

Women's Perception of Safety in the City Street of Kuala Lumpur: The Covid-19 Impact

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ABSTRACT

The street is a vital public space for all in a city. It is the spine that connects to buildings, transportation nodes, public spaces like pocket spaces and other nodes for pedestrian. Sustainable Development Goals (SDGs) promotes the inclusivity for all. To achieve sustainability, street should be safe for all especially women who are a vulnerable group. As a public space, there are many restrictions implemented during the Movement Control Order (MCO) to curb the spread of Covid-19, therefore the livelihood, dynamic and safety is a concern for those who still needs to be on the street. Even though the city street is not as busy as before the pandemic, safety is still a main concern especially amongst women. This study is focusing on women's perception of safety in the street. This is always a concern as the pandemic has affected the economic sectors which in turn affects employment. Unemployment leads to crime which creates an unsafe perception. In order to evaluate the issue, a case study approach has been chosen and Jalan Tuanku Abdul Rahman in Kuala Lumpur is the area for this study. This study was performed through mixed method of in-depth interview, structured observation and questionnaire survey. Finding reveals that to enhance perception of safety for women, street design needs to consider both physical and social characteristic in the city. Pedestrian needs to use the street during the pandemic, and therefore findings from this study could assist policy maker and designer in developing framework for a safer street.

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1. Introduction

It is reported that crime index has drop by 57.4% since the implementation of MCO in Kuala Lumpur as reported by Police Department (Thestar, 2020). There is a correlation between unemployment and the Covid-19 pandemic (UN, 2020) and in turn unemployment leads to increasing crime as mentioned by Bukit Aman Criminal Investigations Department (Malay Mail, 2021). Urbanization and population density has been associated

with crime rate and poverty is one of the major cause of crimes (Soh, 2012).

Crime is associated with fear and perception of safety affecting people either after having experienced it or not. It is a complex issue which is addressed by the government where the intention is to increase the perception of safety. Women are categorized as a vulnerable group. However, their presence in the city is increasing due to better education, better health care and more

employment opportunities. Their presence in the city contribute to demographic changes and at the same time expose them to

safety issues. Department of Statistic Malaysia (DOSM), estimated the increase of female population in 2021 as shown in Table 1.

Table 1 Population by sex in Malaysia 2020 & 2021 (source: DOSM, 2021)

Male	Female
<ul style="list-style-type: none"> • 16.77 million (2021) • 16.76 million (2020) 	<ul style="list-style-type: none"> • 15.88 (2021) • 15.82 (2020)

There is an increase in overall population to 32.66 million for the second quarter of 2021 (DOSM, 2021) in Malaysia including citizens and non-citizens. In terms of age group for women, it is estimated that there are 3.63 million (0-14 years), 11.01 million (15-64 years) and 1.25 million (65 and above). According to DOSM (2021) women at age 60 years are also expected to live longer than men (21.8 years). Kuala Lumpur and three other states were projected with higher live expectancies (DOSM, 2021). It is therefore important to consider gender perspective in urban design and planning as well as crime-related issue.

2. Covid-19 in Malaysia and Impact On A City

Street is part of public space (Appleyard, 1980) and a vital organ of a city. It is used for many activities including social and economic ones. As one of the important elements in the city is the street, it is a circulation route, public space and built frontage (Marshall, 2005). The needs of public space are even greater during the pandemic to fulfill the requirement for social distancing or physical distancing (UN, 2020). Some of the current city streets are based on existing street which have been developed since pre-war. With the pressure and worry about health due to Covid-19, access to public space is crucial. A good quality street does not only serve as a thoroughfare but a public realm where pedestrian could walk in comfort and safe.

Kuala Lumpur as the capital city of Malaysia derived from a town with dominant street pattern and urban morphology. There is still evidence of the old charm through its urban fabric with small grains, high street and shop houses. The city centre like Jalan Tuanku Abdul Rahman is well known as a business hub ranging from textile to shopping malls and offices in one stretch of the street. There is diversity of building that operates from morning until night time. Besides the unique prewar buildings, activities such as ‘pasar malam’ and street performer contributes to the dynamic and vibrancy of the street. The street is associated with high pedestrian volumes daily, on weekend and during festive seasons.

