



A Behavioral Observation of Street Liveliness in Meldrum Walk, Johor Bahru of Malaysia

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ABSTRACT

On Malaysian streets nowadays, main priority is given to vehicular elements, which seems to comprise the functional qualities of urban public space for human interaction. To perk up such streets, “pedestrianisation” results in making a city centre pedestrian- friendly, and expedites the preservation of historical districts. **Problem statement:** Existence of people engaging in a variety of sustained and social activities can makes a street lively. **Approach:** As liveliness involves levels of activities, uses, interactions and their representation, current research appraises street liveliness through behavioral observation of sustained pedestrians’ activities in Meldrum Walk. **Result:** The data on traffic modes, walking and sustained pedestrians of diverse age groups and genders, different types of activities, postures, over different times of day and night analyzed. **Conclusion:** Proposing a wider range of attractions and opportunities for activities besides walking, working and shopping for users of different age groups and capability - which would qualify the environment and lead to elaborate the liveliness of such streets, is recommended.

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1. Introduction

Street represents the main public space (Jacobs, 1961; Appleyard, 1981; Jacobs, 1993; Carmona, 2003) in cities and contains various social groups and activities. In urban public

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spaces, liveliness refers to the presence of pedestrians and activities in addition to the various uses and interactions. Therefore, the liveliest streets are those, which contain a greater variety of pedestrians and their activities.

In contemporary times, streets can offer social contact, social awareness, and social cohesion (Mehta, 2007); however, the explosive increase in vehicular traffic has demoted pedestrians to subways and has seemed to impede social interaction in current streets. Thus, “pedestrianisation” as a traffic limitation policy has been suggested as a solution to retrieve space for pedestrians and non-traffic activities, and more profoundly, to improve the urban environment as a place in which to live (Yuen and Chor, 1998).

Representing sites of various purposes and activities, pedestrian streets became an approved urban commercial and recreational space in the second half of the 20th century (Gelber, 2003; Gehl and Gemzoe, 2004). They improved to accommodate and service a fair amount of stationary and walking pedestrians (pedestrians in motion). Sitting, standing, lingering and spending time are some of the other activities in addition to walking in such streets. Gehl (1987) exemplified Copenhagen’s Stroget as a successful instance of pedestrianisation and discovered that not only do people have good walking conditions there but also they sit, stand, linger and spend their leisure time there.

Therefore, human activity is revealed as a determining factor in improving the character (Gehl, 1987; Carmona, 2003) of a place with forms and meanings that can result in vitalizing and diversifying a place (Jacobs, 1993; Montgomery, 1998). They involve walking, standing and sitting as well as the possibility see, hear, talk and play. In fact, opportunities to contribute to various activities and to experience the surroundings depend on how city spaces are designed to facilitate basic human activities under good conditions (Gemzoe, 2006). Hence, while public life exists, people are triggered to participate in public spaces (Carr *et al.*, 1992) thereby increasing the liveliness of the area.

Liveliness comprises levels of activity - things going on; levels of use - participation; levels of interaction, communication, transaction and exchange; levels of representation - how activities, use and interactions project outwards and are discussed in the outside world. Therefore, liveliness is entirely associated with people and activities and it can be assessed by

measuring pedestrian flows and movements, the uptake of facilities and the existence or otherwise of 'things to do' (Montgomery, 2006). In this case, a lively street is defined as a place where people are engaged in a variety of stationary and sustained activities, particularly those activities that are social in nature (Mehta, 2006). According to Montgomery (1998), lively parts of the cities are those, which have more diversity and offer people diverse choices to use in different days and hours. He assured that, various user groups and activities are basic components of a lively and successful street.

A comprehensive body of research of various studies has examined the evolution of pedestrian street development in different countries such as Denmark, West Germany, the United States, but there has been limited work on pedestrianisation in Asian countries such as Malaysia (Yuen and Chor, 1998; Ja'afar and Usman, 2009). Among them, Ja'afar and Usman (2009), Shamsuddin and Sulaiman (2002) and Shamsuddin (2011) have done some studies on streets of Malaysia especially its traditional types.

In Malaysia, street or "Jalan" plays an important role as public open spaces (Shamsuddin and Sulaiman, 2002). It defines the characteristics of urban areas while residing plenty of overlapping functions (Shamsuddin, 2011) and also acts as the main element in enhancing the image and identity of the city apart from contributing to the morphology of a town (Ja'afar and Usman, 2009). Furthermore, cities in Malaysia accommodate social activities in the street. Occasional daily and periodic crowds of people are observed in many streets due to events such as the pasar malam (night market) which are usually hold once a week at night in several locations in the city, making the streets full of color and light (Shamsuddin and Sulaiman, 2002).

