



CONFERENCE PROCEEDING

ICITSBE 2012

**1ST INTERNATIONAL CONFERENCE ON INNOVATION
AND TECHNOLOGY FOR
SUSTAINABLE BUILT ENVIRONMENT**

16 -17 April 2012



Organized by:
Office of Research and Industrial
Community And Alumni Networking
Universiti Teknologi MARA (Perak) Malaysia
www.perak.uitm.edu.my

PAPER CODE: UP 06

PEOPLES' CHOICES AND BEHAVIOUR IN URBAN STREETS

Norhafizah Abdul Rahman¹, Shuhana Shamsuddin² and Tim Heath³

¹ Universiti Teknologi MARA (Perak), Malaysia
norha776@perak.uitm.edu.my

² Razak School of UTM in Engineering and Advanced Technology, Universiti Teknologi Malaysia,
shuhana@ic.utm.my

³ School of Built Environment, University of Nottingham UK.
tim.heath@nottingham.ac.uk

Abstract

The street is a vital part of the public space in urban areas that cater for users' functional, social and leisure needs. Currently, in Malaysia there has been a growing concern towards promoting streets that are friendly to all users. This is because there are not many examples of street environments that are friendly and accommodating to the users. Based on previous research, people are more ready to walk than today in the case of improved public spaces. In order to ensure the successful design of urban street, the understanding of street's characteristics and qualities and users' activities on the street are important. The research examines the concept of 'user-friendly street' in the context of Malaysian town centre. The primary concern of the research is to study the needs of the users that contribute to the use of streets and their livability in the urban areas of Malaysia. There are two complementary research methods used in this research, namely field study and survey. A single case study was applied in this study. The case study chosen is one of the main shopping streets in Kuala Lumpur and is selected based on the physical, functional and socio cultural characteristics of the street. The inventory of the case study is based on field observations of activities using schedule checklists, photographs and maps procedures. In this research, users' perceptions element was obtained through a sample survey of daily users, occasional users and non-users. The research has found that there are variations in the users' perception towards the factors and attributes that contribute to user-friendly street between different types of users and socio backgrounds. The streets were not only used by the users based on physical and functional qualities but also based on the meaning. It is expected that the findings will improve our understanding of what we consider to be the public realm in terms of the physical characteristics and qualities that support the user's friendly built environments. This will help the designers, urban planners and policy makers to understand the needs and attitudes of users towards the concept of a user-friendly street in Malaysia.

Keywords: Peoples' choices and behavior, urban street, Malaysian context.

1. Introduction

The 'user-friendliness' of the street is an important factor in bringing people on to the street. Based on previous research, it was proved that people are prepared to use and walk more if the street environments are friendly to the people who used the street. Streets are a vital part of the public space in urban areas that cater for users' functional, social and leisure needs. Currently, in Malaysia there has been a growing concern towards promoting streets that are friendly to all the users. There is also not many examples of street environments that are friendly and accommodating to the users. Based on previous research, people are more ready to walk than today in the case of where there are improvements being done on the public space. In order to ensure the successful design of urban street, the understanding of street characteristics and qualities and users' activities on street is important.

2. Literature Review

2.1 Basic Human needs

In this research, the understanding of the human dimension, their uses and activities, their needs and preferences, how they interact and what makes them use the street are essential to identify what a user-friendly

street is to the users. Nowadays, spaces are frequently designed to support the interest of corporate clients, and they do not contribute much to the vitality of public usage. Therefore, there is a general tendency that with the fast pace of development in Kuala Lumpur, there is a danger that the city will end up having privatized islands of public open spaces including streets which eventually do not provide support to the various user groups (Mijan, 2000). Tang et al (2009) argued that the understanding of the principles of a successful and user-friendly environment at the early stage of the project in an urban area is important. As Gehl (2004) added that, by creating good pedestrian environment, it will provide a well functioning public domain; invite more people to walk, stay longer and offering variety of attractive public activities. This will enhance people to socialize more in public spaces.

2.2 Needs in street/ urban space

The actual needs and preferences of the urban users are the most important quality and should be given more attention in order to re-evaluate the quality and design of the space over time and to create a successful urban space (Jansson et al, 2010). In order to have an effective design and management of public spaces it is important to understand the role that those places play in people's lives and why spaces are used or ignored; why some work for people, and some do not (Whyte, 1980; Carr et al., 1992). These relate to the users' needs in urban spaces. Great urban places are the places that can support and facilitate activities; and how the design of urban spaces accommodates the user in the space. This is supported by Jansson et al (2010) in that needs and preferences can be expected to depend on the physical and social context. In the past two decades, there has been a great deal of research in western countries on human perceptions and activities in open space areas (Forsyth, 2003). However, in Malaysia, this kind of study, especially related to how people use urban spaces, is still lacking.

