governance in urban planning and design, the finding may be useful for stakeholders, such as shophouses' owners themselves, to conserve and preserve the shophouses' culture and heritage.

Keywords: Waking culture, Streetscape, Shophouse, Jalan Temenggung.

INTRODUCTION

Shophouses have several historically essential characteristics that allow local officials and societies who value heritage to protect and conserve buildings, especially from the pressure of development. Old buildings, particularly shop houses, function as essential components to form a town's identity (Majid and Denan, 2014). Walking culture around the world has influenced a series of improvements or adjustments toward the city's design, the nature of the urban environment, and the ambience's layout. The designed space symbolises the importance of the urban setting and the relation and transformation of the building facade to the city exterior. The development of the current urban structure shall be an essential measure in creating and preserving public interest in the heritage environment. Hence heritage buildings should be registered to protect old buildings for the future generation; preserving heritage buildings is one of the most critical aspects of maintaining a nation's cultural identity (Majid and Denan 2014). Parkinson, Scott, and Redmond (2016) explains the interpretation of architectural heritage conservation principles with the consideration of the cultural context and local community culture for future generations. These would be a significant obstacle for future endeavours. As underlined by Brown, Schebella, and Weber (2014), leaving the inner city poses significant economic growth problems and environmental restoration in related research.

Streetscapes design dramatically affects the user experience in terms of comfort, safety, and sense of placement through various urban settings as a primary condition of urban existence (Harvey 2014). That walking culture has an overall impact on urban development growth; it identifies how necessary to draws street sceneries. Moreover, the lack of knowledge of culture and the new way of life in this modern era are also critical issues in preserving heritage importance (Ismail and Mohd-Ali, 2011). Such indicators are mainly useful in defining the accessibility and convenience of travelling from one location to another. It characterises the overall community layout through variables such as network availability, land use density, and land-use diversity (Harvey, 2014). The isolation of heritage shophouses has resulted in less awareness by locals and society of the interest in heritage. Also, buildings with weak picture characters have not been

preserved and illustrated well by the local authority. Local authority's lack of maintenance and development has created a flawed and unacceptable image of heritage shophouses (Principe et al., 2007).

RESEARCH BACKGROUND

The Concept of walking culture

Walking culture has always linked to the pedestrians; with the participation of different activities, it extends to the urban environment (Abley, 2005). Walking culture is complicated; the implementation of its principle in planning activities has many variations in solution. According to Jeff Speck (2013), the book entitled "Walkable City" reflects on what makes walking culture more real in a community, walkable to pedestrian, and, more importantly, a pedestrian-friendly path. There are several elaborations to make the walking experience more gratifying. There are four criteria in the streetscape to be considered to gratify as a walking community, i) the walkways must protect from all hazards, ii) it is useful to the public as a means of moving from one location to another, iii) it is convenient to use by the pedestrian and iv) it is essential for the pedestrian in terms of values and aesthetics. These qualities need to be coherent, and none of them is feasible by themselves (Harun, Nashar, and Bachok, 2020). Walking culture is the degree to which strolling is promptly important as an accessible, safe, connected, and fulfilling means of transportation (Abley, S. and Agency, 2009; Sukor, Hatta, and Hassan, 2017). Jacob (1993) describes the characteristics of walkable streets opposing that it should be leisure for street users, priority given to pedestrian comfort. The street is not only a way to go places but also has meaning to its purpose. It should engage from one user to another, and finally, it should complement each of the elements. Walking may be a way of travelling if the area's norm is walking conditions, safety, convenience, and comfort (Litman and Blair, 2006). Some factors encourage the pedestrian to become connected to a walking culture.

Defining Streetscape

The term 'streetscape' stands for combining the word 'street' and 'scape', meaning the streets' view or scenery. It emphasised as an urban image that incorporates unique features that define the scope of a local urban environment to establish the streets' distinctive character (Rehan, 2014). A street characterised by the entire composition of street elements designed for transformative, social, economic, and commercial purposes is based on the streets to serve the pedestrian users. Streetscape design had unique characteristics based on the street's layout, the function, and forms of walking culture. The streets are sufficiently suitable for public walking and meeting places where social activity can regularly promote outdoor activities.

