



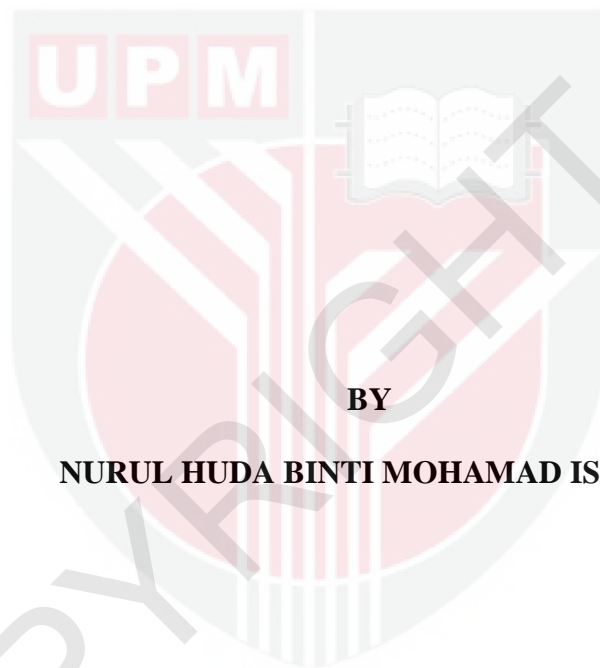
**UNIVERSITI PUTRA MALAYSIA**

***COMMUNITY PERCEPTION AND ASSESSMENT ON PUBLIC TOILET  
AT KTM COMMUTER AREAS IN KUALA LUMPUR***

**NURUL HUDA BINTI MOHAMAD ISHAM**

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FPSK4 2020 52**

**COMMUNITY PERCEPTION AND ASSESSMENT ON PUBLIC TOILET AT  
KTM COMMUTER AREAS IN KUALA LUMPUR**



**BY**

**NURUL HUDA BINTI MOHAMAD ISHAM**

**Thesis submitted in fulfilment of the requirement for the degree of Bachelor  
Science (Environmental and Occupational Health) from the Faculty of Medicine  
and Health Sciences, Universiti Putra Malaysia.**

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## ABSTRACT

### COMMUNITY PERCEPTION AND ASSESSMENT ON PUBLIC TOILET AT KTM COMMUTER AREAS IN KUALA LUMPUR

NURUL HUDA BINTI MOHAMAD ISHAM

**Introduction:** Public toilet is a toilet located at public places, used by the public to urinate and defecate. It is important as it helps to prevent communicable disease that can be spread by microorganism or parasites in the faeces. In Malaysia, public toilet does not only serve for sanitation purposes but also important as an image of the country as well. The Association South East Asian Nation (ASEAN) Public Toilet Standard and Malaysian Standards for Public Toilet Malaysia has widely used as guidance to the local authority. However, some of public toilets in Malaysia are still far behind from achieving clean and attractive toilet. It has unpleasant smell with broken and incomplete basic facilities. As concern, there is a limited study on community perception and assessment of public toilet in Malaysia. **Objectives:** The purpose of this study is to determine the community perception and assessment on public toilet in Kuala Lumpur. **Methodology:** A cross-sectional study design was used which focused on the public transport user specifically *Keretapi Tanah Melayu* (KTM) Commuter user. Nine KTM Commuter public toilets were selected through purposive sampling from the list of KTM Commuter in Kuala Lumpur. Respondents (n=112) were obtained through convenience sampling with the required inclusion and exclusion criteria. A modified questionnaire was used to determine a) sociodemographic characteristic of respondents, b) general question about public toilet, c) experience using public toilet facilities in Kuala Lumpur, d) perception about public toilet, e) assessment on public toilet f) suggestion for improvement on public toilet in Kuala Lumpur. Data obtained were analysed using SPSS Version 25.0. **Results and Discussion:** The study found that 73.2% of community shows moderate perception on public toilet in Kuala Lumpur. They strongly agreed that improvement is needed in term of maintenance and safety. Meanwhile, 58.9% of KTM Commuter public toilet passed the assessment while the others did not pass due to presence of bad smell. However, there is no association ( $p>0.05$ ) between the perception and assessment. This concludes that even though community has moderate perception, the public toilet still passed the assessment showing how the public toilet has improved. **Conclusion:** Respondents mostly suggested that public toilet user is the most responsible for the cleanliness of public toilet. Therefore, further studies can be done to assess the attitude and practice of the public when using public toilet.