Carr et al. (1992) identified five primary needs that people seek to satisfy in public space: comfort, relaxation, passive engagement with the environment, active engagement with the environment, and discovery. The current needs of users are important to identify so that the planning and design of urban places is based on the current needs of users. Sulaiman (2000), in his research, argued that public perception of environmental design and public participation in design and its contributions to the design process in the context of Malaysian practice are important. This has implications on the approach that designers use in their design process and will have a significant contribution to the methods adopted by the designers in the design approach. Comfort is a basic need of people in urban spaces as; it is one of the indicators of successful public spaces. According to (Carmona et al., 2003), the length of time that people spend in a public space depends on the function and the indicators of its comfort. Hence, without comfort it is difficult to perceive how other needs can be met (Carr et al., 1992). Another primary need in public space is relaxation. According to Carr et al. (1992) "*Relaxation is distinguished from comfort by the level of release it describes*". It is a more developed state with body and mind at ease. Passive engagement is another need in public space. According to Woolley (2003), passive engagement includes activities like watching other people, looking at views, reading, and resting or meeting friends. Passive engagement with the environment could lead to a sense of relaxation (Carr et al, 1992). Unlike passive engagement, active engagement involves a more direct experience with the place and also people in the space (Carmona et al., 2003, Carr et al., 1992). Discovery, according to Lynch (1963), is the reason for people's presence in public spaces and represents the desire for stimulation. Carmona et al. (2003) suggested that discovering involves a break of the normal and routine, it may require a 'sense of surprise' in the space. Lynch (1963) suggested that contrast and juxtaposition of elements can provide a sense of surprise that people like and enjoy. People like to move around the space and discover parts of the place. Cullen (1961) added that the experience of discovery also contains a sense of mystery. The need for discovery is met by travelling, going to new places to discover their special qualities, to meet new people, and to find new challenges from the landscape that contrast from the familiar ones (Carr et al., 1992).

However, most of the needs in urban spaces identified in this literature review are mostly to suit the users in the different contexts of place, climate and culture. There is a lack of studies of theories of peoples' needs in urban spaces generally, and streets, specifically, by scholars in a similar context to Malaysia. Hence, most of the studies that relate to people's preferences and needs are mostly not specific to streets, especially a commercial street. The needs discussed in the literature generally concern the needs of users in urban spaces elsewhere and not specifically in streets. The needs of users in Malaysian streets might be different from the needs of other urban spaces in other places.

2.3 Human activities and behaviour in the street

The needs of the users in the street depend on their activities in the street. Tang et al (2009) argued that "*the lack of consideration on human scale activity had led into the lack of characteristics of the city. As a result, humanity is being ignored subjectively and objectively in the planning and designing our living and work space. In such a*

car dominant city, people would have less and less choice to experience the daily life on foot. Pedestrian activity or street life can be viewed as travel mode; pedestrian is defined as “one travelling on foot” (Owens, 1993). Street activities are more visible and prominent than activities that occur inside the building and concentration of the activities on street and their visibility from the street are important in order for the place to be noticeable and more attractive (Shamsuddin, 2011).

Outdoor activities in public space can be divided into three categories: necessary activities (going to school or work, waiting for a bus or a person, shopping, etc.), optional activities (taking a walk, standing around enjoying life, or sitting) and social activities (children at play, greeting and conversation, seeing and hearing other people) (Gehl, 1987; Turel et al., 2007). However, Rapoport (1987) divides pedestrian activity into two principle types: dynamic and static. Dynamic activities comprise walking, strolling and running, while static activities include standing, sitting, squatting, working and talking. Pedestrian street life is not only affected by the physical variables but perceptual and cultural variables as well (Rapoport, 1987). Gehl (1986) argued that the categories of outdoor spaces are influenced by the quality and the character of the outdoor space. He adds that the activities and functions will be developed when the qualities of the space are improved (Gehl, 1986). Frick (2007) argued that the factors that define the social public space are the character and behaviour of the people within the space. As Shamsuddin (2011) added, human behaviour and the environment both affect each other. Frick (2007) posited that the interactive relationship between the activities and behaviour in the public space and the construction of public space, is imparted by its practical ‘functionality’ in space.