In this situation, this study aims to characterize the behavioral patterns, which cause street liveliness, using Meldrum Walk as an example of pedestrian priority streets in Malaysia.

2. Research Methodology

According to Shamsuddin (2011), observation is the main method of establishing the routine of local people over a cross section in a day. To classify activity spots and daily activity patterns from early morning until night, and by utilizing observation as the main method, this

study appraises what people do, and where, when, how and who indulge in the activities.

In collaboration with the current research the following two types of surveys- suggested by Gehl (2002) have been performed; 1.Counting pedestrian traffic in the selected street; 2.Stationary activities surveys (behavioral mapping) in the study area. In this study, pedestrian counting and walk by observation are the two major tools used for collecting the data.

As the pedestrian counting results are prepared in terms of hourly approximation (Gehl, 2002), researchers counted pedestrians twice every two hour (each time a 6-minutes period) and recorded the data. In relation to pedestrians' location- either east side or west side, in the street, they counted all pedestrians passing a randomly selected imaginary line in both North and South directions in one form. Traffic related to cars and even motorcycles moving in both directions were recorded in another form during the next 6-minutes period.

Pedestrian counting provides us the data on how walking is projected outwards in terms of frequency, direction, location and time. It includes the way a pedestrian street is used, the number of walking people and the condition in which the walking occurs in the area and different modes of traffic. It will explain the character of walking pedestrians presenting in the study area.

In the next stage, behavioral mapping in terms of walk by observation used to describe frequency, gender, age group and ethnicity of the sustained pedestrians, besides their social status -whether they are doing activities individually or as a member of a group. It will then continue by describing the activities that occur in the study area.

The researchers walked slowly in each study area and recorded the total number of stationary and social activities, the doer, the location and the postures. Three observations occurred during the daytime and three during the night. Observations were carried out between 10 am to 10:00 pm (once every couple of hours) and were spread out over three days, Friday, Sunday (weekend) and Thursday (weekday).

2.1 Meldrum Walk

Johor Bahru is located at the southern end of peninsular Malaysia and it is known as "The

Southern Gateway to Peninsular Malaysia". It is a multi ethnic city, and as a holiday and shopping destination for Singaporeans, Johor Bahru receives 60% of its foreign tourists from Singapore. In order to make the city centre more pedestrian friendly, a number of urban development projects in the city centre have recently been completed. Pedestrianisation of Jalan Meldrum, by narrowing the two-way street into a single-lane street with the accompanying pedestrian mall with outdoor cafes, is one of them. Meldrum Walk is located in the heritage district of Johor Bahru. On the importance of heritage districts, Gehl (1994) believed that being an historical part of the city can make an area more attractive while simultaneously recalling its history and the enjoyment of the present.

Jalan Meldrum is situated at the centre of an area once known as Wong Ah Fook village. It was designed as a pedestrian mall which provides an attractively landscaped passage for the benefit of both locals and tourists. Here, visitors can relax at the sidewalk cafes as well as be entertained by street artistes or cultural performances. This research studied the selected section of Meldrum walk that is located between Jalan Siew Nam and Jalan Siew Chin (Figure 1).

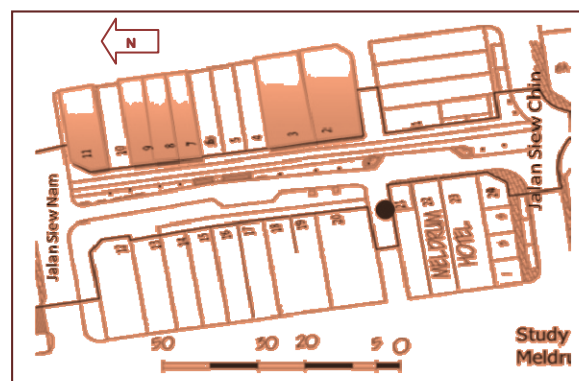


Figure 1: Selected section of Meldrum Walk
(Adapted from the Johor Bahru Central District Department Plan).

3. Result

Information gathered through behavioral observation, including pedestrian counting and walk-by observation, provided a snapshot of the street life. In order to determine the street liveliness this study tried to identify various activities which occur in Meldrum Walk in addition to walking and stationary pedestrians doing or participating in those activities. Based on pedestrians (motion/walking and sustained) and the activities they do in the street, this part will elaborate significant factors which lead to street liveliness.

