Shared Street as A Means of Liveable Urban Space

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Abstract. In recent years, there has been an increasing interest in the liveability of urban spaces in many cities around the world. While the sustainable development goals are targeting to achieve more sustainable cities and communities, by providing universal access to safe, inclusive and accessible, green and public spaces, it is, therefore, of great importance to have more liveable urban spaces within cities. This paper discusses the importance of implementing the shared space concept to attain liveable spaces. Single case study will be the strategy of this research process supported by a qualitative approach in collecting data through conducting field observation and visual survey in the site. Since the behavioural is the manifestation of human response to the environment, this study focuses on the reaction of users to their physical settings. This means it is the physical attributes that will be analysed rather than people’s perception. Thus, methods related to directly communicating with people, such as questionnaire survey, will not be implemented in this study. Synthesizing the content through using SWOT method as the main analysing technique will be implemented. The findings show that by implementing the shared space concept, it will significantly contribute to the liveability of the spaces that are more comfortable, attractive, and accessible for people to live, work, and play.

1. Background and Issues

The significance of urban spaces has been increasing in the discussion of the liveability of any city or town. This significance is concurrent with the increasing interest in the quality of life, which is the result of the interaction between users and the urban environment [1]. The low-quality environment, due to the relatively high use of motorized vehicles, has an impact on the quality of life [2]. Many spaces in many cities have become threatening places polluted and congested by traffic and most street’s ground-level buildings, especially the offices, are not welcoming at evening and weekends [3]. Thus, various activities that occurred in urban spaces have been considerably declined [4]. This decline in activities is mainly because numerous numbers of urban spaces have been invaded by motorized vehicles, conceding the public space and the needs of people to the needs of the automobile (Figure 1) as well as effectively permitting vehicular movement to overcome the pedestrian one. However, a good quality urban space should raise concerns towards pedestrian activities, such as strolling, lingering, sitting, watching others, and so on in order to increase the liveability of those spaces [5]. The decline of these activities in urban spaces results in the decline of public life [4]. This decline has made urban spaces lose their main role in meeting people’s needs and resulted in
dissatisfaction of people towards their places, ending up in the decline of the liveability of those places [6].

In Malaysia, on the other hand, few examples of urban spaces can be considered attractive and comfortable to all segments of the community. Therefore, significant is the improvement of the efficiency of transportation mode, such as walkability within the City Centre, and making it attractive, enjoyable, and comfortable to pedestrians [7]. Furthermore, the centre of Kuala Lumpur is facing high carbon emission due to the high use of vehicles within the city. The role of urban spaces as the main arena of cultural and social interactions have been declined [5]. Also, based on a study conducted by Kuala Lumpur City Hall, it has been stated that many streets in Kuala Lumpur are not comfortable for pedestrian due to poor accessibility, linkages and pedestrian facilities in addition to the congested traffic and lack of spaces for pedestrian movement [8].

Malaysia has further been rated the third in the world of automobile ownership with 93 percent. This ranking means great dependency on the automobile has been increasing with significant demand on transportation infrastructure that is resulting in more traffic congestion in urban spaces that impedes their liveability [9]. It is necessary to encourage citizens to walk in liveable spaces to enhance Kuala Lumpur image as a liveable city [10]. Hence, this paper is discussing how necessary is to share city spaces with all modes of movement patterns with due priority to pedestrian one in order to have comfortable, attractive spaces, especially in the City Centre, for different activities and group sectors [9].

![Figure 1. Streets invaded by cars all over the world][11]

2. Literature Review

2.1. Urban Space

Urban space can be described as an external space in cities and streets and squares are the main elements of urban space [12]. Streets, which are the focus of this research, are considered as paths along which the observer moves and they are, for many people, the predominant element in their image to structure the city [13]. Indeed, people observe cities while moving through them and along these streets, the other environmental elements are distributed [13]. In addition to being a main physical element on which the essential free movement of city life exist, streets are also a social element. They are a series of connected places that has multiple functions, for staying, sitting, standing in, and so on, and not just for moving through [14]. Streets are the main public spaces in many cities, and if someone thinks of any city around the world, the street will come to the mind [15]. Such a social space that may prevent particular activities and allow some others [13]. The conception of the town or city as a product of urban function dominated by vehicular movement deprives the street from its main role or meaning and as such leave urban street without reason for being [16]. Since streets are not only a means of transport but also an arena for interaction and living, our streets cannot easily accommodate the fast-moving automobile, but this does not mean precluding the use of vehicular traffic within streets. It is also suggested that the city looks dreary if a city’s streets look dreary and conversely; it looks interesting if they look interesting [17].
2.2. Shared Street Concept