Rapoport (1986) argued that pedestrian activities can be discussed in terms of two types. The first type is ‘dynamic’ pedestrian behaviour, which mainly focuses on walking or strolling. These are comparatively constant in nature; culture influences how acceptable walking is, who walks, where and when, with whom and why. The second type is ‘static’ pedestrian activities such as sitting and standing, squatting, lying down, eating, playing, working and sleeping, etc. According to Rapoport (1986), these activities vary greatly with culture, where some activities in some countries would not be acceptable in another country. As supported by Shamsuddin (2011), cultural values affect the behaviour in streets and reflect the direct human response to the environment. She also stressed that climate also plays an important role in influencing behaviour patterns, and, thus, the townscape that responds to the climate will display a unique behavioural response and design features. Based on previous studies it was proven that different cultures and groups of people tend to do different behaviours and activities in street. Things that might be the supportive characters to activities and behaviour in Western and European countries might not be the supportive elements that affect the activities and behaviours in the Malaysian context. Therefore, the study is needed to look at the relationships between physical characters of the street in Malaysia context with users activities revealed on site. This can help to achieve the objectives in identifying and determining the factors and attributes that support the activities on the street, which at the same time contribute to the use of the street, which we can call a user-friendly street.

3. Methodology

There are two complementary research methods used in this research i.e., field study and survey. A single case study was applied in this study. The case study chosen is one of the main shopping streets in the city centre Kuala Lumpur (Jalan Tuanku Abdul Rahman). It is selected based on the physical, functional and socio cultural characteristics of the street. The inventory of the case study is based on field observations of activities using schedule checklists, photo and maps procedures. Observation were designed to provide information on the physical characteristics and quality environment of the street study and pedestrian users and space use: number of people were using the different space areas during weekdays and weekends, the peak used periods and types of activities taking place on the streets, and what type of activity did the different user groups participate. In this research, users’ perceptions element was obtained through a sample survey of daily users, occasional users and non-users.

4. Users’ choices and behaviour in urban streets

There are many factors that make people used the street and it is mostly come from two main aspects- physical aspects and functional aspects. As mentioned in literature review in evaluating the people’s choices and behavior in a street, it is important to examine the actual uses and activities and their preferences towards the street.

4.1 Attractions

In this paper, attractions were shown to be an important factor that can persuade people to use the street. Attraction or desirability is related to the qualities engaged with by the eyes, aesthetic values and entertainment quality (KLCH, 2003). The survey of street users in Kuala Lumpur city centre shows that the main reason they

did not use JTAR was because the street was unattractive to them. Attractive can be categorized in terms of physical, social and cultural (Gehl, 2000; Plowden, 2001). It is strongly associated with the mixed use of streets, variety of activities and good places with buildings and architectural features (Gehl, 2000). The results from this study show that functional factors were the strongest form that contributed to the use of the street rather than physical factors. Based on the survey, the functional attractions according to the occasional and daily users in JTAR were shopping centers and the best place to earn money. It was proven in the results on occasional users' and daily users' feedback that the main attractions of JTAR that make them use the street, especially for occasional users, was the shopping centers. This tallied with the main role of the street as a shopping and commercial street. Based on previous research in JTAR by Abdallah et al. (2010), they also found that the activities along the street were mentioned as the most distinctive feature of JTAR.

The second attraction of this street is as a place to earn money. This is supported by observation on site. The place is surrounded by mainly office buildings and banking centers that promote the intensity of office workers in the area. This activity is a necessary activity (Gehl, 2010). In addition to shopping and being the best place to earn money and income, the physical environment, such as the public spaces, buildings and landscape also contributes as one of the attractions in JTAR. The main physical attractions in JTAR to the users are public facilities and public spaces. These kinds of attraction are related to 'the feeling of relaxation'; leisure and aesthetic value (Jacobs, 1996; KLCH, 2003). It was found in the survey that different groups of user are attracted to JTAR for different reasons. This is because their intentions and reasons for using the street, as well as their activities and how they use the street may affect their attraction to the area. However, attraction is subjective to all the users. There are certain factors that make it attractive to certain groups but not to others. The results show that for daily users, instead of shopping and a place to earn money the public facilities and public spaces on JTAR are also the main attraction there. This indicates the significance of the shopping streets in supporting the economic and social activities. Unlike the occasional group, the daily group indicated the physical environment public facilities and public spaces as another attraction of JTAR. For occasional users, their attractions to JTAR were most specifically for the shopping centres and as the best place to earn money and income. The familiarity, time spent and frequency of visits to JTAR were different between the occasional and daily users, which meant that their criteria of attraction to the place were dissimilar. Daily users were the group of users that used the street daily with duration of stay there; therefore they used more public facilities, public spaces and were more concerned with the physical environment.