After a short discussion on different modes of traffic in the study area, this part will continue with a description of walking pedestrians, sustained pedestrians, and an explanation of their characteristics.

3.1 Traffic Modes

As it is expected for streets in which the priority is given to non-vehicle movement, pedestrians patronized the study area more than the other two categories of car and motorcycle. Based on Table 1, Walking (75.3%) is the most popular mode of transportation in Jalan Meldrum, while both cars (11.7%) and motorcycle (13%) signify less than a quarter of traffic mode distributions. Cycling is not mentioned in this grouping because over the entire three days of observation, there were only two persons (less than 1%) cycling in this street.

Table1: Traffic modes distribution.

Mode of traffic	Frequency	Percentage
Pedestrian	1816	75
Car	281	12
Motorcycle	313	13
Total	2410	100

3.2 Walking Pedestrian

According to Gehl (2002), pedestrian traffic counts are essential for understanding how pedestrian usages differ during the day and evening hours. Pedestrian refers to walking pedestrian (pedestrian in motion) which is opposite from sustained/ stationary pedestrian.

3.2.1 Pedestrian Frequency

Table 2 represents that the average amount of walking pedestrians in each day (during twelve hours observation) is 6017 in Meldrum Walk. It means average of 501 persons participate in this street in each hour. This street is used by walking pedestrians during weekends, as the highest number of pedestrian recorded on weekend (7460 persons).

Table 2: Daily and hourly flow of pedestrians walking in Meldrum Walk.

Jalan Meldrum		Friday	weekend	Weekday
Pedestrian frequency		5200	7460	5500
Average	Pedestrian /day	6017		
	Pedestrian /hour	501		

3.2.2 Pedestrian Flow in Different Directions

Based on the street orientation, that is North-South, pedestrian flow recorded only in these two directions. Table 3 shows that the frequencies of pedestrians walking in both directions do not differ very much (8.2% difference).

Table 3: Average daily amount of pedestrian in Jalan Meldrum.

Direction	Average of pedestrian in each direction/day				
	Friday	Weekend	Weekday	Total	Percentage
South	2300	3330	2710	8340	45.9
North	2900	4130	2790	9820	54.1

3.2.3 Pedestrian Location While Walking

As it is shown in Figure 2, cafes’ tables and chairs are clustered in the East sidewalk. So to avoid these difficulties, pedestrians tend to use the western sidewalk for their movement.



Figure 2: East sidewalk; place for cafes’ tables rather than walking.

Recorded data on pedestrians’ location while walking in Jalan Meldrum shows that more than two thirds (67%) of the walking takes place in the West side which is unqualified for walking- inappropriate path width in some parts, existence of obstacles and lack of amenities for people to stay, rest or sit in a case they need. In this case pedestrians have some difficulties to use this part for walking (Figure 3).



Figure 3: West side of the Meldrum Street.

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3.2.4 Day time walking compared to evening

Figure 4 shows that in Jalan Meldrum, the average number of pedestrians in the weekday evening hours is 12% more than daytime, but on weekends (12%) and Fridays (4%), on average, more pedestrians were observed during the day than during the evening. Not even the hot weather was a daytime constraint as this area was utilized more during daytime on Fridays and weekends in comparison with evening.

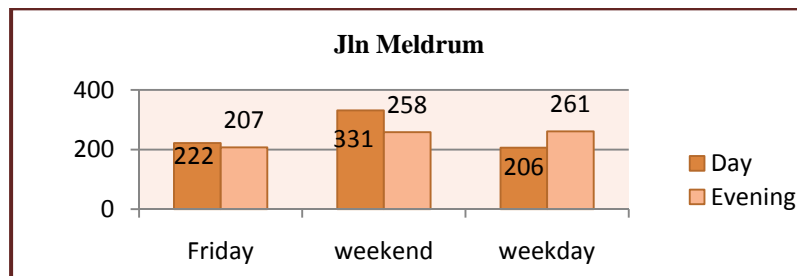


Figure 4: Average number of pedestrian/ hour during day and evening.

3.3 Stationary and Sustained Pedestrians

3.3.1 Pedestrians' Personal Characteristics

Of the total 2311 persons doing stationary and sustained activities over all three days, males constituted the majority of users (83%) in Meldrum Street while only 17% were females. This street does not fairly represent various age groups and a substantial proportion of pedestrians (36.8%) were young. Children have the lowest proportion among all groups. In terms of racial background, Chinese constituted the majority of pedestrians (63%) while others including Malay, Indian and other ethnics distributed fairly.