The concept of the shared street is about giving more freedom, comfort, and safety to the movement of pedestrians as well as ensuring unobstructed vehicular and cyclist movement. This solution can be achieved by making people make their own decision in using streets rather than following a specified track of regulation; therefore, the best way of changing the behaviour of people is to change their environment [18]. There are four fundamental principles to obtain a successful shared street; namely, pedestrian dominance, distinctive and attractive public space, inclusive design, and connectivity [19].

Firstly, pedestrian dominance can be achieved by low vehicle speed, through visual narrowing method; application of courtesy crossings; transitional zone (Figure 2); no level differentiation dividing the carriageway, pedestrian, and cycleway; comfort spaces; and a space for parking and loading activities allocated without interrupting pedestrian movement and activities [19]. Secondly; the distinctive and attractive public space is mainly associated with the increasing of people’s active engagement with space, encouraging diversity, and social interaction [19]. Besides, the provision of seating, restaurants, self-congestion, lighting, and local atmosphere can be used in achieving the goal of distinct space with a sense of place [20]. Thirdly; inclusive design means considering all categories of street user and creating a comfortable environment for all community sectors regardless of their age ability or status in order to increase pedestrian’s volume and make less the dependency on automobile [19]. The final main principle is related to connectivity. This is about connecting the pedestrian with the public transportation network. However, this does not mean that buses and trains pass through the shared street. Also, reducing the flow of vehicles by distributing vehicles to other alternative streets connect the shared street with other transportation modes [19].

![Figure 2. Special allocation of shared space [21,22]](image)

One of the main goals of the shared street concept is creating a space that non-vehicular users can use with convenience and confidence particularly the special need users, such as people who have sight, hearing, physical, intellectual or cognitive difficulties, elder, and children [23]. The shared street solves the dilemma of the differentiation between surface levels for older people and physical disability. While eliminating the curbs from the streetscape confuse the people who have visual disability, and while integrating the vehicular and the non-vehicular users together in the same space was not suitable for people who suffer from hearing disability that they cannot recognize the sound of the coming vehicles, comfort zone has, therefore, been introduced as effective solution providing an appropriate environment for this category [20].
The main philosophy of shared street is ‘streets with more danger are safer’ [18]. In other words, the philosophy of shared street refers to whenever there is a dangerous situation; people act in a less risky way while when there are safe situations, people act in a hazardous way. In fact, the demarcated spaces by traffic signs and street demarcations inspire drivers to feel safer and act in reckless way, whereas when street users are aware that they are using the same space with different kinds of users and the circumstances of the street are not clear, they act more wisely and responsibly [18]. This demarcation creates a more comfortable, attractive, safe and accessible environment that strengthening the pedestrian priority within streets.

2.3. Liveable Urban Space

The concept of liveability is broad and dependent on many variables, covers a lot of meanings that depend on the objects of measurement and the perspective of those making the measurement, and involves subjective assessment of the quality of the environment that most researchers have agreed [24]. It has been stated that liveability is deemed as part of the sustainability concept [25]. The physical planning must consider the scale of development, transportation system, climate change, natural change, park, and greenway without compromising the natural resources [26]. It is, therefore, important that the physical development of any space be integrated with the functions that will facilitate the local community to sustain their daily activities efficiently [3]. Also, physical development must be able to use resources efficiently in order to achieve a sustainable-oriented urban design. The walkability is considered part of the liveability since it promotes a sustainable environment and a liveable urban space [10]. The liveability of any city, neighbourhood or urban space comprises the interaction between five variables namely, local economy, local inhabitants, service level, community life and physical place [27]. The physical place has been described as the landscape and the buildings defining urban space, which play an essential role in the liveability of any city. As such, it is the physical attributes of the ‘physical place’ that contribute to making places attractive, comfortable, safe, and accessible, thus, liveable for people to work live and play.