However, when Covid-19 hit the country, it does not only affect health and wellbeing but also the activities and vibrancy of the city. With the Movement Control Order (MCO) was imposed, only essential services were allowed and slowly new rules were given for other business to operate but with limited operating hours. The imposed MCO 1.0 in 18th March 2020 affected the spatial level of the street.

Due to high density of housing blocks nearby, the rise of positive Covid-19 cases occurred led to the stricter EMCO in the area. The implementation of the EMCO not only affected the residents but also business activities nearby and along Jalan TAR.



Figure 1 Closure of Jalan Melayu during (source: Berita Harian, 2020)

Jalan Melayu is connected to Jalan TAR at the south end and it is a path for pedestrian towards the Masjid Jamek LRT Station and also many business activities. As shown in Figure 1, the street was closed due to the enforcement of EMCO. The city centre which used to be busy with vehicles and pedestrian walking on the street and rushing to transportation hub has stopped for a while during MCO 1.0. It was highlighted that Jalan Tuanku Abdul Rahman, Kuala Lumpur which used to be crowded before the pandemic, were less crowded due to this event (Thestar,

2020) and Malay Mail (2021). It took some time for businesses, especially small ones to recover (DOSM, 2020). As a city used to receive pedestrian frolicking in its space, it is now has become silent and less vibrant at night. People on the street is associated with ‘eye on the street’ (Jacobs, 1961) which contribute to natural surveillance. However, if there are less people being on the street, the city is less observed and will in turn affect safety. Even though employers are encouraging to allow their employee to work from home, there are still some sectors that needs to

work as normal and some group of pedestrians still using the street.

There are studies suggesting the intervention during the pandemic such as flexibility of public space, well connected street and agile public space (Archdaily, 2021). There are some guidelines which have been prepared for street during the pandemic as shown in Table 2.

Table 2 International guideline related to Covid-19 and public space

Organization	Guideline	Related contents
National Association of City Transportation (NACTO)	Streets for Pandemic Responses and Recovery	Street is seen enhancing safe access for other health facilities, food and essential services and social services.
OECD Policy Responses to Coronavirus (Covid-19) (2020)	Cities Policy Responses	Comprehensive policy at spatial level
UN Habitat (June 2020)	UN-Habitat Guidance on Covid-19 and Public Space	Effective urban response related to public space with medium and long term intervention
Local Government Association UK (2021)	Town Centre Checklist: A self-assessment tool	Including streetscape and public realm

Based on the table above, consideration on street and public space has been given attention at international level. Local Government Association UK (2021) provided a toolkit for guidance on responding to the Covid-19 pandemic. It includes the pre recovery and recovery plan as well as transformation or revitalization. However, there is yet to be found guideline at local context in Malaysia in relation to street or public space.

2.1 Perception Of Safety And The City Street

2.1.1 Perception

Urban environment has been associated to influencing perception (PPS, 2019) and it could enhance perception of safety including mixed use, street performer and activities (Park et al, 2018) as well as creating a negative ambience if the urban environment is not well designed or maintained or associated with disorder (Kelling & Wilson, 1982).

Perception of safety is related to psychological process with various stimuli around human being. It is an issue related to victims (Carmona et al, 2003) while crime is about offenders and offence. Perception is also a complex experience for each

individual. The way we perceive our environment is different and so does gender differences. Therefore, in designing a city street, both aspects should be considered. As a vulnerable group, women perceived the environment differently (Canterbury Well Being Index, 2021 & PPS, 2019) compared to men as women are more fragile. Women consider or assess based on their thinking and their demographic background.

Many theories have been developed in reducing or removing the opportunity for offender (crime) and ways to improve perception of safety such as 'eyes on the street' by Jane Jacobs (1961), Oscar Newman (1972) on Defensible Space and Bill Hillier on the space integration and access. Previously, the Malaysian government had put in effort on increasing perception of safety (PMO, 2013), and many initiatives were designed to create an inclusive city. Many initiatives have been implemented in reducing crime and increasing perception of safety as such introduction of Safe City Program Strategy, implementation of Crime Prevention Through Environmental Design (CPTED), Women's Awareness Campaign, Safety Perception Survey (PMO, 2013), Omnipresence Program and many others.