Sustainable streetscape

Streetscape scenery of the hard and soft elements is essential to creating a pleasant journey that affects the street's environment and the pedestrian view of the street, where all the components depend on it. Rehan (2013) views that the streetscape as a street scene consists of visual street elements consisting of plantations, sidewalks, street furniture, and street character that blend the entire street environment's understanding. Southworth (2005) stated that pedestrian condition quality is why people tend to walk over cars. These qualities on six connectivity criteria on interconnection with other modes, patterns of land use, the walkway's safety, path quality, and meaning of route. The sense of path background refers to elements of the streetscape that created the culture of walking. Clarity or legibility is a trademark by which residents and visitors understand a city or community effectively and allow them to travel around the neighbourhood with ease (Rehan 2013). Numerous needs and the consideration of proposals need to included supportable urban design for pedestrian and walkways—sustainable streetscape standards two significant indices, the values of the environment and social values. Urban concepts include

legibility, convenience, protection, and aesthetics, while civic values include vivacity concepts. Comfort and wellbeing should be useful for any street scenery. It means it must be responsive to both mechanised and non-mechanised requirements of each of its users.

Nevertheless, it must be built and decorated for everyone's protection and comfort, people on foot, drivers of motor vehicles, passageways, and visitors (Rehan 2014). The entire streetscape element should be elegantly appealing, enhancing the design aesthetic of each city and community across the globe while creating sustainability that will last. It will not achieve without the most effective Sustainable Streetscape architecture approach being introduced (Rehan 2014).

Streetscape Planning for Walking Culture Index Theoretical Framework

This research has considered Campbell Street, Jonker Street, and Orchard Street as case studies that can demonstrate how to benefit from the surrounding cityscape. These case studies justify how relevant the walking culture in the tourism and retail sector is. Both occurred because all the appropriate steps were taken by the town manager to promote easy access for pedestrians. In general, if Bandar Kota Bharu's planning authority can duplicate this initiative or idea on the streetscape of Jalan Temenggung, it will certainly draw more people to the city, which will also boost the street's economic status, and can transform to a tourist centre that can also refer to the future as a good streetscape benchmark for the neighbourhood surrounding It is evident from the literature that suitable walking trails are important for people who walk for transport and leisure purposes. In the individual's interest, there are several advantages when a community can enjoy the walking culture. There are many benefits to the walking culture in this case studies, such as fitness, economic and environmental benefits.

Walking culture can be highly functional only through good street design, and elements of street scenery play an enormous role in inspiring people to choose walking in Jalan Temenggung as a means of transport. A pedestrian walking opportunity can be improved by street furnishings, landscape strips and well-connected open walkways. Whether they are wheelchair users with visual impairments or a fully functioning and stable person. It is also evident that, as with the proper positioning of street furniture and landscape strips, the positioning and division of spaces within the walkways is important to ensure pedestrians' comfort and safety. With suitable walkways, walking culture restrictions for pedestrians are decreasing, as walking becomes much easier throughout the centre of the cities. Three case studies, Penang, Melaka, and Singapore have been studied and those case studies have large walkable communities compared to Jalan Temenggung, which can be great benchmarks for using street quality in Jalan Temenggung. Fig. 1 presents the theoretical framework summarizing the study on walking culture index that considers walkability factors and streetscape elements relating to the pedestrian preference.