**Keywords:** public toilet, community, perception, assessment

## ABSTRAK

### PERSEPSI DAN PENILAIAN MASYARAKAT TERHADAP TANDAS AWAM DI KAWASAN KTM KOMUTER DI KUALA LUMPUR

NURUL HUDA BINTI MOHAMAD ISHAM

**Pengenalan:** Tandas awam adalah tandas yang terletak di kawasan awam, digunakan oleh orang awam untuk membuang air kecil atau air besar. Ia penting kerana ia membantu menghalang penyakit berjangkit yang boleh merebak melalui mikroorganisma ataupun parasit di dalam najis. Tandas awam di Malaysia bukan sahaja untuk keperluan sanitasi malahan ia juga penting untuk imej sesebuah negara itu sendiri. Piawaian Tandas Awam Persatuan Negara- Negara Asia Tenggara (ASEAN) dan Piawaian Malaysia untuk Tandas Awam Malaysia telah digunakan secara meluas sebagai panduan kepada pihak berkuasa tempatan. Walaubagaimanapun, sebahagian dari tandas awam di Malaysia masih jauh dari mencapai tandas yang bersih dan menarik. Ia mempunyai bau yang busuk dan tidak menyenangkan, serta kemudahan yang rosak dan tidak lengkap. Terdapat kajian yang sangat terhad tentang persepsi dan penilaian masyarakat terhadap tandas awam di Kuala Lumpur. **Objektif:** Kajian menggunakan reka bentuk keratan rentas telah digunakan di mana fokusnya adalah pengguna pengangkutan awam khususnya pengguna KTM Komuter. Sembilan tandas awam KTM Komuter yang dipilih dalam kajian adalah dengan menggunakan teknik persampelan bertujuan daripada senarai KTM Komuter yang diperolehi dari laman web KTM Komuter. Responden (n=112) telah diperolehi melalui teknik persampelan mudah dengan kriteria kemasukan dan kriteria pengeluaran yang diperlukan. Sebuah set soal selidik yang diubahsuai telah digunakan untuk menentukan a) ciri- ciri sosiodemografik responden, b) soalan umum tentang tandas awam, c) pengalaman menggunakan tandas awam di Kuala Lumpur, d) persepsi tentang tandas awam, e) penilaian tandas awam dan d) cadangan penambahbaikan tandas awam di Kuala Lumpur. Data telah dianalisis dengan menggunakan SPSS Statistik 25.0. **Keputusan dan Perbincangan:** Kajian mendapati 73.2% masyarakat telah menunjukkan persepsi yang sederhana tentang tandas awam di Kuala Lumpur. Mereka sangat setuju bahawa terdapat keperluan untuk menambahbaik dari segi penyelenggaraan dan keselamatan tandas awam. Sementara itu, 58.9% tandas awam KTM Komuter lulus penilaian manakala yang lain tidak lulus kerana terdapat bau busuk di dalam tandas. Walaubagaimanapun, tiada perkaitan ( $p>0.05$ ) antara persepsi dan penilaian masyarakat tentang tandas awam. Hal ini menunjukkan bahawa walaupun masyarakat mempunyai persepsi sederhana, tandas awam KTM Komuter masih melepasi penilaian yang menunjukkan bahawa tandas awam di Malaysia telah bertambah baik. **Kesimpulan:** Tiada perkaitan antara persepsi dan penilaian masyarakat. Kajian lanjutan boleh dilakukan untuk menilai sikap dan amalan tentang penggunaan tandas awam kepada pengguna tandas awam di Kuala Lumpur. Selain itu, penilaian yang lebih mendalam boleh dilakukan untuk menyiasat ruang penambahbaikan tandas awam di Malaysia.

**Kata kunci:** tandas awam, komuniti, persepsi, penilaian

## TABLE OF CONTENTS

<b>DECLARATION</b>	<b>Page</b> <b>ii</b>
<b>SIGNATURE OF SUPEVISOR/ INTERNAL EXAMINER</b>	<b>iii</b>
<b>ACKNOLEDGEMENT</b>	<b>iv</b>
<b>ABSTRACT</b>	<b>v</b>
<b>ABSTRAK</b>	<b>vi</b>
<b>CONTENTS</b>	<b>vii</b>
<b>LIST OF TABLES</b>	<b>xii</b>
<b>LIST OF FIGURES</b>	<b>xiii</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xiv</b>
<b>LIST OF APPENDICES</b>	<b>xv</b>

### CHAPTER 1: INTRODUCTION

1.1	Background	<b>1</b>
1.2	Research Justification	<b>3</b>
1.3	Problem Statement	<b>5</b>

1.4	Conceptual Framework	9
1.5	Research Question	10
1.6	Hypothesis	10
1.7	Objectives	11
1.8	Definition of Terms	12

## **CHAPTER 2: LITERATURE REVIEW**

2.1	Definition of Public Toilet	15
2.2	Public Toilet in Malaysia	16
2.3	The need of public toilet	17
2.4	Program related to public toilet in Malaysia	20
2.5	Perception on Public Toilet	22
2.6	Assessment of Public Toilet	23

## **CHAPTER 3: METHODOLOGY**

3.1	Study Location	24
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3.2	Study Design	26
3.3	Sampling Method	27
3.4	Sampling Population	27
3.5	Sampling Frame	28
3.6	Sampling Unit	28
3.7	Sample Size	29
3.8	Study Instrumentation	30
3.9	Procedure of Data Collection	32
3.10	Data Analysis	33
3.11	Quality Control	35
3.12	Ethical Consideration	35

## **CHAPTER 4: RESULTS**

4.1	Sociodemographic Characteristics	36
4.2	General Information	40

4.3	Experience on using Kuala Lumpur Public Toilet Facilities	<b>43</b>
4.4	Level of Perception on Kuala Lumpur Public Toilet	<b>46</b>
4.5	Community Assessment on KTM Commuter Public Toilet	<b>50</b>
4.6	Association between Perception and Community Assessment	<b>53</b>
4.7	Suggestion for Improvement of Public Toilet Facilities	<b>54</b>

## **CHAPTER 5: DISCUSSION**

5.1	Respondents Sociodemographic	<b>56</b>
5.2	General Information	<b>57</b>
5.3	Experience on using Kuala Lumpur Public Toilet Facilities	<b>57</b>
5.4	Level of Perception on Kuala Lumpur Public Toilet	<b>58</b>
5.5	Community Assessment on KTM Commuter Public Toilet	<b>60</b>
5.6	Association between Perception and Assessment	<b>60</b>
5.7	Suggestion for Improvement of Public Toilet Facilities	<b>61</b>
5.8	Study Limitations	<b>62</b>
5.9	Conclusion	<b>64</b>

5.10	Recommendation	65
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	<b>REFERENCES</b>	<b>66</b>
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	<b>APPENDICES</b>	<b>71</b>
--	-------------------	-----------



## LIST OF TABLES

		<b>Page</b>
Table 1.1	Frequency of Rail Station	4
Table 4.1	Sociodemographic Characteristics of Respondents	38
Table 4.2	Experience on using Kuala Lumpur public toilet facilities	44
Table 4.3	Level of Perception	46
Table 4.4	Perception on Public Toilet in Kuala Lumpur	47
Table 4.5	Result of community assessment on KTM Commuter public toilet	50
Table 4.6	Community assessment on KTM Commuter public toilet	51
Table 4.7	Association between Perception and Assessment	53