The concept of liveable urban space has been implied in the worldwide literature of good or successful urban space [25]. Thus, a successful, good quality, or well used urban space are terms refer to the liveability [25]. It has been emphasized on the traffic calming methods in order to increase the liveability of the streets [28]. In addition to the traffic-calming strategies, it has also been suggested that streets are the main public space for the community, especially for children and older people. Mixed uses and environmentally clean, and healthy places are the main components of liveable streets [26]. Good quality urban spaces are well-used and sociable spaces used by individuals and groups as well as spaces that facilitate passive and active engagement [29]. Besides, liveable urban spaces are usable spaces for all people that provide both mobile and stationary activities. Hence, Liveable urban spaces are attractive, comfortable, safe, and accessible spaces for all people to work, live and play. This definition of liveable urban space will be adopted in this research.

Evaluating the liveability of urban spaces needs determining the liveability dimensions and converting them into measurable elements [27]. It has been stated that social, physical, functional dimensions are the main liveability dimensions [24]. The social dimension of liveability refers to the elements of community life, social interaction, sense of place, safety, and sense of belonging and appreciation of the cultural and heritage values [7], whereas the physical dimension refers to the noise and pollution levels especially from motorized vehicle; attractive, comfortable and accessible environment; and presence of open spaces and greenery [26]. As for the functional dimension, it is generally attributed to the maintenance; public transportation and facilities; and the presence of retail shops, shopping centres, kindergarten, schools and other services [24]. In this research, the study is limited to the physical dimensions in creating liveable spaces. However, the dimensions are, further, interrelated, and not isolated from one and another.

Furthermore, the study is limited on a quite small portion of a city, that is an urban space, in order to comprehensively examines its liveability. In fact, comfort and attractiveness of urban spaces depend mainly on the physical setting and activities. Edges, which are the points of interaction between indoor
and outdoor space; outdoor activities; local climate; natural element; pedestrian needs, such as spaces for sitting standing and staying; and the connectivity and accessibility within the space [11] are the main actors in urban design. Hence, enhancing the physical quality of urban spaces greatly contributes to the liveability of those spaces.

In summary, the literature explains that the shared street concept proclaimed to prioritise pedestrian movement rather than vehicular one. This is through emphasizing on pedestrian’s comfort and attractiveness within urban spaces, which further depends mainly on the edges that define the space, which are the points of interaction between indoor and outdoor space; activities taken place; local climate; natural element; pedestrian needs, such as spaces for sitting standing and staying; and the connectivity and accessibility within the space [11]. Hence, enhancing the physical quality of the street greatly contributes to its liveability.

3. Research Methodology
This research is adopting a qualitative approach in gathering data through a single case study method. The study area is Raja Alang Street located in Kuala Lumpur City Centre linking between Chow Kit and Kampong Bharu districts. This street is mixed in uses with significant market activities, especially at night and has been targeted to be a major pedestrian walkway within the City Centre [9]. However, it exemplifies the invaded space phenomenon, which is defined as a place sacrificing spaces for pedestrian activities to the needs of motorized vehicles [4]. Since behaviour is the manifestation of human response to the environment [30], and since the physical place is one of the main factors of liveability [31], this study is limited on the reaction of users and their physical setting in assessing the liveability of the street. This means gathering data will be primarily from field observation and visual survey supported by document review as secondary data in assessing the liveability of the street. Thus, this limitation means that it is the attributes of the physical setting that are being analysed rather than the perception of the pedestrians. In detailed case study method, the data in a real-life situation and the complexities of real life environment is explored or described in a way which may not be elaborated through experimental or research survey [32].

Behavioural sheets, human activity mapping and visual survey through photograph and sketch carried out to identify how variety and pattern of activities take place, how pedestrian activities are hindered by vehicular movement, as well as how the physical setting of the street contributes to pedestrian’s presence and dominance. Each activity presented using symbols and being drawn on base-map. Any physical elements relate to pedestrian activities taken place recorded by sketches and photographs. Weather condition also noted when observation conducted. Observation carried out in 4-time intervals from morning until midnight in weekdays and weekends.