4.2 *User's activities on street*

The reasons for use may affect the activities on the street. The results from the surveys indicate that in the context of JTAR, the functional factors were the main factors that influence the use of the street. Users' activities on the street were very much dependent on their reasons for using the street and also concerning the quality of the environment (Gehl, 2010). Based on the questionnaire survey of the occasional users, the most frequent reason they use JTAR is for shopping. This can be associated with JTAR as a shopping street and shopping was the main attraction in the city centre. Based on observations on site even though there are different types of development, the most vital generators are business and commercial activities. In observation it was also found that JTAR is associated with Indian Muslims, Indians and the Malay community due to the nature of trading activities that are actively participated in by the two ethnic groups. This is supported by the feedback from the interviews and from the statement by (Shamsuddin et al., 2010) in their study on JTAR in which the majority of users use the street for shopping purposes. The results from the observations survey on the activities in JTAR found that nodes of activities were more focused around shopping areas. This supported that the main activity here was shopping. It was found that during observation, shopping activities were more during weekends and the intensity of people was very high around the UO superstore area and the Sogo area spreading to Pertama Complex .

The second significant purpose for being in JTAR according to the respondents was meeting friends. Based on the onsite observation, people met friends together enjoying food in restaurants or shopping together. The presence of outdoor cafes and restaurants that provide wireless Internet and air conditioning make the place suitable as a meeting place for people. Other activities such as visiting, relaxing and entertaining were optional activities that were present in JTAR. However, based on the survey the percentage of users for these activities were relatively low which shows that this street is also not just used for necessary activities. Although 'hanging out' or leisure activities were not the main attraction in JTAR, the users still used the street during their free time. The results concerning the purpose for using the street in Kuala Lumpur also showed that they use the street for the purpose of 'hanging out'.

In this study, the respondents were asked for their preferences in using JTAR during their free time. This was to identify whether or not the street is used for optional or social activities. The feedback from the occasional users shows that, 55.6 % like to come to JTAR during their free time. This shows that the street is also a place for leisure activities. When talking about leisure it must be related to their optional and social

activities in the street. From site observation, dominant buildings such as Sogo, the Pertama Complex and Maju Junction are being used as places for sitting, meeting and walking. However, in the case of JTAR it was found that most of the social activity appeal was passive contacts like seeing and hearing, as Gehl (1991) pointed out as 'superficial'.

A pleasing environment is one of the sub factors that can attract activities onto the street and one of the criteria that supports user-friendly factors. In this study, the respondents were asked about the actual environmental quality of the site. The results of the survey concerning the degree of visually pleasing places in JTAR show that there was a positive response from users' perceptions concerning the quality. There was a slight difference in users' perception between two types of user towards the street's "pleasing environmental quality". The daily group of users gave a more positive response towards this attribute, followed by the occasional user group and non-user group. This shows that visually pleasing place is one of the factors that can attract people to use the street. This was proved by Gehl (2010) in that there is a strong connection between the qualities of physical environment on site and its use by people. Gehl (2010) found that there is an increase in environmental quality that gives a boost to optional activities and at the same time increases the social activities.

Based on the reasons given in using the street, it can be said that most of the activities in JTAR were among the necessary activities such as shopping, working, living there and studying. There are a few social activities occurring along this street. This supports the theory from Gehl (1991) that the necessary activities constituted the majority group in relation to walking. That was also the reason why the daily group were more concerned with the environmental condition compared to the occasional users. However, this group is more or less independent of the exterior environment because they have not much choice. For the group doing optional activities, the street is used because the exterior conditions are optimal for them, especially when the weather and place are inviting. These activities are dependent on the exterior physical conditions. Most of them use the street because they have to use it. This was reflected in most of the respondents' statements when they described shopping and meeting friends as the main reasons they use the street. The understanding of the activities that occur in the street is important to generate new ideas and also for proposing new development that is friendly to their users. This is in line with Sulaiman (2000), who stressed that the designers are highly recommended to look into the activities in the urban spaces in order to exploit them for future design.