## LIST OF FIGURES

		<b>Page</b>
Figure 1.1	Online newspaper cutting on former Prime Minister's comment about Malaysia public toilet	7
Figure 1.2	Percentage of star- rating at public toilet in Malaysia.	8
Figure 1.4	Conceptual Framework	9
Figure 2.1	Number of public toilets according to type	16
Figure 2.2	Transmission of excreta related infection	18
Figure 3.2	KTM Commuter Route Map	25
Figure 4.1	Frequency of using public toilet	41
Figure 4.2	General opinion on public toilet in Kuala Lumpur	42
Figure 4.3	The most responsible person in keeping the toilet clean	42
Figure 4.4	Importance of public toilet cleanliness	43
Figure 4.5	Percentage of answers for element of public toilet facilities according to category	45
Figure 4.6	Suggestion for improvement of public toilet facilities	54

## LIST OF ABBREVIATIONS

KTM	<i>Keretapi Tanah Melayu</i>
CDC	Centre for Disease Control and Prevention
WHO	World Health Organization
ASEAN	Association South East Asian Nation
MRT	Mass Rapid Transit
LRT	Light Railway Train
UN	United Nation
NBOS	National Blue Ocean Strategy
MyBM	My Beautiful Malaysia
QRAM	Quality Restroom Association of Malaysia
KLCC	Kuala Lumpur City Centre

## LIST OF APPENDICES

- Appendix A Ethical Approval Letter
- Appendix B Consent form Malay (Guardian/ Parents)
- Appendix C Consent form Malay (Respondents)
- Appendix D Questionnaire



## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

Public toilet is a room or booth used by all people to defecate or urinate. It can be found at public places such as supermarket, shopping mall, stations, recreational park and many more. Public toilets have played significant role in maintaining sanitation and hygiene in the community. By using toilet, people can safely excrete or urinate their feces and urine safely which goes to the sewage system to be treated. According to Centre for Disease Control and Prevention (2015), availability of toilet can help promote health because people are able to dispose their excreta appropriately. Absence of basic sanitation facilities can cause human waste to contaminate a community's land and water resulting in an unhealthy environment. It will contribute to the spread of many diseases/conditions causing illness and death.

Nowadays, public toilet in Malaysia does not only serve for sanitation purposes but also important as an image of the country as well. According to Eastern Regional Organization for Planning and Human Settlement, public toilet is described as a city's asset which can affect tourism and economy (Talha, 2016). Clean and attractive toilet can attract customers and visitors from foreign country therefore

giving good impression towards Malaysia. Furthermore, a lack of accessible and good public toilets does not only affect the quality of our city centers, parks, or bus stations, but also reduces the dignity and quality of life for people. Citizens as well as visitors rely on public toilet which could complete their basic needs when they are out of their homes.

However, some of public toilet in Malaysia is still far behind of achieving clean and attractive toilet. It has very bad and unpleasant smell, with broken and incomplete basic facilities. There are many standards published to help and guide the government and private sector in establishing and maintaining public toilet facilities. At Southeast Asian level, the Association South East Asian Nation (ASEAN) Public Standard has been published for guidance to the Southeast Asian region on the Design and Environmental Management System, Amenities and Facilities, Cleanliness and Safety of public toilet. This Public Toilet Standard has been widely used in local authorities in Malaysia. As example, the standard is used by the Ministry of Tourisms, Art and Culture Malaysia.

While in Malaysia itself, Malaysia have successfully published a Malaysian Standards for Public Toilet Malaysian as guidance to the local authority, government department, building and construction and other related public toilet service provider to be able to design, build and maintain the public toilet for ease and comfort of the community.

## 1.2 Research Justification

Rahman, 2011 stated in order to achieve a successful sanitation programs, community should participate at all level of programs and project including planning and implementation. Besides that, there should also be a regular monitoring and follow up by the community and or program implementers. Therefore, community participation in giving their perception about public toilet and assessment can help the government and private sector to improve their services in providing good public toilet facilities.

In this study, the study population is community in Kuala Lumpur. Kuala Lumpur is chosen in this study because it is the federal capital and the most populous and developed city in Malaysia. It is the fastest growing metropolitan area and has become the center of attention for Malaysia from around the world in the aspect of economic, social and cultural. Many people come to Kuala Lumpur to work and some of them managed to settle down. There are also many interesting places located in Kuala Lumpur which become the attraction not only to local visitors but also to foreign visitors such as Kuala Lumpur City Centre, PETRONAS Twin Tower and many more. Public can have access to many public facilities such as bus stations, train stations, Mass Rapid Transit (MRT), Light Railway Train(LRT), resulting in many provision of public toilet. Since toilet is a city's asset as declared by Eastern Regional Organization for Planning and Human Settlement (Talha, 2016), it is important to assess the perception of community who is the end user of public toilet

(Massa et al., 2017). Successful urban sanitation can be addressed and achieved by understanding the people's view of current and future sanitation system (Mazeau & Reed, 2010).

In this research, the study focuses on one type of community which is public transport user specifically, *Keretapi Tanah Melayu* (KTM) Commuter users. This is because KTM Commuter has access to all places around Kuala Lumpur and it also has longer waiting time which will require the community to use public toilet while waiting for the train to come. Table 1.1 shows type of rail station and its frequency.

**Table 1.1: Frequency of Rail Station**

Type of rail stations	Frequency	Source
KTM Commuter	Every 40 – 60 minutes depending on peak hours	KTMB Berhad, 2018
Light Railway Train (LRT)	every 3- 14 minutes depending on peak hours	Prasarana Malaysia Berhad
Mass Rapid Transit (MRT)	Every 4 – 15 minutes depending on peak hours	Prasarana Malaysia Berhad
Monorail	Every 5- 12 minutes depending on peak hours	Prasarana Malaysia Berhad

According to Table 1.1, KTM Commuter has the longest waiting time as compared to other types of rail station. It tooks 40- 60 minutes for a KTM Commuter to arrive at a particular station. This long waiting time will require the public transport user to use the toilet while waiting for the train. This study will reveal the perception about Kuala Lumpur public toilet and we are able to see the

result of community assessment of the KTM Commuter public toilet. The perception and assessment of public toilet can help the government, policy maker, private sector to identify key issue in public toilet and able to improve their services.