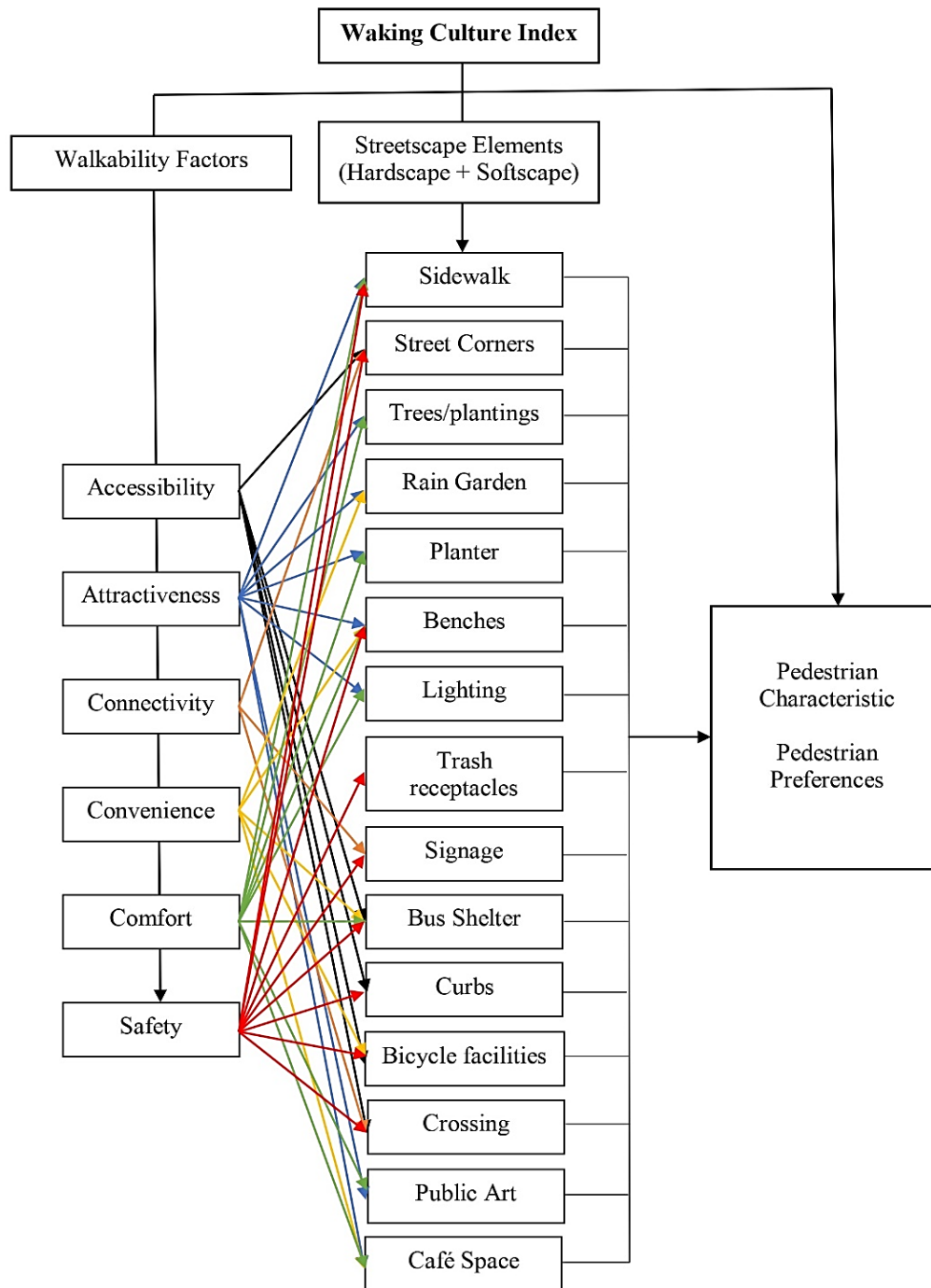


Fig. 1 Streetscape Planning for Walking Culture Index Theoretical Framework

METHODOLOGY

The study utilized both qualitative and quantitative approach as its research strategy. The qualitative part consisted of extensive literature review on indices proposed by relevant prior research as well as case studies of similar contexts. The aim was to formulate a theoretical framework for walking culture index to be applied into this study. The quantitative part was conducted using questionnaire survey as the inquiry strategy for primary data collection. The aim was to collect empirical data on from selected respondents within the users of Jalan Temenggung. The survey was conducted online using Google analytics considering the nationwide movement restriction during the period of the research. In the selection and expectations of data collection respondents, a convenience sampling technique was considered. For over a period of one month, 86 complete responses were collected successfully.

The questionnaire capture pedestrian perceptions of streetscape elements of the street setting. Since pedestrians are street users, the respondents selected were the ones that used the streets in the research area for this analysis. In addition to identifying the user's preference, the survey aimed to identify design measures to meet pedestrian activities' needs for every aspect of the streetscape. The survey is to be circulated along Jalan Temenggung, Kota Bharu. Specifically, the users of the streetscape around the city will be asked to fill out a questionnaire to those who regularly use the walkway in Jalan Temenggung. The questionnaire will focus on issues relating to individual experiences. The rest would primarily focus on having an idea of how the attitudes and public perception of pedestrian walking will be. In both groups, the type of questionnaire and the example of questions to be answered are different. The questionnaire needs to have different variables of query about the streetscape to build more interpretation of the results in this research. A description outlining the research will be included in the questionnaire so that the prospective participants will fully understand the study and the questions raised. The questionnaire will focus on the questions concerning individual characteristics. The rest of the questionnaire will concentrate primarily on gaining an understanding of the definition of streetscape design to improve the walking culture by affecting pedestrians' comfort, safety, connectivity, and accessibility.