As discussed earlier, currently business operations are limited and only selected types of business are allowed to operate, and this affects the use and ridership of public transportation (UN, 2020). This situation leads to a proposal for more sustainable mode of transportation which is biking and walking. But in some areas, dependence on public transport is still a need and walking to transportation nodes is part of the movement pattern.

As the new norm is adopted due to the pandemic, less activities occur and less people are on the street. The perception of safety is still relevant even though during a pandemic as pedestrians still need to use the city space, public transportation and such things. Therefore, consideration on perception of safety is crucial as there have been some changes in the livelihood and vibrancy of the city.

2.1.2 Physical Characteristic

Streets and sidewalks are connected to ground floor of buildings that make public realm. This is an important space for pedestrian apart from the buildings. The street is the spine of the city and connectivity and accessibility is part of the factors for making the street safer. The street should be connected from the main street to the side lane and back lane. It should also need to be accessible (Lynch, 1981) for pedestrian and free from obstruction. During the pandemic, there are some areas which are not fully accessible (Martinez et al, 2021), therefore there should be some intervention to make the street and other public spaces safe especially at night where there are less pedestrians.

Ground floor which provides public space and activity for pedestrians is achieve especially in an area with diversity of buildings or mixed use. Some buildings create a clear demarcation for the public to access and navigate as the buildings are connected to transportation hub such as light rail transit. With the imposition of the MCO, some of the ground floor activities and access might be affected. The situation will

get even worse if the location is an important node for activities or transportation. Building frontage does also enhance perception by having a window or opening. It will allow for surveillance to happen. This situation affects the way pedestrians use and walk in the city.

Lighting is one of the most influential factors in perception of safety (Fotios et al, 2015 & Park & Garcia, 2020). Lighting is provided on the street and the buildings, and poor lighting quality will make the street look unsafe especially when there are less pedestrians around. Good lighting will assist pedestrians to navigate and as way finding (Carmona et al, 2003). As sources of lighting derives from buildings and statutory lighting (Carmona et al, 2003), the closure of businesses and building affect lighting quality in the streets. Maintenance of the buildings and street is also crucial as it create a negative environment which could trigger negative behavior such as vandalism and crime. This could accelerate when the city space is less occupied especially during the pandemic.

2.1.3 Social attributes

A city is comprising of urban form and people who use the city space, with people who are the pedestrians. Demographic is an important factor in perception of safety, and different demographics react differently. Besides that, demographic component does contribute to perception. This includes gender, age, occupation and level of education. The other component is migrants especially male ones where they not only change the demographic component in the economic sector but also affect perception. International migrants were being reported in Kuala Lumpur from 2014-2015 at 67% as mentioned in the Draft of Kuala Lumpur Structure Plan 2040. DOSM (2021) reported 2.69 million non-citizens in Malaysia. Besides demographic, social incivilities such as homeless, drug addicts and mentally ill also contribute to perception of safety. It is therefore important to study the relationship of the city especially the street and the perception of safety. This study is focusing on women as the unit of analysis.

3. Methodology

The case study approach (Yin, 2008) was adopted for this study in investigating contemporary event (Yin, 2008) and mixed method was performed to evaluate this complex issue. This approach allows for an in-depth study (Crowe et al, 2011). Jalan Tuanku Abdul Rahman (Jalan TAR) in Kuala Lumpur is selected as the case study as it is a unique street, high street and a traditional street as well as important business area in the city which is connected to transportation nodes.

3.1 Description of Study Area

This section describes the study area which is Jalan Tuanku Abdul Rahman, Kuala Lumpur. Figure 2 shows the strategic location in the city centre.