4.3 Proximity (Commute distance)

The proximity or commute distance from the user's place of work and home is one of the most important factors influencing the use of the street. This is also supported by the results of the survey of the non-user group, which indicate that proximity was the second main reason that stops them from using the street. People are much more likely to walk to a given destination if they perceive that the distance is not too far. The perceived distance can be influenced by the right type of land use and design characteristics. Based on observations it was found that design element such as continuous walking systems that connect door fronts with transit stops or other destinations can create good connections. Only few of the respondents walked the whole length of the street. This supports the statement from most of the authors in the literature review that people can only walk approximately 1 kilometre (10 minutes) to reach services and facilities. The close proximity of public transport and shopping spots make this street highly accessible for pedestrians that gives comfort in using the street (Carney, 2000). Therefore, the locations for the services and facilities, such as shops, public transport and other facilities should be located or situated within a 10 minute walking distance (Burton et al., 2006). This finding is supported by Al-Azzami (2004) in his research study. Proximity from the parking area to the users' destination is also another key factor that contributes to the feeling of comfort to the street users

4.4 Crowdedness

The street environment plays an important role that makes people use the street. This research revealed that the street was congested with traffic and people, which contributes to the reasons why they avoid using JTAR. This is supported by the results from the occasional users in that one of the main reasons they did not like to come to JTAR during their free time is because the street was too congested. Based on observations on site, the street was not only crowded with pedestrians but was also dominated by motorists on the road, especially in the Chow Kit area where there is a four lane road. The high use of private cars also contributed to congestion in JTAR. Based on the users mode of transportation to this place, it shows that most of them use a private car (39.3%), LRT (36.8%), followed by motorcycle (14.5%), bus 7.7% and taxi 1.7%. This is also supported by the findings from the observations of the Chow Kit area where the environment was very crowded with people, motorcycles, beggars and lots of migrants. The motorbikes that park illegally on the sidewalk cause clutter and make the pedestrian space more congested. This is supported by Krupart (1985) who stressed that crowding will contribute to the feeling of stress. Of the three types of user, the daily group users suggested that reducing congestion was the main improvement to JTAR followed by the non-user group of users. In JTAR, the feeling

of crowding was also caused by the speed of the pedestrians. People who walk along this street tend to walk much slower for the purpose of shopping. This is supported by the findings from Al-Azzami (2004) in his research, which looked at the movement of pedestrians in shopping streets. He found that pedestrians walked much slower when shopping than for other trip purposes. This was because the shoppers tend to stroll, stop to look in windows, travel with children and carry luggage (Al-Azzami, 2004). In summary, crowded streets and peoples' eyes produce a sense of belonging and turn the cities into lively cities; however, if they were too crowded people may feel uncomfortable and unsafe. Street users will avoid using streets that are too crowded.

4.5 *Familiarity and length of engagement*

The more familiar people are with a place the safer they feel with the environment. According to Ujang (2008), familiarity with shopping streets closely reflects the user's ability to identify locations and elements associated with it. Based on the feedback from the respondents who did not use (non-user) JTAR, one of the significant reasons they do not use the street was because they were unfamiliar with the street. Familiarity is related to their length of stay and how long they are involved with the street. User that is more familiar with the street feel safer to use the street alone. The results from the daily users show that the majority of the users who engaged with JTAR for more than five years feel safe to use the street alone. Most of the respondents that said 'yes' to use the street alone in JTAR were the group of users who had been engaged with JTAR for more than 15 years. Frequency of visits increases the level of familiarity with the people and setting in JTAR. It was also proved by Ujang (2008) that the respondents who have been engaging with the streets for a longer period of time felt an increased level safety of and comfort towards the street. This shows that familiarity and frequent engagement with the street make the street friendlier to users by developing a greater sense of belonging and strong emotional feelings about the place. This is in line with the findings of Ujang (2008), who found that familiarity contributed to a stronger sense of belonging and evokes emotional and social attachment.