The inventory is divided in two parts of the question based on the results' intent; all parts of the examination were organised based on the literature's methodology to test the streetscape. Each section has a different focus, divided by the topic discussed in this study segment. The first section on the profiles of the questionnaire begins primarily with the respondent's background and purpose. It is about detecting and spreading patterns in pedestrian trends. In contrast, the second portion divides into two subject groups. The first segment concerns user-favourite walking events and features of the streetscape. Next, it examines the culture, safety, accessibility, and comfort of the pedestrian. Average scores calculate, and weights allocate to the elements of the streetscape. Concerning measures for streetscape elements, the respondents asked whether the criteria listed for each object are essential in influencing their walking activities. Each criterion of the streetscape was established based on a literature review.

RESULTS

Since this study focuses on developing the respondent's socio-demographic profile based on a questionnaire given to the respondents for user expectations in greater detail, the inventory distributed using a convenient sampling method only refers to a user connected to the location exploit the following walkway. 86 samples from the questionnaire have been collected for these findings. The respondents' largest age group is 21 years of age, with 20 respondents, followed by the 25-year-old age group with nine respondents. The data indicates that most minority adult age group have participated in the survey questionnaire that offers a range of user feedback and recommendations of Jalan Temenggung. It means that most of the respondents who used or visited the walkway were young people aged 21 to 25. It is helpful for the group because they find it easier to respond to the use of technology. However, the group that more likely to use the street than older adults. It can be analysed from the questionnaire that, out of 86 respondents, 69 are local respondents, representing 80.2%, and 17 are visitors, representing 19.8%. Within the questionnaire's restriction, the result indicates that the respondent's profile for the shophouse could not determine due to the pandemic situation and the distribution platform process.

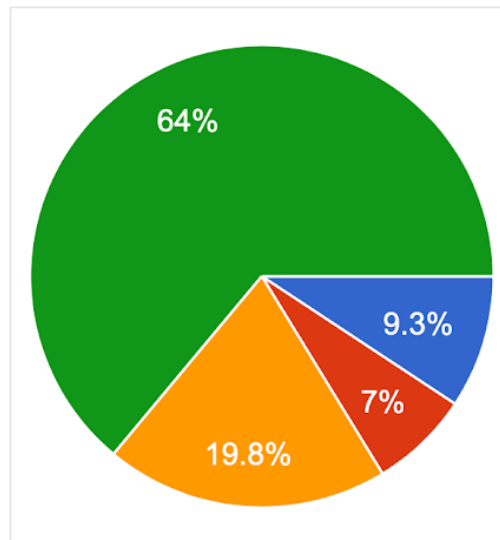


Fig. 2 Respondents frequency of visiting

Fig. 1 above provides details on the frequency of walking around Jalan Temenggung for respondents. Out of the 86 respondents, 55 respondents representing 64%, said they occasionally visited Jalan Temenggung, followed by 17 respondents representing 19.8% who said between 1 and 3 times a week. While six respondents representing 7%, said between 4 and 6 times a week, and eight respondents representing 9.3% said daily. It means that most 64% of respondents rarely utilised the street in a week, and only 9.3% of respondents use the walkway. Some of the respondents say that they are moving down this street because they have to go through Jalan Temenggung when they go home from their various workplaces.