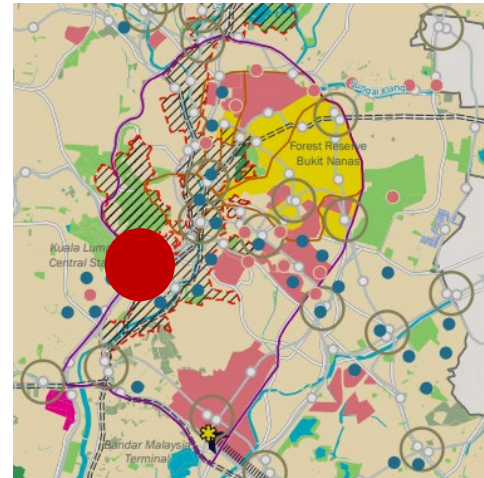


Figure 2 Location of Jalan Tuanku Abdul Rahman (source: Draft Kuala Lumpur Structure Plan 2040).

Jalan TAR is situated in the heart of Kuala Lumpur and among the earliest streets in the city. It is an important street in terms of history and a dominant business area.

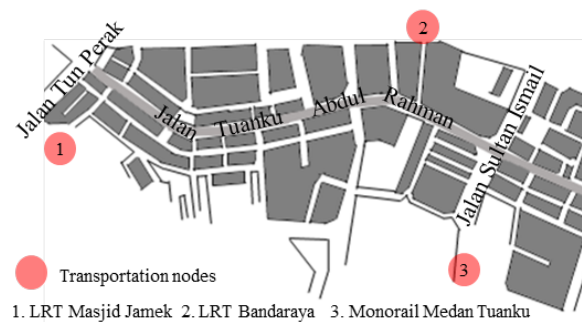


Figure 3 Case study area: Jalan Tuanku Abdul Rahman, Kuala Lumpur

Jalan TAR (Figure 3) and its surrounding was evaluated together with Jalan Tun Perak until Jalan Sultan Ismail. The justification of choosing this area as the case study is due to its location which is along this stretch, and there are two major transportation nodes which are the LRT station and the Monorail station.

3.2 Data Collection

The primary data is from in-depth interview, structured observation and questionnaire survey. Respondents for in-depth interview were selected among those who were working around Jalan TAR with diverse background and age. Thirteen respondents participated in this study (saturation point). Semi-structured interview questions were prepared for the interview.

Table 3 Observation procedure

Time	Weekdays and Weekend (8.00am-10pm)
<ul style="list-style-type: none"> Behavior Visual 	<ul style="list-style-type: none"> Number of pedestrian and activity Street and building

In order to assess and evaluate the problem of safety, observation was conducted at selected location from morning until nighttime including weekdays and weekends for three weeks. It was divided into two categories which included behavior and visual (Table 3). Location for observation were determined based on activity nodes and transportation nodes. Photographs and notes were used during data collection.

Questionnaire survey was distributed among pedestrians with n=400 of respondent (convenient sampling). Questions were categorized into; demographic, physical and social characteristics that affect perception as well as personal experience related to safety. Self-administered questionnaire surveys were conducted during weekdays and weekends during one month with trained four numbers of numerator. Data analysis were processed in IBM SPSS (Version 25). Data from both findings were compared and triangulated.

3.3 Findings and Discussion

3.3.1 Physical characteristic

Figure 4 reveals physical characteristic which was categorized according to street design, building and maintenance based on questionnaire survey. It shows that majority of respondents agree that physical elements affect perception of safety (above 90%).

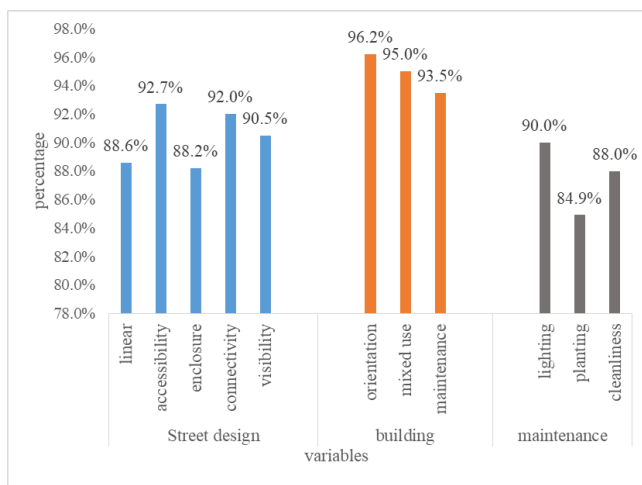


Figure 4. Questionnaire survey result on physical characteristic

Accessibility is one of the important aspects of the street as public space where 92.7% respondents agree that it affect perception of safety. However, during observation it was found

that accessibility is limited due to the pandemic. Areas which are previously accessible are no longer accessible for pedestrian due to building closure. There is another choice of route for pedestrians but it is not covered and exposed to traffic. Some of the buildings provide access or short cut to transportation nodes such as Bandaraya LRT station through the Sogo shopping complex.