4.6 *Others*

In addition to the factors mentioned above, there are other factors that are important to the users that make them use the street. Figure 1.0 show that based on users' suggestions concerning the improvements needed in JTAR, the public facilities, such as interesting public spaces, improvement to public facilities (toilets, signage and dustbins), seating, greenery and trees, parking, maintenance and activities. Based on the interviews, the majority of them mentioned that pedestrian facilities were the main factors to make them use the street. Sufficient and proper parking, ample seating/rest area, greenery/shade for pedestrians, suitable material used for pedestrian walkways and good maintenance were the factors that users need in respect of the street. Of the three groups of users, the non-user group suggested improving the safety factors in JTAR, reducing congestion and providing public amenities. This may also constitute the main reason why do not use JTAR. As for the daily user group, what matters most includes congestion, interesting public places, maintenance, greenery and activities on the street. This group was the one that used the street most, was familiar with the street and valued the street. Consequently, they were more concerned with improvement of the environmental condition making it more pleasant and comfortable - rather than the safety factor.

4.7 *Main Findings*

The finding suggest many factors that make people use the street that are associated with a user-friendly street. The factors are attractiveness, activities, less crowded/ congestion, proximity, familiarity, public space, greenery/trees, public amenities, maintenance and freedom of action. These are the main factors that make them either use or not use the street. The findings suggest that the factors were influenced by the functional and emotional factors compared to physical factors. The functional factors of the street are related to satisfying the users' needs and supporting their desired activities on the street. It was discovered that the attraction of the street is one of the significant needs for street users that make them use the street. In this street the main attraction for the users to come here was shopping activities and as a place to earn money. This emphasises the dominant role of the place as a shopping place as well as a commercial area. It was suggested that another factor that attracts people to use the street is the physical environment, such as public spaces, greenery/trees and buildings. This finding is similar to Jacobs (1996), who discovered that qualities engaged with the eyes can attract people to the street.

Activities comprise another factor that make people come to the street. Based on the findings, the main attractions here were more in respect of necessary activities. Activities relating to relaxation and leisure activities were slightly low compared to others activities for this street. This also contradicts the findings from previous research from certain European and Western countries. The results may occur because of the constraints in terms of microclimate such as unsuitable temperature and lack of shade from the sun and rain, and

a culture that limits outdoor activities. This research found that the feeling of crowding and congestion on the street affects the level of friendliness to users. The density of people on the street (crowding) and the number of cars on the road (congestion) contribute as another factor that brings people on the street. In addition, in the case of a shopping street, crowdedness resulting from the speed of pedestrian was also a factor. It was discovered that people use the street when there are other people using it and avoid it when there are too many people there. This is related to the feeling of safety and comfort, where the presence of people and cars can increase the natural surveillance on the street. This is in line with Krupart's (1984) theory that this factor is related to the 'feeling of stress'. The findings also highlight that proximity/distance from origin to destination is another factor that relates to a user-friendly street. This is parallel with the theory by Carney (2000) and Burton et al. (2006) that this factor contributes to the accessibility and comfort to the users of the street. However, based on the research by Al-Azzami (2004), in certain cases, people have to avoid the shortest route due to obstacles and the presence of too many people on the street. It was found that familiarity and length of engagement with the place affect the level of a friendly street to the users. In this research, the findings show that a strong sense of familiarity to the place is developed through constant engagement and long-term association. It was revealed that the daily users who are engaged with the street for a longer period feel more comfortable and safer on the street. Hence, according to the research by Ujang (2008), familiarity can strengthen the attachment to the place. Public space, greenery/trees, public amenities, maintenance and freedom of action are other supportive factors that contribute to a user-friendly street. Although the factors above are the main factors that contribute to a friendly street, there are five other factors that have a high percentage and have been suggested as improvements that are needed in the street by the users. These include 'public space', 'greenery/trees', 'public amenities', 'maintenance' and 'freedom of action'. This is supported by the statement by Knox (2005), who stressed that in creating ordinary places, creating and increasing the qualities of the factors mentioned above is very important.

Streets in the city centre are used differently and for different reasons. These differences show that street needs and preferences are not general, but context bound, and are affected by local physical characteristics and environment as well as the social connection between inhabitants in a local context. These findings suggest that street planning and design and management should give greater consideration to users' needs and the local context. It was discovered that different types of user influence the variation in the factors that make a street friendly to them. In this paper, the users of the streets represented by daily users (those who are constantly engaged with the street studied), occasional users (those who occasionally and seasonally use the street studied) and non-users (the respondents who do not use the street studied). The attraction of daily users concerns the environmental quality, such as public spaces, buildings, the landscape and public facilities on the street. However, the attraction to occasional users is more dependent upon functional/activities on the street. This may relate to the reasons why they use the street. It was also discovered that daily users are the group that spend most time on JTAR. Therefore, this group is more aware of the environment and need more facilities for leisure and relaxing activities, such as good urban space, nice buildings, beautiful landscape, good maintenance as well as cleanliness, and public facilities. For the non-user group, the lack of factors and attributes mentioned above were the reasons they do not use the street. Based on the findings, it was revealed that different types of users have different needs.