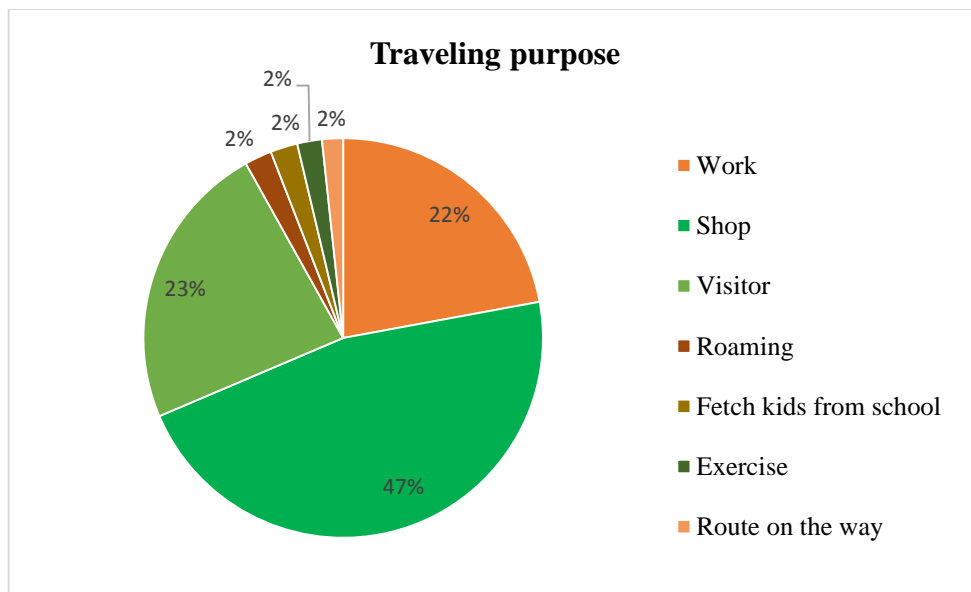


Fig. 3 Respondents purpose for visiting

Fig. 2 shows details on the purpose of Jalan Temenggung's travel by the respondents. Forty respondents, representing 46.5%, said that they travelled the streets for going to the store, accompanied by 20 respondents, representing 23.3% of whom said they travelled the streets for visiting the markets. In contrast, 19 represented 22.1 % for work purposes, and 7 representing 9.6 % of respondents were for other reasons. It means that most respondents in the study area, with 46.5%, walked the streets for shopping purposes. Each of the responses subjectively inputs an answer as a leisure walk, road to pick up kids from school, and jogging.

Table 3 Respondent's views on essential elements of the streetscape that support walking culture.

Elements of Streetscape	Number of Respondents	%
Sidewalk		
Good sidewalk condition	58	67.4 %
Wide and spacious pedestrian sidewalk	55	54 %
Clear and direct pedestrian sidewalk	36	41.9 %
Crosswalk		
Relevant location of the crosswalk	52	60.5 %
Properly connected crosswalk	49	57 %
Visible Crosswalk	46	53.3 %
Lighting		
The function of the streetlights	59	68.6 %
Sufficient streetlights	49	57 %
A suitable location for the streetlights	40	46.5 %
Signage		
Informative of the signage	52	60.5 %
Relevant signage position	49	57 %
Readable of signage	48	55.8 %
Tree and Planting		
A row of shading trees	68	79.1 %
Attractive Flower and Trees	47	54.7 %
Fragrance plant	15	17.4 %
Benches		
Appropriate location of benches	72	83.7%
Comfortable benches	49	57 %
Privacy of benches	16	18.6 %
Bicycle lane		
Availability of bicycle lane	55	64.7 %
Condition of the bicycle lane	47	55.3 %
Width of the bicycle lane	32	37.6 %

Table 1 presents the outcome of the respondent's view on the streetscape elements that help the culture of walking. The following are the established components:

Sidewalk

It is the most preferred design elements required for the streets. There are 58 respondents, with 67.4% considering that the condition is more critical than other sidewalk elements; the street inventory findings indicated that the streets were inconsistent in terms of the sidewalk condition. Therefore, it stated that the sidewalk maintenance inside the streets was not adequately maintained and standardised. The sidewalk width was 64%, with a value of 55 respondents, making it the second-highest category for essential elements of the sidewalk, followed by a clear and direct pedestrian walkway. The findings showed that its conditions and the need for a broad sidewalk were among pedestrians' main sidewalk problems. The width of the sidewalk on the streets allocate as a pedestrian space. Hence, if having issues with the street's condition affects the wide sidewalk that offers too little space, it will restrict pedestrians' movement, affect their sense of comfort, and cause conflict to their movement.

Crosswalk

It is the third preferred streetscape element, with 41 respondents representing 47.7%, based on the Fig.'s findings. During the inventory, some motorised vehicles did not give pedestrians priority when they crossed the street. In contrast, there was no marking provided for the pedestrian to cross the road. Pedestrians, therefore, must spend their time waiting for vehicles to pass through during the crossing. The presence of crosswalks is very critical for ensuring the protection of pedestrians from traffic. Illustrated in the observation of pedestrians walked along the street. Only 9.3% crosswalk position was the most relevant criterion, with 52 respondents representing 60.5% and 46 respondents representing 53.3% of crosswalk visibility. Visibility of crosswalks is the key to pedestrian safety, particularly during the night. It intends to enhance pedestrian safety during night time crossing activities.