Connectivity is part of walkability elements that needs to be given attention where most respondent (n=92%) agree that it enhances perception. The main street is connected to other secondary access such as side lane and back lane where the location of other public space is located such as the parking area.

The most obvious findings were the building which were not occupied due to the restriction of business operating hours or buildings which were totally vacant. Some of the buildings such as Maju Tower which is a mixed development has already been vacant for the past few years. Due to the pandemic, the area became more deserted where there were no ground floor activities which could enhance the livability. The pedestrian bridge which is located next to this vacant ground floor does not look inviting and safe and this was supported by respondents who mentioned that they avoided using the pedestrian bridge.

Building orientation is the highest perceived factor (96.2%) that contributes to feeling safe. It provides access and building frontage which used to be part of surveillance were becoming lesser due to limited business that was open. Based on observation it was found that the newly renovated building also could not contribute to enhanced safety and surveillance due to the pandemic.

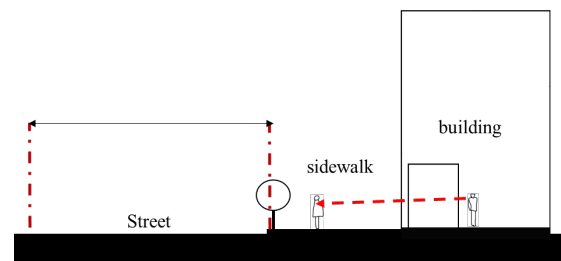


Figure 5. Building orientation and surveillance

Jalan TAR with its diverse types of building and business activity is different from what it is used to be. Data from observation shows that only certain business are occupied. Food related business are allowed to operate until 8.00pm while others close their shop earlier due to lack of shoppers. This situation affects the livelihood of businesses of the area. As natural surveillance is depending on the presence of pedestrian involves around building, the more buildings that are allowed to operate will allow more surveillance (Figure 5). This is supported by questionnaire survey findings (n=95%).

Maintenance of the street and building is considered as important factor in enhancing perception of safety (Figure 4). Findings shows that this part of Jalan TAR is still maintained by the City Hall and private owners where the sidewalk and streets

are clean. One of the reasons is due to the lack of activity and lack of business, and as such some part of parts the street appears clean and comfortable. At the same time, lighting is something that needs to be upgraded due to visibility factor. Some parts that lead to light rail transit need to be improved in terms of quality and maintenance (obstruction from trees). Interview respondents highlight that the color of the lights needs to be improved to enhance visibility.

3.3.2 Social Attributes

When the Movement Control Order was lifted, some activities were allowed including business operations. Due to the pandemic, some of the economic sectors were affected and led to a different ambience at Jalan Tuanku Abdul Rahman. One of the aspects which was observed was the use of the street including activity and pedestrian movement.

The result of this study shows the physical characteristic of Jalan TAR which was restricted had affected the behavior pattern and activity which previously used to be very dynamic and vibrant. Table 4.0 illustrates main findings from both techniques. The main street which is the spine has become less congested and safer for pedestrians to cross and less vehicles parked on the street to unload or load stuff due to some business closure. The sidewalks being among the most significant character of Jalan TAR was also affected where less pedestrians were walking around or sitting. Previously, some of the areas which were considered as crowded by respondent, but during this pandemic it was less crowded. For some respondents the reduced pedestrian was considered unsafe due to fear of likelihood of crime where no one would help or bear witness.