### **1.3 Problem Statement**

Public toilet is very important for the safety, health and well-being of the community. It helps to prevent the spread of communicable disease and improve health of human worldwide. According to World Health Organization (2014), poor sanitation has been linked to communicable disease such as Cholera, diarrhea, dysentery, Hepatitis A, typhoid and many more. It also gives social impact to human which causes anxiety, risk of sexual assault and loss of educational opportunities. This eventually lead to reduced human well-being, social and economic development. A total of 432 000 diarrheal deaths had been reported due to inadequate sanitation (United Nation, 2013).

Besides that, access to sanitation and hygiene is one of human right as declared by United Nation(UN). A thematic study on human rights to safe drinking water and sanitation facilities was also done by UN to strengthen the process of integration and development of Asian community (News Straits Times, 2018). In order to achieve Sustainable Development Goal 6 which is to ensure availability and sustainable management of water and sanitation for all by 2030, United Nation has officially made 19 November as World Toilet Day under the World Toilet

Organization in 2013(United Nation, 2013). The day is to inspire people around the world to tackle the global sanitation issue.

In concern, there is a very limited study on the community perception and assessment of public toilet in Malaysia. There are studies conducted by foreign country to assess the perception of public toilet. As example, a study in Indonesia reported that the perception of tourists about cleanliness of public toilet as very less clean (Sunarsa & Andiani, 2019). Meanwhile, a Singapore local toilet study reported that users were either very unhappy or unhappy with the cleanliness of toilet at coffee shops and hawker centers followed by bus interchanges, parks and MRT stations (Singapore Restroom Association, 2011). A study conducted by Greater Bendigo City Council found that the community also has poor perception towards public toilet. Open space was not properly managed by the city Council and poorly located with the presence of graffiti and vandalism (Greater Bendigo Council, 2017).

In Camden, London, a study reported most of the citizens experienced an inappropriate state of public toilet. A total of 84% of people said they wanted more public toilets. Many people are less worried about who runs or manages toilets, as long as they are more accessible to the public. Some people are more affected by the lack of clean, accessible and safe toilets than others. Some people have perception that they feel unable or reluctant to leave their homes and visit areas where they are afraid they cannot find a public toilet. Meanwhile, for older people like our mothers, fathers, and caregivers with young children, people with disabilities, and people with

chronic health issues– all need easy access to adequately equipped public toilet (Department for Communities and Local Government, 2008).

Next, assessment of public toilet is usually conducted and monitored by the local government authority by using the assessment from the ASEAN Public Toilet Standard. There is also self- assessment checklist for the owner of public toilet to monitor their compliance to the Public Toilet Standard. But, we never know the effectiveness since Malaysia public toilet is smelly and dirty as described by the former Prime Minister, Tun Dr. Mahathir Mohamad in his speech recently (BERNAMA, 2019). Figure 1.1 below shows online newspaper cutting on our former Prime Minister’s comment on Malaysia public toilet.

#### Dr Mahathir Malu Tandas Awam Di Malaysia Kotor, Busuk

Ogos 13, 2019 | Berita

PUTRAJAYA, 13 Ogos (Bernama) — Perdana Menteri Tun Dr Mahathir Mohamad mengakui beliau amat malu dengan keadaan tandas awam di negara ini yang kotor dan busuk yang menurutnya mencerminkan masyarakat Malaysia tidak mempunyai tanggungjawab sivik.

"Saya amat malu kerana saya sering kali pergi inspection toilet di Malaysia untuk tengok bersih atau tidak, biasanya tidak, dan busuk.

"Itu mencerminkan sifat yang ada pada kita. Sepatutnya kita berasa malu, tetapi kita berpendapat, tak ada orang akan tahu siapa (yang) buat."

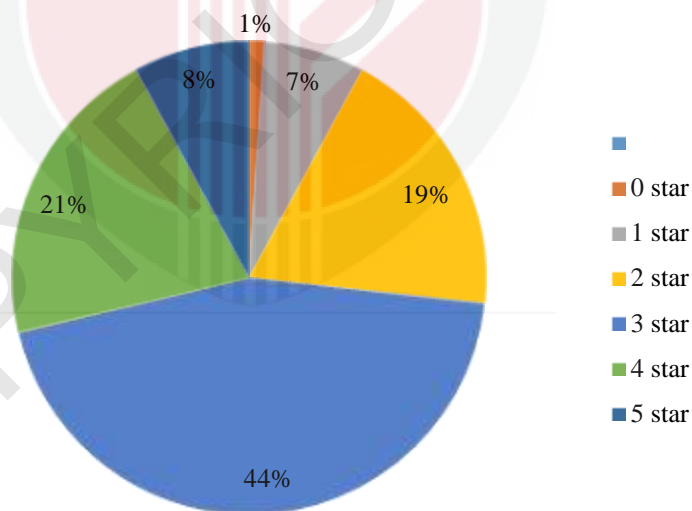


**Figure 1.1: Online newspaper cutting on former Prime Minister’s comment about Malaysia public toilet**

**Source from: (BERNAMA, 2019)**

Besides that, an assessment conducted by local authority on public toilet in Malaysia reported that almost 45% of Malaysia public toilet achieved only three- star rating while only eight percent achieved five- star rating. These public toilets include all public toilet located at public places such as private public toilet, petrol stations, food or restaurants, shopping malls, airports, train stations, bus stations and hotels. Figure 1.2 shows the percentage of star- rating of public toilet in Malaysia. The result shows that our public toilet is still lacking on something in which we need to find out what is it. Responses or participation from the community could identify key issue on why our toilet is not in good state.