Figure 3. The location of the study area
4. Result and Discussion
Based on the result from the field observation and visual survey conducted in Jalan Raja Alang, there are five (5) main attributes that contribute to the liveability of the street; spaces for sitting, standing and staying; spaces of low traffic speed, volume and congestion; physical accessibility; soft edges and presence of natural elements and shelter.

4.1. Spaces for sitting, standing and staying
In this research, spaces for sitting, standing, and staying, for all categories, in the street are shown to be an important attribute that can encourage people to linger and use the street. This is related to the quality of comfort within the space. In fact, creating spaces that merely allow people to come and go is not enough in liveable spaces. Indeed, optional activities take place if there is a wish to do so, and if the physical setting of the street makes it possible [11]. For example, environmental condition is a key determinant factor in deciding where people walk, sit, and stand. Consequently, poor physical quality of streets only allows necessary activities to occur. It is, therefore, of great importance to create spaces that support these activities such as walking to get a breath of fresh air, sitting, playing, or only standing freely. Based on the observation, the opportunities of sitting, standing, and staying along Jalan Raja Alang is insufficient and does not contribute to its liveability. This insufficiency is because these activities are more comprehensive and more demanding on the physical setting, such as seating, sheltered areas. Great is the difference between activity pattern in the site between day and night. This is, indeed, because of the night market that starts from 5 or 6 pm until around 2.30 am, which is the predominant activity after 4 pm. Hence, the flow of pedestrians is significantly increasing as its vitality. Nevertheless, opportunities for moving about, lingering, and participating in a wide range of social and recreational activities do not exist. In fact, the vitality of the street is considerably due to the flow of pedestrians and restaurants since food provision and fruit abound. Many stalls provide some sitting areas to the customers in order to enjoy its fresh taste that greatly contributes to the street liveability. It has been observed that many people do not stay

4.2. Spaces of low traffic speed, volume, and congestion
Since motorized vehicles make people feel uncomfortable and unsafe, affect the aesthetic experience of the streets visually and auditory (noise), and inhibits most social activities in those spaces, the potential of Jalan Raja Alang as a liveable space is reduced when cars occupy the space in great volume, speed, and number. Based on field observation that examines the movement pattern in the street, the following figures generally conclude that great conflict occurs between pedestrians and vehicles that inhibit most of the pedestrian activities within site.

Figure 4. Pedestrian and vehicular movement (Source: Author)
4.3. Physical accessibility
Since Universal Design is a concept of creating urban spaces that consider all sectors of people regardless of their age ability or status, attention should be paid to the children, people with disability and older people in the street designs and the sidewalk should enable users to walk in a group or pairs comfortably [33]. The streets in Kuala Lumpur City Centre should include wide sidewalk and bicycle lanes to increase the pedestrian’s volume and make less the dependency on automobile [9]. In this study, the emphasize will be on the levels and sidewalk condition and whether it is useful and adequate to the pedestrian, especially children, older people, and people with disabilities.

From the visual survey conducted to examine the physical accessibility in Jalan Raja Alang, Physical exclusion, which is the state of urban spaces that is difficult to enter regardless of whether or not it is possible to see into, can be clearly seen along the street. This is mainly due to the physical obstructions (mainly stalls taken up the sidewalk). In addition, the pedestrian network is not accessible due to the inconsistency of sidewalk width, and in some places, there is no sidewalk at all or sidewalk is too narrow and non-friendly for pedestrian especially children, disabled and older people. Not only is the sidewalk or the pedestrian footpath not accessible, but it also lacks significant or noteworthy pavement pattern or texture that indicate the street character. Thus, from the field observation and visual survey, it has been observed people with cart or disability hardly trying to walk or push their cart in the middle of the street accompanied with the motor cars and motorists due to not accessible pedestrian network along the site as well as pedestrian spaces are not demarcated (Figure 7.). This has been supported by a study conducted in Kuala Lumpur City Centre shows that Kuala Lumpur is not pedestrian-friendly as it currently has inefficient design and poor accessibility and linkages [8].
4.4. Soft edges