Table 4 Comparison between two techniques

Physical characteristic	Interview	Visual Observation
Main street	Less people on the street	Less people Less vehicles
Sidewalks	Less people	Less people No typical activities (as per pre Covid-19)
Building use	Closure of many shops	Temporary close Permanently close Limited operating hours Accessibility
Lighting	Less lighting from some shops	Street lighting Building
Maintenance	Building Street	Sidewalk are maintained Trees are maintain

Table 4 highlights the comparison between two techniques where it is related to each other. The closure of buildings affecting the numbers of pedestrian on the street, activities, and affecting the quality of lighting. Some of the activities are still not allowed to operate even when current MCO has been implemented. Therefore, it changes the landscape of social interaction in the area.

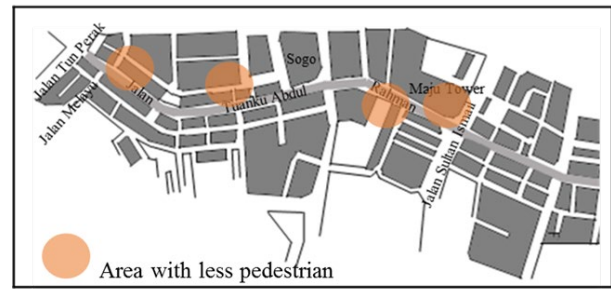


Figure 6.Area with less pedestrian are observed walking at night

Observation on the numbers of pedestrians who used the street was performed and it was found that there were four locations which were less occupied as shown in Figure 6. These locations used to record high number of pedestrians due to a variety of business activities, restaurants and shopping opportunities. The middle section of the streets was normally occupied from morning with loading and unloading activities, shoppers and pedestrian. However, during the pandemic, even during the Recovery Movement Control Order (RMCO) starting from 10th June 2020 until 31st March 2021 there was still less pedestrian. Some pedestrians who used the area were only those who passing by and walking to nearby bus stop or LRT station.

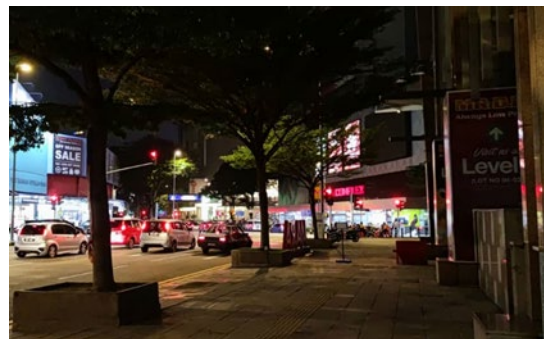


Figure 7 Empty street in front of Mara (source: fieldwork, 2021)

The sidewalk along the new Mara building (Figure 7) were less vibrant and less pedestrians compared to before the pandemic. This was related to business operation where only one fast food chain was operating until 10.00 pm with other businesses either temporarily or permanently closed. This situation created an empty ground floor, empty sidewalk and lack of surveillance. The hotel lobby which was part of the building is also restricted in terms of accessibility where it used to be connected to the public space inside the Mara building. It used to be a shared space for guests of the hotel, pedestrians who passed by or using the building which attached next to it. This is relevant with what has been observed by other researchers in Western countries during the pandemic, where restriction order has limited accessibility to public spaces.



Figure Activity on the sidewalk (source: fieldwork, 2021)

The above Figure 8 shows that few shops were closed even during school holidays which was different compared to pre pandemic scenario. This is one of the junctions with high number of pedestrians, but the junction that leads to Jalan Mara is now less interesting and less vibrant. Even the number of vehicles on the main street was much lesser than before. This was supported by an interview respondent who mentioned that the lack of other pedestrians made it felt unsafe.



Figure Medan Tuanku (source: fieldwork, 2021)

Medan Tuanku (Figure 9) which used to be active with street activities along the sidewalk and restaurants were now empty. This is one of the important paths as there are two parking areas at the back and Medan Tuanku is connected to Maju Tower and the main street.



Figure 10 Pre Covid-19 environment in front of Sogo (source: fieldwork, January, 2020)

The public space in front of Sogo (Figure 10) which used to be an outdoor space for pedestrian to sit and watch street performer has changed. The above figure shows the environment then where pedestrians were free to utilize the space until night time. The area is fully occupied with no

restriction on physical distancing. This kind of street activities occurring until night time and with presence of the police.