Street lighting

The design measures were listed to influence pedestrian safety from the most important to the least significant accordingly. Based on the inventory, street lighting was the only form of lighting available to encourage pedestrian movement. Nevertheless, not all street lighting is in good condition. Table 1 indicates that the lighting function and condition were the significant steps taken by 59 respondents with 68.6%, followed by adequate street lighting, with 49 respondents representing 57%. These results indicated that lighting location is the least important feature of elements of the pedestrian streetscape. This result is supported by site inventory data, suggesting that most of the Jalan Temenggung are absent from lighting. Thus, their sense of protection against the street environment diminishes at Jalan Temenggung.

Signage

It attributed to targeting respondents who were local in the area; the respondents were, therefore, familiar with the layout of the streets and the building site. If the respondent was among tourist users, the findings could appear vice versa. Between the three measures mentioned, the most important criteria were informative signage with respondents of 52 equivalent to 60.5%, followed by the corresponding position of the signage with respondents of 49 equivalent to 57%. It was discovered during the inventory that most signages were available for pedestrian references. However, the signage provided was not functional and displayed at its intended location due to unsupervised planning.

Planting

Design steps included finding out the most relevant planning requirements the respondent wanted to improve the walking activities. Table 1 above demonstrates the planting steps' effects to be addressed later as part of the walkable city design recommendation. The survey questionnaire included three planting steps in determining the most significant measures that would affect

pedestrian walking. Firstly, trees that offer shades with a response of 68, representing 79.1%, would prefer a tree shade to walk comfortably. Accompanied by an attractive flower and trees with a response of 47, representing 54.7%, Followed by trees providing ascent, 15 respondents accounted for 17.4% of the steps that would impact the pedestrian's comfort. The findings showed similar results to those of the inventory that shade was the most significant factor relative to aesthetics. Indeed, this result seems to be relevant to the effect that shade is the most appropriate criterion for planting, rather than an aesthetic quality for the walkable street area, particularly in tropical climates. The planting with shady characters protects the pedestrian against adverse weather, increasing their stability and comfort when walking. In the meantime, suggested that other vibrant flowers, fragrance plants, and enticing views improve their street walking experience. Also, the existence of an attractive quality plantation added value to their experience.

Benches

These are another factor that could help boost the pedestrian's walkability in the area. The respondents possibly favoured the benches to the signage because of their functions to emphasise pedestrian comfort by identifying the gaps between the sidewalks and the cars' streets. Based on the findings in Table 1, 72 respondents on 83.7% preferred the appropriate location of benches, while some would consider the comfort of the benches with 49 respondents on 57%. Some would prefer a comfortable material for the benches, followed by 16 respondents on 18.6% on having privacy benches. The pedestrian should also be aware of every waiting area on the sidewalk, the pedestrian activities that take place during the night.

Bicycle lanes

One of the components of streetscape which are not available to exist streetscape elements. Some pedestrians preferred bike lanes to do their outdoor cycling activities. Such data results from site inventory indicate there were other pedestrian behaviours on the street besides walking. Table 1 above shows that the 55 representing 64.7% respondent preferred the availability of the bicycle lane. Besides, some 47-responder representing 55.3%, would prefer a better bicycle lane condition, while 32 respondents would prefer a sustainable width of the bicycle lane. It supports that the pedestrian would likely prefer a bicycle lane in addition to activities of jogging and cycling. Nevertheless, inadequate facilities had been available to support such sports as jogging and cycling. Therefore, on some occasions, joggers and cyclists use the road design to accommodate the vehicle, which can be very dangerous for the pedestrian user. There is a dispute between the car and the pedestrian user, and walking activities would be discouraged.