Edges, in this context, are in reference to Gehl’s definition and they have been described as zones where people sit, stand and walk and where inside and outside meet and interact. In fact, these are points where buildings meet the space and define it [11]. In Jalan Raja Alang especially at the eye-level floor of buildings, edges are of key importance in determining the level of different activities in the street. Also, they have a crucial influence on the vitality and attractiveness of Raja Alang street. Thus, the buildings flanking the site from two sides have comprehensively been studied and analysed according to Jan Gehl main elements that create good street edges, which are narrow units and many doors; open edges not closed; vertical design of facades; as well as interactive and mixed in uses. From the visual survey, the edge of Jalan Raja Alang is mostly interactive and transparent as it consists of retail shops, grocery stores as well as stalls that laid out along the street. However, some places along the site are closed and non-interactive edges that do not contribute to the pedestrian activities.

A record was made of how many and what kinds of activities took place in these zones in the course of an ordinary weekday and weekend. Besides, the duration of the individual activities was recorded. From field observation, it can be seen that coming and going activities are the least in duration, whereas the various stationary activities, such as just resting, standing freely, or play activities are the more prolonged. Since coming and going activities contribute little to the public life compared to stationary activities, these zones have been considered as places of the least contribution to the liveability of the street.

Figure 7. The uncomfortable and inaccessible pedestrian network (Source: Author)

Figure 8. The points where the edges are mostly closed and non-interactive as well as where poor architectural treatment appears (Source: Author)
4.5. Presence of natural elements and shelter

Well-designed and located hard or soft landscape elements in urban spaces in relating to the local climate can considerably contribute to creating a pleasant atmosphere through providing sun, shade, and protection from the wind and rain [14]. Besides, since the presence of natural elements, such as trees, plants, and water, have significant influence on the feeling of comfort of users in urban spaces [34], it is of great importance to identify the elements that provide shelter and the number and location of any natural elements such as trees shrubs or water features along Jalan Raja Alang. Thus, this section focuses on the natural elements and the shelter provision in the street.

The recurring rainfall in Malaysia throughout the year may contribute significantly to the number and type of activities along the street. In contrast to the necessary activities, optional activities along the street are affected greatly with the weather conditions. Thus, the provision of natural elements, such as trees shrubs or water elements as well as man-made structure, such as awnings, proper canopies or five-foot walkway contributes significantly on the comfort and attractiveness of the street.

From the visual survey, it is found that the site has insufficient natural or main-made elements that provide shade, shelter, and nice breezing for pedestrians. In fact, the street is devoid from a five-foot walkway, except in particular places. Furthermore, the presence of trees does not follow the minimum standard of trees distribution along the street which is between 6 to 10 meters [35]. This is manifested in the behaviour of people when they walk through the street. It has been observed that during raining, people, if there, walk difficulty with their umbrella during raining and any form of pedestrian activities nearly disappears.

![Figure 9. Weather conditions effects on pedestrians (Source: Author)](image)

5. Conclusion

The importance of greeting shared street would help to create liveable spaces since the liveability of any urban space is mainly attributed to the presence of a pedestrian in a comfortable, attractive, and accessible environment. This means the physical setting of the space that plays a major role in prioritising pedestrians over the motorized vehicle. Indeed, urban spaces have been created to pedestrians, not motorized vehicles. The analysis indicates that efforts to promote liveable urban space should concentrate on ensuring pedestrian priority spaces. In Kuala Lumpur City Centre, the majority of the streets, are congested with vehicular traffic and do not consider the needs of people, especially older people, children and disabled. The research shows that neglecting the physical environment is becoming an issue that needs to be addressed quickly to develop a liveable space. Accordingly, the attributes of liveable urban spaces should be continuously examined and assessed. Through examining the physical setting of Jalan Raja Alang within Kuala Lumpur City, five main attributes that contribute to the liveability of the street are found to be a precondition for the liveability of the street. These are spaces for sitting, standing and staying; spaces of low traffic speed, volume, and congestion; physical accessibility; soft edges and presence of natural elements and shelter. Hence, through implementing the shared street concept, it significantly contributes to the pedestrian activities and, therefore, the liveability of the street.
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