5. Conclusion

The purpose of this paper is to determine the factors that make people use the street, their needs on the street and pattern of use, which contribute to a user-friendly street. It was discovered that the needs of users on the street depends on factors; attractions ; activities and reasons for using the streets; proximity, lack of congestion (crowded); and familiarity and length of engagement with the place public space, greenery/trees, public amenities, maintenance and freedom of action. It was revealed that in respect of street in Malaysia, the users' needs tended more to the functional factors compared to the physical factors. The findings show that there were mostly similar factors in general user needs of user-friendly streets in Kuala Lumpur with the needs of people of urban public places from other countries. There was not much difference between the user needs of a user-friendly street with the needs of users of other urban spaces in previous theories. However, in terms of the level of importance of the factors they vary from previous theories. This may relate to the environment, climate or culture of the place, which is different from previous studies. It was also found that in the case of Malaysia's commercial streets, the issues relating to the conflict between pedestrians and vehicles on the road (caused by the street being monopolized by cars) and conflicts between pedestrians and street vendors on the sidewalk are serious. This contributes to the crowdedness on the street, which causes the street to become unfriendly thereby creating a feeling of stress, as well as being an unsafe and uncomfortable environment.

However, it was evident that different types of user (daily and occasional) have their own uses and activities on the street. This affects their level of need and the factors that make the street friendly to them. In this research it was revealed that the group of occasional users was more concerned with the activities (especially necessary activities) on the street that make them use the street. While for daily users they need

greater improvement of site conditions, site facilities and a site environment that is comfortable and conducive. As for the non-user group the lack of the factors mentioned above are the main reasons why the streets are not friendly to them. This finding shows that the needs of users towards a friendly street are more affected by the uses and activities, familiarity with the street and time they spend on the street.

In conclusion, the factors that make the streets friendly in this research were mostly similar with the previous theories. However, the attributes that contribute to the factors vary for each context. The attributes that contribute to the attraction of a street in Malaysia might be different from the attributes of attraction in other countries, especially countries with a different climate and economic level (between developing and developed countries). This identifies the factors that need to be considered in future guidelines and policies for planning and design in urban spaces especially streets. It is hoped that these factors will be taken into consideration by those involved with decision making in respect of urban design, as a guide to create a friendly street environment for the users that is generally lacking in our urban streets at present. It is hoped that findings from this research will guide future development planning and design of urban streets and that repetition of the mistakes from the past can be avoided.

References

- Abdallah, S.I., and Sulaiman, A.B., 2008. Physical Qualities and Activities Patterns Associated with Street's Identity, A Case Study Jalan Tuanku Abdul Rahman-Kuala Lumpur Malaysia, 2nd International Conference on Built Environment in Developing Countries (ICBEDC 2008) pp.1828-1839.
- ACHARIAM, N., 2011. KL City Plan 2020 to be gazetted in July. New Straits Times (online). Available from: www.nst.com
- Al-Azzami, M., 2004. Factors Affecting Pedestrian Walking Speeds, Unpublished. Ph.D. Theses, Napier University.
- Appleyard, D., 1983. Streets Can Kill Cities: Third World Beware (Guidelines for Street Design in Third World Cities), Habitat . Vol 7, No.3/4, pp.111-122.
- Burton, E. and Mitchell, L., 2006. Inclusive Urban Design: Streets for Life, Architectural Press, UK.
- Chan, D., 2011. KL not that tourist-friendly? New Straits Times (online). Available from: www.nst.com
- Carmona, M., Heath, T., OC, T. and Tiesdell, S., 2003. Public Places- Urban Spaces: The Dimension of Urban Design, Architectural Press, London.
- Carr, S., Francis, M., Rivlin, G.L. and Stone, A.M., 1992. Public space. USA: Cambridge University press.
- Cullen, G., 1961. The Concise Townscape , London, the Architectural Press.
- Davies, L., 2000. Urban Design Compendium, English Partnership UK.
- Forsyth, A., 2003. People and Urban Green Areas: Perception and Use, Design Center for American Urban Landscape, Design Brief, 4/June 2003, University of Minnesota.
- Gehl, J., 1987. *Life Between Buildings* (New York, Van Nostrand Reinhold).
- Gehl, J., and 2000. *Walking: A Mode of transport- but much more*, Paper presented to Walk21-I, The First International Conference on Walking in the 21st Century, Feb 2000, London, England.
- Gehl, J., 2006. *Life, Spaces, Buildings*. In Moor. M and Rowland. J (ed), Urban Design Futures, Taylor and Francis Group, London and New York, pp. 71-75.
- Gehl, J., 2007. *Public Space for Changing Public Life*. In Ward Thompson and Trovrou, P (ed), Open Space: People Space, Taylor and Francis Group, London and New York, pp.3-9.
- Gehl, J. and GEMZOE, I., 2000. *New City Spaces*, Danish Architectural Press, Denmark.
- Gehl Architects (2004), Towards The fine city for people- public space and public life London, Project report to transport for London
- Jacobs, A.B., 1996. *Great Streets*, The MIT Press. Cambridge, Massachusetts, London, England.
- Jansson, et. al., 2010. Playground planning and Management: An evaluation of standard influenced provision through user needs.