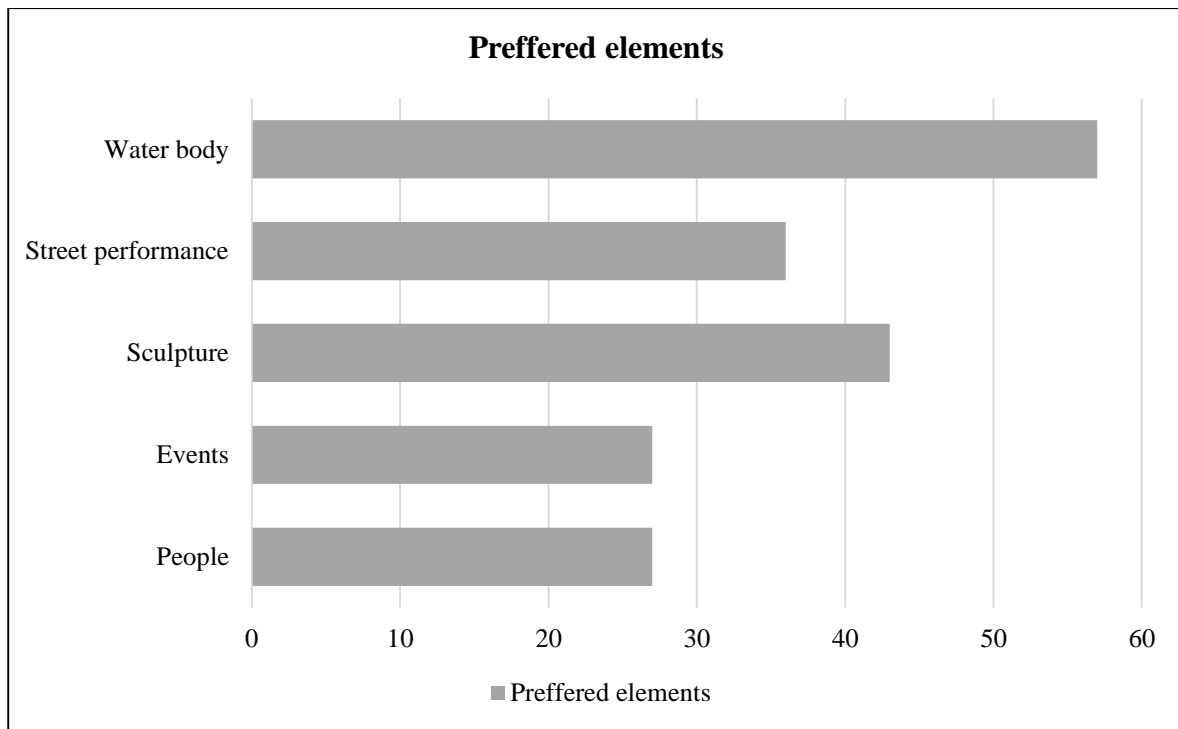


Fig. 4 Respondent preference on the element that attracts pedestrian to the streetscape

Fig. 4 show the chart of response from the pedestrian on the preferred element which attracts to use the streetscape, based on the Fig. the elements that attract the most pedestrian are the elements of water with the response of 57 representing 66.3%, followed by a 43 respondent on having a beautiful sculpture for attraction. There are different survey recommendations, where 36 respondents would prefer a performance on the streets for an attraction. Lastly, 27 respondents indicate that the elements that attract the pedestrian to the streets are the people and the streets' events. Supported by the observation of the site inventory, it can conclude that most of the respondents would prefer a water element as an attraction of the streetscape due to Malaysia's hot and humid climate.