3.3.2 Stationary and Sustained Pedestrians

Pedestrians who participate in non-walking activity considered stationary (sustained) pedestrians. In Meldrum Walk, the majority of sustained pedestrians were observed on weekends. Density as an indicator of crowdedness and activeness consists of the average presence of people per square meter. The average density in this street is .05 persons per square meter (refer to Table 4). As people have more free time during weekends and majority of activities they involve have leisure characteristics, the area is livelier on weekends in comparison with other weekdays.

Table 4: People distribution in Meldrum Walk.

Total area (m ²)	Number of observed people					
	Friday		weekend		weekday	
	Fr.	Density	Fr.	Density	Fr.	Density
2413	749	0.05	938	0.06	638	0.05

Based on Table 5, on Fridays and weekdays, the total number of people participating in stationary activities in the mornings and afternoons was half of what this amount was in the evenings and nights. In essence, during weekdays, from morning until night, the number of people doing stationary activities in the area, increased regularly (from 10 Am to 10 Pm).

Table 5: Number of people engaged in some type of stationary activities.

Time	Day		Evening		Total
	frequency	Avg.	frequency	Avg.	
Friday	244 (33%)	81	505 (67%)	168	749
Weekend	392 (42%)	131	546 (58%)	182	938
Weekday	217 (34%)	72	421 (66%)	140	638

3.3.3 Stationary Activities in Pedestrian Streets

As it is shown in Figure 5, eating, talking and watching are the three most frequent activities that took place in this street (88.7%). Among the three main postures, a large number of people (76.9%) were actually sitting rather than standing or lying down on the benches. Other activities in this street include cooking, serving food, washing or cleaning, betting and loudly announcing the results, sleeping and hugging.

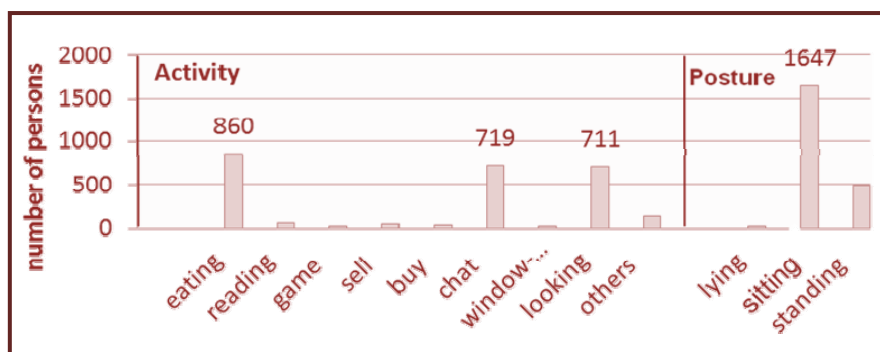


Figure 5: Various stationary and social activities and postures in Jalan Meldrum.

3.3.4 Social Status of Stationary Pedestrians

There is a high degree of socializing in Meldrum Walk because people spend more time on leisure and social activities. Moreover, the majority of users participate in groups rather than doing activities individually.

4. Discussion

The analysis presented here shows some opportunities and threats in Meldrum Walk and is based on the results of the behavioral observation survey in the form of walk by observation and pedestrian counting as elaborated in previous parts.

Walking is the preliminary goal of a pedestrian street and is the most observed traffic mode in this street. It occurs almost equally in both North and South directions. Pedestrians mainly use the west side of the street to walk. In order to have visual appropriation of both directions, it is essential to have visual attractions and focal points in both ends of the street. Therefore, in order to make their walking enjoyable, ease of movement and stipulation of amenities and other prerequisites for people to stay or rest on the street, especially in the western part, should be consider as well.

5. Conclusion

This study was an attempt to assess the liveliness level of Meldrum Walk in which priority has given to the pedestrians. As a more vibrant and livelier pedestrian street offers greater opportunities for optional and social activities, there is a need for a conscious attempt to elaborate the liveliness requirements and try to promote the street environment conditions.

According to the results in this study, the following suggestions are recommended:

1. In the context of Johor Bahru, where the study area is located, as the suburban areas are developed and shopping opportunities increase, people seldom go to the city center, and so proposing a wider range of activities and attractions besides walking, working and shopping activities for users of various age groups and capability is recommended.
2. Decision makers and developers should also focus on children, teenagers and other special groups such as old or disabled people, and it needs to make it easy for them to participate in a pedestrian street, which should to be inclusive and offer opportunities for all to stay and relax.

6. Acknowledgements

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