- KLCH, 2003. Kuala Lumpur Structure Plan 2020. Kuala Lumpur: Kuala Lumpur City Hall
- Knox, P. L., 2005. Creating Ordinary Places: Slow Cities in a Fast World, *Journal of Urban Design*, Vol 10, No. 1, p.p 1- 11.
- Krupat, E., 1985. *People in Cities: The Urban Environment and its effects*, Cambridge University Press, New York.
- Mijan,D.2000. Responsive public open spaces in the city centre of Kuala Lumpur Malaysia. PHD, Oxford Brookes University
- Plowden, B., 2001. A Manifesto for Living Streets, Paper presented to Walk21-III Steps Towards Liveable Cities, The Third International Conference on Walking in the 21st Century, May 9-10 2001, San Sebastian, Spain.
- Rapoport,A.,1986. The use and Design of Open Spaces in Urban Neighbourhoods ,In Rapoport,A and Frick,D, *The Quality of Urban Life* , Walter de Gruyter & Co. Berlin. New York pp.159-175.
- Rivlin and Leanne, G., 1994. Public spaces and public life in urban areas, Neary, S.J., Symes, M.S. and Brown, F.E. (ed.), *The Urban Experience - A People-Environment Perspective* (Proceedings 13th International Conference of the IAPS), ISBN 0-419-20160-2, Manchester (UK) 13-15 July 2018 available from: http://iaps.scix.net/cgi-bin/works/Show?iaps_13_1994_025.
- Shamsuddin, S., 1997. Identity of Place: A case study of Kuantan town centre, Malaysia, Unpublished. Ph.D. Theses, University Of Nottingham.
- Shamsuddin,S.,Abdul Rahman, N. and Sulaiman, A.B.,2010. How walkable is our city? Its influence in creating sustainable city centre design. In: *Proceeding of the 1st International Conference on Sustainable Architecture and Urban Design (ICSAUD 2010)*. Universiti Sains Malaysia, Malaysia.
- Shamsuddin, S., 2011. *Townscape Revisited: Unravelling the Character of the Historic Townscape in Malaysia*, UTM Press, Malaysia.
- Sulaiman, A.B., 2000. *Urban Design Method-Theory and Practice: A Case Study in Malaysia*, Unpublished. Ph.D. Theses, University Of Nottingham.
- Tang, Y and Chen, X, 2009. Towards a walkable city, 45th ISOCARP Congress, Urban-Research blogspot.com
- Tibbalds, F., 1992. *Making People-friendly Towns: Improving the public Environment in Towns and Cities*. Harlow: Longman.
- Turel, H.S., Yigit, E.M. and Altug, I., 2007. Evaluation of Elderly people's Requirements in Public Open spaces: A Case Study in Bornova District (Izmir, Turkey). *Building and Environment*, vol 42, issue 5, May 2007, pp 2035-2045.
- Ujang, N., 2008. *Place Attachment and Users Perceptions of Kuala Lumpur city centre*. University Putra Malaysia
- Whyte, W. H., 1980. *The Social Life of Small Urban Spaces*, Washington, D.C, The Conservation Foundation.
- Whyte, W.H., 1988. *City: Rediscovering the Centre*, Doubleday Publishing Group, New York.
- Wooley, H., 2003. *Urban Open Space*, Spon Press, London