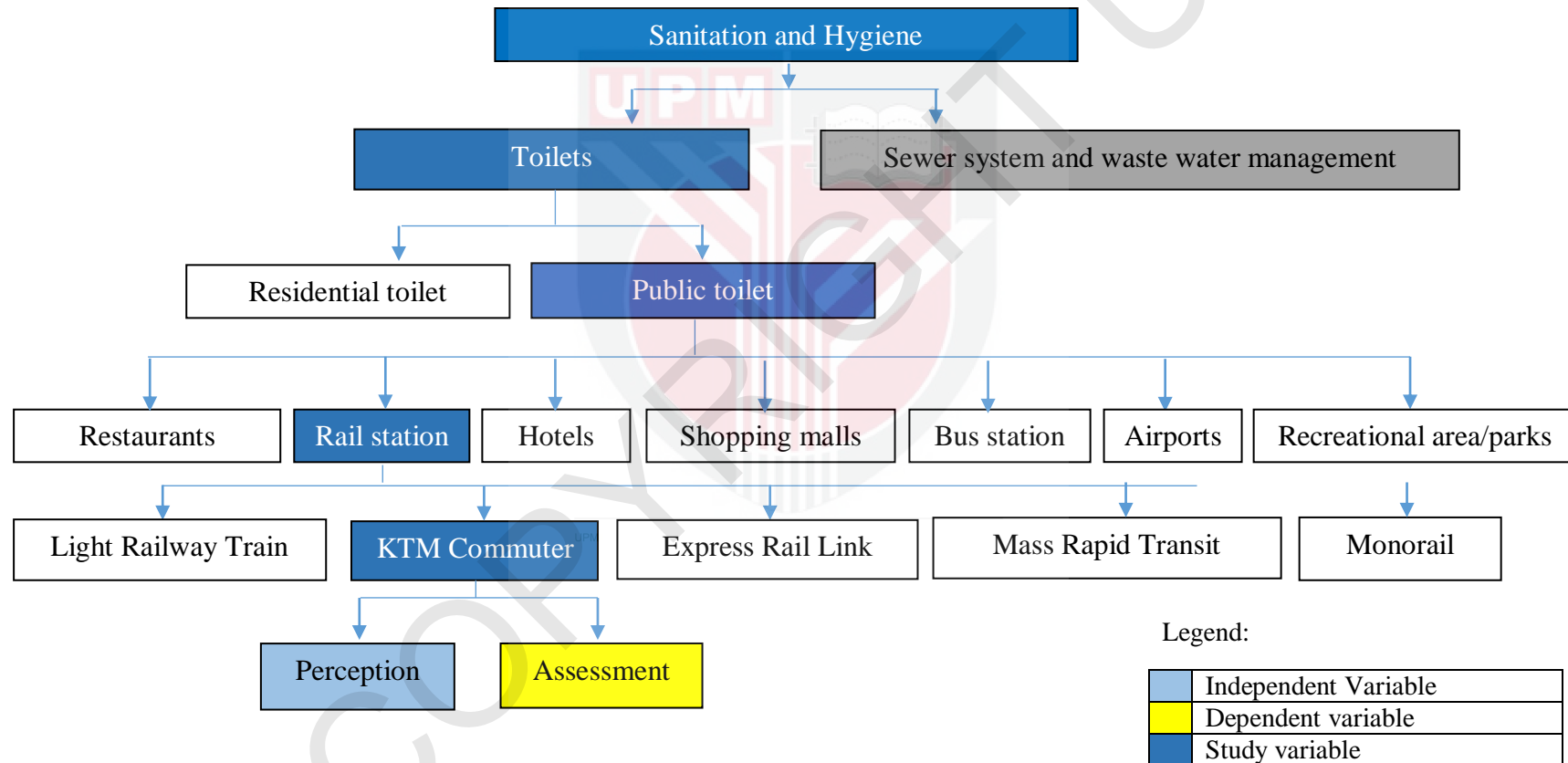
**Percentage of star rating at public toilet in Malaysia**



**Figure 1.2: Percentage of star- rating at public toilet in Malaysia**

**Source from : (Ministry of Housing and Local Government, 2017)**

### 1.4 Conceptual Framework



## 1.5 Research Questions

- i. What is the sociodemographic background of community using KTM Commuter public toilet in Kuala Lumpur?
- ii. What is the level of perception of community using KTM Commuter public toilet in Kuala Lumpur?
- iii. What is the result of community assessment on KTM Commuter public toilet in Kuala Lumpur?
- iv. Is there any association between the community perception and assessment of KTM Commuter public toilet among community in Kuala Lumpur?
- v. What is the suggestion for improvement on public toilet facilities in Malaysia?

## 1.6 Hypothesis

- i. Community shows bad level of perception on KTM Commuter public toilet in Kuala Lumpur, Malaysia.
- ii. There is significant association between the community assessment and perception of public toilet in Kuala Lumpur, Malaysia.

## 1.7 Objectives

### 1.7.1 General Objectives:

To determine the community perception and assessment on KTM Commuter public toilet in Kuala Lumpur.

### 1.7.2 Specific Objectives:

- i. To identify the sociodemographic background of community using KTM Commuter public toilet in Kuala Lumpur.
- ii. To determine the level of perception of public toilet among community using KTM Commuter public toilet in Kuala Lumpur.
- iii. To determine the result of community assessment on KTM Commuter public toilet.
- iv. To determine the significance difference between community perception and assessment of KTM Commuter public toilet in Kuala Lumpur.
- v. To obtain improvement on the facilities of public toilet in Kuala Lumpur.

## 1.8 Definition of Terms

### 1.8.1 Conceptual Definitions

i. Public Toilet:

Public toilet is a room or booth used by all people to defecate or urinate that consist of at least a bowl fitted with or without a seat (seating or squatting) and connected to a waste pipe and a flushing apparatus (Sacreteriat, 2016).

ii. Assessment:

The act of judging or deciding the amount, value, quality, or importance of something, or the judgment or decision that is made (Cambridge Dictionary, 2019).

iii. Perception:

The interpretation of information shaped by personal experience and social frameworks.

iv. Community:

Communities are typically defined by a geographic area; however, they can also be based on shared interests or characteristics such as religion, race, age, or occupation (CDC, 2013).

## 1.8.2 Operational Definition

### i. Public toilet

Public toilet is Kuala Lumpur KTM Commuter public toilet located at Kuala Lumpur. Only nine KTM Commuter public toilet was selected in this study through purposive sampling.