Figure 11 Main entrance of Sogo (source: google street view, December 2020)

Findings from observation revealed a stark contrast between pre and post Covid-19 in front of Sogo (source: google street view, December 2020). There was no more street performer and disabled people who occupied the sidewalk. Physical distancing which was imposed created a different atmosphere to a once vibrant public space.



Figure 12 Sidewalk before the pandemic (source: fieldwork, January 2020)

Active use of sidewalk before the pandemic where pedestrian walked from other areas or buildings to Pertama Complex sidewalk and stop to get some food and drinks. (Figure 12). This is an example of sidewalk which are covered, provided with benches, activities from the stalls which are diversified and comfortable for pedestrian. It used to be among the highest numbers of pedestrian during weekdays and weekends. Respondent highlighted that this is one of the areas that is perceived as safe.

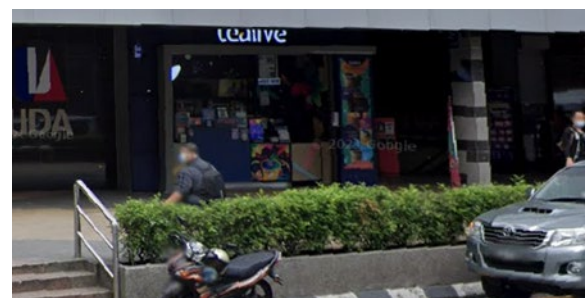


Figure 13 Sidewalk during the pandemic (source: google street view, December 2020)

Pertama Complex sidewalk is one of the lively areas for pedestrian where food stalls on the ground floor create a dynamic and active space. However, after Covid-19, even though the stalls were still operating, it was observed that there were less pedestrians strolling along (Figure 13). Food which used to be an attraction in public space was now just a necessity where pedestrians were not allowed to sit on the benches along the sidewalk or only limited to few. A respondent who worked around the area mentioned that the ambience now made them to feel different even though they were familiar with the environment. This finding shows that built environment is useless without human activity and without presence of users.



Figure 14 Jalan TAR become an empty street (source: BERNAMA, 2021)

Due to another restricted movement order in the country, the street once again became less vibrant and less activities being held as shown in Figure 14, where the junction between Jalan TAR and Jalan Esfahan was empty. This is an area which used to be busy with traffic, pedestrian on the sidewalks, business and street activities. However, there are still some business activities that are allowed and therefore making the area become less attractive due to the lack of activities. Respondents highlighted that this scenario makes them feel unsafe as they have to walk in an area with less surveillance.

Walking further down towards the Southern part which connects to Jalan Melayu and Jalan Tun Perak demonstrate the same findings where less buildings are occupied, with less activities on the street and also less pedestrians. This is one of the important nodes leading to Masjid Jamek LRT station and a few parking spaces.

It clearly reveals that the life of the street is the pedestrian and activities around it. It is related to buildings in which the more diversified (mixed use) it is, the livelier it will be and enhance the perception of safety. It should be noted that even though it is a pandemic period, there are still pedestrians especially women who are using the street from morning until nighttime throughout the week. With the new norm, social distancing and limited numbers of people are allowed to work at certain time in particular sectors, there will be women who need to walk alone. This situation creates unsafe and fragile environment for women. Therefore, perception is still a major concern amongst them which need consideration from policy maker, Local Authority, consultants and those involved in creating and designing a city street.

4. Conclusion

Based on the findings, it is concluded that the physical characteristic of the city does influence the way women as pedestrians perceive their safety. The use and choice of many public spaces is also limited and decreases the choice for pedestrians to move around. Accessibility used to provide choices and also short cut from one space to another and now pedestrians are forced to use other paths or routes.

Another element is the building where without buildings that are functioning, there is no activity at the street level that makes the city alive. Activities on the street which is associated with livability and character of Jalan TAR is no longer dominant. Positive activity could enhance the perception of safety with presence of other pedestrian. Due to this issue, enhancement of the visibility at night especially in area with less pedestrians are crucial as the city is still alive and struggling to sustain itself.

Future development of new township should be prepared to consider a built environment which is safe in various conditions; either with or without pandemic. Public participation is needed and gender perspective is crucial in when it comes to safety issues.