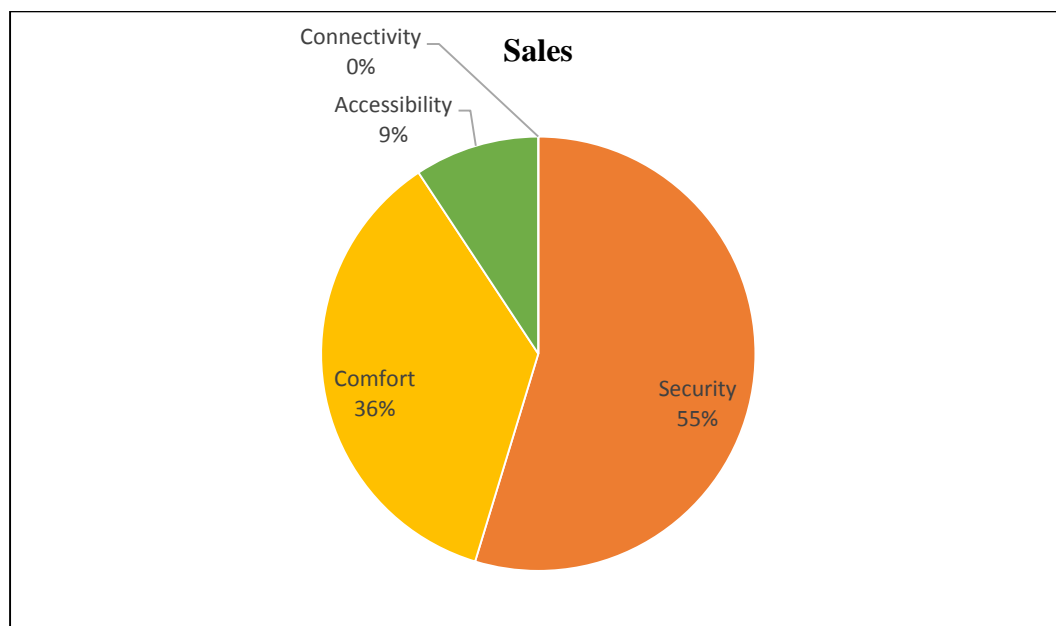


Fig. 5 Users' preference for streetscape factors

Fig. 5 above analysis of factor was determined to understand the study's first and second objectives. The first objective was to investigate the user's perception towards the condition of the existing streetscape, and the second objective to evaluate the preferences application on sustainable streetscape towards increasing the walking culture. As most walkability studies in Malaysia were scarce in the region, the survey instrument was built and established based on document analyses from previous studies. By collecting specific knowledge on similar topics, adjusting to the Malaysian cities' streets' environment and context. The related analysis of pedestrian's movement toward walking culture in the urban environment covers numerous fields of study, including comfort, safety, accessibility, and connectivity (Litman and Blair 2006; Rehan 2013; Southworth 2005).

RECOMMENDATION

Recommendations for improving the Jalan Temenggung walkways, as defined in the literature, the scholars' discussions concluded that it is vital to need adequate elements of the streetscape as it enhances the person's user experience. The cultural experience needs to preserve the heritage value of the streets, particularly the shophouse. It is necessary to divide the space inside the walkway, as outlined and to provide adequate space for any activity along the walkway. For example, the pedestrian lane should contain most of the street landscape elements, such as street furniture and landscaping that may also serve as a buffer zone for pedestrian users. Different pedestrian lanes are for pedestrian mobility. The space given is for pedestrians to walk in different areas and avoid conflicts between individuals and other people protruding from the roads. Zone for shop house owners, privately for product display, and table and chairs for café or other shops comparatively. Therefore, allocating the walkways' dimensions to different areas is significant. It positively affects the walkways' appearance and their availability and improves the user experience of the entire community by reducing the street landscape factor to safety, comfort, accessibility, and connectivity. As proposed by the recommendations for the spatial division of the Jalan Temenggung walkways, the streetscape components' detailed recommendation will cover each of the components, the softscape, and the hardscape.

To keep active and enjoyable long walks at Jalan Temenggung, Majlis Perbandaran Kota Bharu (MPKB) should recognise the street entertainment such as cultural activity, busking, and other humorous arts heritage, and designate an area between the shophouse or along the walkway. Those events along the street's walkway are the spot where the pedestrian is socially active, and so, it can be considering an area for walking culture. The positive impact of various street performances on walking culture in Jalan Temenggung will be visualised and enhance social activity in the streets. From the respondent's suggestion to the recommendation of streetscape components, commercial streets have the best walkability variables provided by the statistical analysis. The local authority MPKB may consider implementing to consider the conversion of the street into a well-known commercial street at Jalan Temenggung Street to increase the walking culture. It benefits from preserving the heritage and culture of Jalan Temenggung.

CONCLUSION

To conclude, the findings highlight the value of enhancing Jalan Temenggung's walking culture through street design elements and in part of its safety and comfort. The research's objective is to examine the user's understanding of the state of the current streetscape element, which clarifies that the physical characteristics of the walkways played a significant role in achieving walkable streets and facilitating comparisons between street walks and walkable streets. A good walkway has the right elements of the street landscape and for deciding the best use of sustainable streetscape to improve the walking tradition, and it allows individuals to choose walking as their mode of transportation. The streetscape elements and the walkability component of the Jalan Temenggung walkways need intensive enhancement based on the satisfaction user's report findings. It enhances the user experience utilising the walkways. These new amendments and the

newly introduced walkways recommendation and design elements in the streets can set a benchmark for future walkways of commercial cultural and heritage development at Jalan Temenggung. The most significant factor characterising shophouses is the connection of the town with tradition. A crucial finding that needs to reinforce these amendments is that the pedestrian user in Jalan Temenggung appreciates and understands the intangible elements that need to represent an excellent walking culture of the past of the city, the most significant element in town.

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