### ii. Assessment

Assessment is the act of assessing, and judging the selected public toilet in Kuala Lumpur to its design and environmental management system, amenities, facilities, cleanliness and safety. The assessment will be conducted by respondents using the Self- Assessment checklist adapted from ASEAN Public Standard (ASEAN, 2016).

### iii. Perception

Perception is the respondents' opinion or interpretation of information based on their personal experience using public toilet. The perception of public toilet will be assessed through the use of questionnaire.

iv. Community

Community is the users of KTM Commuter public toilet located at Kuala Lumpur that will be selected through convenience sampling which will represent the community of Kuala Lumpur with the required inclusion and exclusion criteria.



## CHAPTER 2

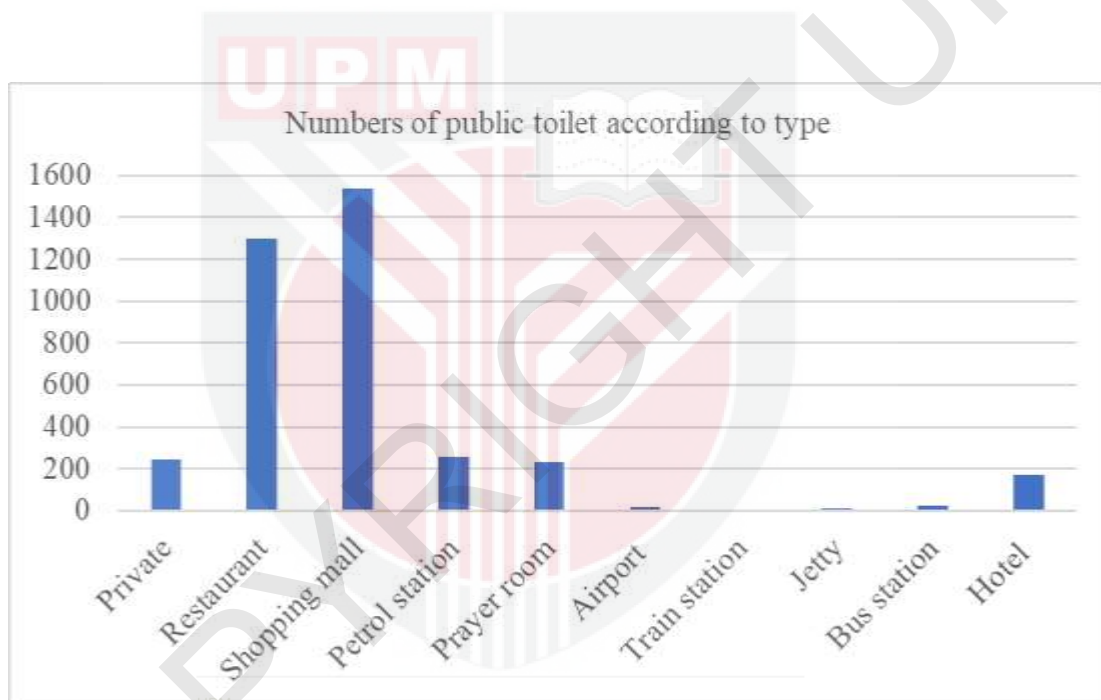
### LITERATURE REVIEW

#### 2.1 Definition of Public Toilet

Public toilet is defined as a room or booth shared by people for the purpose of urination and defecation which consist of at least a bowl fitted with or without a seat (seating or squatting) and connected to a waste pipe and a flushing apparatus (Secretariat, 2016). “Public Toilets are toilets which are provided for the floating population/ general public in places such as markets, train stations, tourist places, near office complexes, or other public areas where there are considerable number of people passing by” (Pradesh, 2016). According to Greater Bendigo Council, 2017, public toilet is “a facility which contains one or more rooms/cubicles which is available for use by the public. The facility may be mechanized or automated and consist of stand-alone, service-hosted and privately provided facilities. A public toilet is usually located on Council”. “Public toilets are also essential community assets which contribute to the enjoyment and amenity of residents and visitors” (Greater Bendigo Council, 2017). In conclusion, public toilet is a toilet located at public area/places to be used by the public to urinate and defecate.

## 2.2 Public Toilet in Malaysia

In Malaysia, there is a total of 2399 public toilets located all around Malaysia including Sabah and Sarawak. In Malaysia, there are ten types of public toilet which are private public toilets, restaurant toilet, shopping mall toilet, petrol station toilet, prayer room toilet, airport toilet, train station toilet, bus station toilet, jetty toilet, and hotel toilet. Figure 2.1 shows the number of public toilet according to types.



**Figure 2.1: Number of public toilets according to type**

**Adapted from: (Department of Local Government, 2018)**

Based on the figure above, the highest number of public toilet is shopping mall public toilets whilst airport, train station, jetty and bus station has quite an evenly number of public toilet. All of these toilets are toilets audited every year by

the Local Government Authority. The public toilets are managed and cleaned privately by its respective owner hiring their own cleaners of toilet.

## **2.3 The need of public toilet**

### **2.3.1 Disease prevention and healthy community**

One of the importance of public toilet is to produce a healthy community. With provision of public toilet, people can excrete and urinate their waste properly when they are out of their home and travelling to another places. A lack of public toilet will result in unsanitary places and can spread infection causing diseases such as diarrhea (Oloruntoba, Folarin, & Ayede, 2014). According to the New Humanitarian Organization (2007), lack of toilet and poor hygienic condition lead to water-borne disease. Following defecation, urines become stagnant and contaminates the soil and groundwater with bacteria. Drinking water system and the wells contaminated with the bacterial parasites will further causing diarrhea and Hepatitis A. A study conducted in Malaysia also reported that the absence of sanitation facilities has significant association with diarrhea especially with children under age of 5 years old. (Azry et al., 2018). Dirty water and lack of safe toilet is also the top five of major killers in woman worldwide (Callister, 2017). Figure 2.2 below shows the transmission of excreta-related infection.