Due to limited literature on relationship between Covid-19, street and urban design, this study is only focuses on certain elements. However, it does reveal the importance of maintaining the built environment for sustainability before and after the pandemic as the street is still a public space for all.

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References

- Appleyard, D. (1980), *Liveable Streets; Protected Neighborhood*, The Annals of the American Academy of Political and Social Science *Changing Cities: A Challenge to Planning* (Sep., 1980) 451: 1
- Archdaily.com (2021), *12 Key Principles for an Effective Urban Response during COVID-19*, retrieved from www.archdaily.com. Accessed date 7th July 2021.
- Canterbury Well Being Index, (2021), *Perceptions of Safety*, retrieved from www.canterburywellbeing.org.nz
- Carmona, M., Heath, T, Oc, T. & Tiesdell, S. (2003), *Public Places-Urban Spaces: The Dimensions of Urban Design*, Architectural Press.
- Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC medical research methodology*, 11: 100. <https://doi.org/10.1186/1471-2288-11-100>

Department of Statistic Malaysia, (2020), Report of Special Survey on Effects of Covid-19 on Companies and Business Firm (Round 1). Retrieved from www.dosm.gov.my Accessed date 2nd July 2021.

Department of Statistic Malaysia, (2021), Demographic Statistics Second Quarter 2021, Malaysia. Retrieved from www.dosm.gov.my Accessed date 2nd July 2021.

Fotios, S. A., Unwin, J., Farrall, S. (2015). Road lighting and pedestrian reassurance after dark: A review. *Lighting Research & Technology*, 47: 449-469. doi:110.1177/1477153514524587

Jacobs, J. (1961), *The Death and Life of Great American Cities*, Random House USA Inc, New York, United States.

Kelling, G.L & Wilson, J.Q, (1982), Broken Window Theory, *Atlantic Monthly* 249, March 1992 Issue, retrieved from www.theatlantic.com. Accessed date 6th July 2021.

Lynch, K. (1981), *A Theory of Good City Form*, MIT Press, Cambridge.

Malay Mail (2021), Addressing problem faced by rakyat struggling to make ends meet is the way to reduce crimes, retrieved from www.malaymail.com. Accessed date 1st July 2021.

Malay Mail (2021), MCO 3.0: Restaurants on 'deserted' Jalan Tuanku Abdul Rahman and its vicinity find it harder going this time round, retrieved from www.malaymail.com Accessed date 1st July 2021.

Marshall, S. (2005), *Streets and Pattern*, Spon Press, New York

Martínez, L.; Short, J.R. (2021), The Pandemic City: Urban Issues in the Time of COVID-19. *Sustainability*, 13: 3295. <https://doi.org/10.3390/su13063295>

Montmayer, C & Haladjian, H.H (2017), Perception and Cognition Are Largely Independent, but Still Affect Each Other in Systematic Ways: Arguments from Evolution and the Consciousness-Attention

Dissociation

Newman, O. (1972), *Defensible Space: Crime Prevention Through Environmental Design*, Macmillan Publishing.

Park, Y. & Garcia, M. (2020) Pedestrian safety perception and urban street settings, *International Journal of Sustainable Transportation*, 14:11, 860871, DOI: 10.1080/15568318.2019.1641577

Prime Minister Office, (2013), *Reducing Crime*, retrieved from www.pmo.gov.my Accessed on 2nd July 2021.

Project for Public Space, (2019) *The Key to Safe Streets: Five Cities Humanizing Street Design*, retrieved from www.pps.org. Accessed on 1st July 2021.

Soh, MC, (2012), Crime and Urbanisation: Revisited Malaysian Case, *Procedia - Social and Behavioral Sciences* 42 (2012): 291 – 299

Local Government Association UK (2021), *Revitalising Town Centre: A Toolkit for Council*, retrieved from www.local.gov.uk

Thestar.com.my (2020), Crime rates down in KL during MCO, say police

United Nations (2020), Policy Brief: COVID-19 in an Urban World, retrieved from www.un.org

UN Habitat (2020), *UN-Habitat Guidance on Covid-19 and Public Space*. Retrieved from www.unhabitat.org

Yin, R (2008), *Case Study Research: Design and Methods*, Sage Publications