**Figure 2.2: Transmission of excreta related infection**

**Adapted from: (WHO, 2017)**

Excreta related infection can also occur when people practice open defecation. This is a serious health threat to the public health. As example, a person that is infected with bacillary dysentery, he/ she could excrete  $1 \times 10^9$  bacteria in a small stream when they defecate. Theoretically, this number of pathogens could pollute  $10000 \text{m}^3$  of water with 100 bacteria. Further infection can occur to other community by consuming or ingesting 10 to 100 bacteria that is present in the water (“Chapter 6 Sanitation,” n.d.).

Besides that, Greed (2006) also stated that the spread of *Cryptosporidium parvum* can occur resulting from the lack of public toilet with bad sewerage system and drainage problems. *C. parvum* is known as the fourth commonly identified cause

of gastroenteritis and further causing diarrhea. It is identified that human feces are one of the main modes of transmission to urinary, vaginal and anal infection. This is due to public toilet is a place where complete strangers shared and used same sanitary facilities with risk of exposure to body fluid exchange, contamination and transmission of organism or pathogen (Greed, 2006). The sanitary structures can play an important role in disease transmission if they are not keep clean. Fecal- oral infection can be transmitted through feces, contaminated material, or through flies or cockroaches as example infection hookworm due to contact with contaminated feces(“Chapter 6 Sanitation,” n.d.).

Next, Johnson et al. (2018) also reported contaminated toilets as a potential source of recurring surface contamination and droplet nuclei bio aerosol production that could be contributing to healthcare-associated infections. A single toilet flush could produces thousands of aerosol droplets, hundreds to thousands of which entrain microbes as large as bacteria and subsequently evaporate to droplet nuclei size and remain airborne for extended periods.(Johnson et al., 2018). It is vital to provide and maintain public toilet to reduce disease transmission and further reduces medical expenses. Lastly, availability of public toilet at public places such as parks, lake and recreational places will encourage people to exercise regularly and live a healthy lifestyle (Department for Communities and Local Government, 2008).

### **2.3.2 Economic benefits**

Provision and maintenance of public toilet can also give economic benefits to the country. According to Washington (2014), provision of accessible toilets that are safe and clean can improve pedestrian experience. This will further encourage pedestrians to spend longer time outside their homes, spending more money and utilizes public spaces regularly throughout the day and night. Urban theories of transit-oriented development stated that commitment in providing public toilet will improve pedestrian improvement therefore increasing transit usage (Washington, 2014). It is important to provide public toilet if government wants the community to leave their car at home and move by public transport. Besides that, woman need public toilet since they use public transport more frequent than man when travelling during day time and usually with children, elderly or disabled relatives (Greed, 2006).

### **2.4 Program related to public toilet in Malaysia**

Based on the Ministry of Housing and Local Government Report 2017, World Toilet Day that is introduced by the World Toilet Organization was celebrated every year. As example, the 2019 World Toilet Day has been celebrated at Stadium Indra Mulia, Ipoh, Perak. The 2019 World Toilet Day is celebrated with the theme of “Clean Toilet, Healthy Community”. It was participated by the technical officers of Local Government Authority, governmental agency, secondary and primary school students, restaurant owners, petrol station owners, private sectors, non- governmental

organization and many more. The program was held to increase awareness to the people to love toilet and the importance of maintaining a clean toilet to the community (Ministry of Housing and Local Government, 2019).

Besides that, the Ministry of Housing and Local Government also is implementing the Public Toilet Repair and Upgrade Project managed by Local Authority. The project is under the National Blue Ocean Strategy (NBOS) which is one of the component under the Program My Beautiful Malaysia (MyBM). The main objectives of the program are to overcome the maintenance issue of government housing and public facilities that is not well maintained.

Lastly, there is also a Quality Malaysia Restroom Association of Malaysia (QRAM) which aims to convince government agencies and private sectors to join force with QRAM as their main partner in promoting and enforcing public toilet cleanliness. They educate washroom users through trainings and seminars and poster campaigns, clean Washroom Campaigns and Competitions, and form strategic corporation with government agencies, private companies, NGOs, restaurant and coffee shop owners (Quality Restroom Association of Malaysia,2019).

## 2.4 Perception on Public Toilet

Perception is a thought, belief, or opinion, often held by many people and based on appearances (Cambridge University, 2019). In this context, we are looking at the perception of community or specifically public toilet users about what they thought and feel about the public toilet. A study conducted in Indonesia toward tourist in Bali concluded the cleanliness of public toilets on tourist objects and attractions in Bali is less clean (Sunarsa & Andiani, 2019). According to Camenga et al. (2019), lack of cleanliness of public toilet resulted in self restricting use in public spaces especially those not located in commercial spaces. Public toilet in parks or rest stops also is lack of cleanliness, has unpleasant smell and harboring of germs. People would feel reluctant or will not use toilet if the toilet is not clean. It is proven in a study conducted at school public toilet discovered that student would never use the school toilet to pass stool and 32% would use the toilet if in desperate (Barnes & Maddocks, 2002). Then, poor maintenance of public toilet at places like railway station, bus stops leave the public toilet with poor impression (Reddy, Raghavan, & Chary Vedala, 2019). People also agree that using contaminated toilet with feces would lead to the risk of infection (Wu et al., 2019).

## 2.5 Assessment of Public Toilet

There is limited study conducted on the assessment of public toilet in Malaysia because it is mainly assessed and audited by the local authority itself. A Singapore toilet survey study reported average levels of cleanliness. Sensor automatic flushing system and odor problem monitoring is needed. The sanitary bins, urinals, toilet bowls are also the least clean facilities. The assessment also resulted in male toilets are dirtier than female toilets. (Singapore Restroom Association, 2011). Hossain, Kabir, & Chowdhury (2017) also reported that open access public toilets are very dirty places and over 70 percent respondents expressed dissatisfaction at the atmosphere.

## CHAPTER 3

### METHODOLOGY

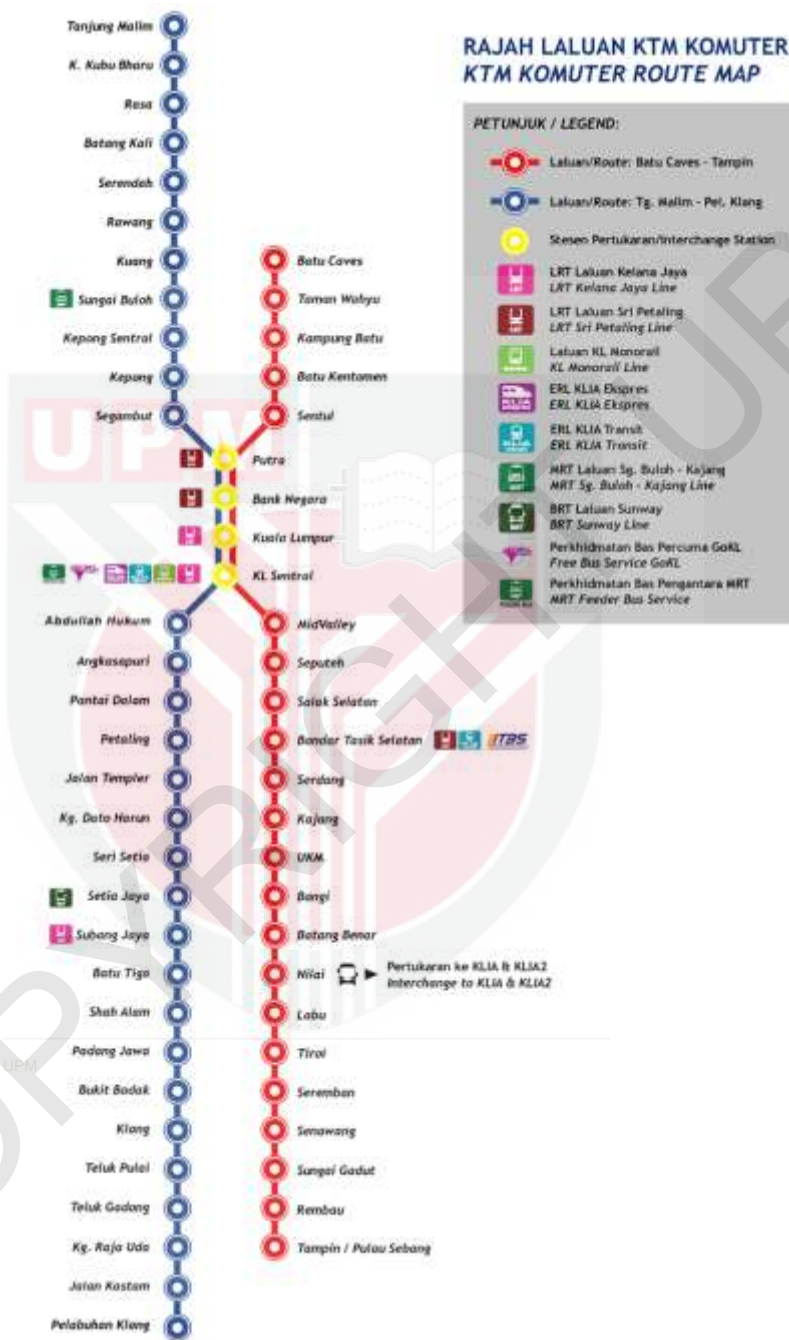
This chapter explains the method and tools used in this research. The various sections will explain the design, duration, population and methods used for selection of research participants.

#### 3.1 Study Location

This study was conducted at KTM Commuter public toilets located at Kuala Lumpur. Kuala Lumpur is the national capital of Malaysia with the population growth of seven million. It is the fastest growing metropolitan area and is the centre of attention for Malaysia from around the world in the aspect of economic, social and cultural. Many people come to Kuala Lumpur to work and some of them managed to settle down. There are also many interesting places located in Kuala Lumpur such as Kuala Lumpur City Centre (KLCC), PETRONAS Twin Tower and many more. Public can have access to many public facilities such as bus stations, train stations, Mass Rapid Transit (MRT), Light Railway Train(LRT) and many more. There is a total of 11 districts in Kuala Lumpur which are Bukit Bintang, Titiwangsa, Setiawangsa, Wangsa Maju, Batu, Kepong, Segambut, Lembah Pantai, Seputeh, Bandar Tun Razak and Cheras. Within all this district, KTM Commuter is one of the

public transportation service provided to serve millions of passengers every year.

Figure 3.2 shows the KTM Commuter route map.



**Figure 3.2: KTM Commuter Route Map**

Adapted from: (KTM Berhad, 2018)

The KTM Commuter has two lines which are Seremban and Klang Valley lines. These two lines provide access to area around Klang Valley including Kuala Lumpur. There is 17 KTM Commuter located at Kuala Lumpur which are Taman Wahyu, Batu Kentomen, Sentul, Putra, Bank Negara, Kuala Lumpur, KL Sentral, Mid Valley, Seputeh, Salak Selatan, Bandar Tasik Selatan, Abdullah Hukum, Angkasapuri, Pantai Dalam, Petaling, Kepong and Segambut.

### **3.2 Study Design**

This is a cross-sectional study conducted to identify the community perception and assessment on public toilet in Kuala Lumpur. This study was done specifically for one type of community in KL which is the KTM Commuter public toilet user. KTM Commuter public toilet user is the person who either works, resides or visit KL and have used public toilet at the KTM Commuter. The researcher only chose one type of community and did not select all community in Kuala Lumpur because of time constraint and availability of logistics and transportation. Choosing all community in Kuala Lumpur will require longer time to complete the study because it involves large numbers of public toilets located all around Kuala Lumpur. Researcher also need to keep up with the time frame of the research. Therefore, only one type of community is selected. This study will assess the relationship between community perception and assessment of public toilet at KTM Commuter in Kuala Lumpur.

### **3.3 Sampling Method**

Originally, all KTM Commuter was selected in the study. However, due to not all KTM Commuter provide public toilet to users, purposive sampling was used by determining the availability of public toilet at the KTM Commuter and number of passengers at the KTM Commuter or the frequency of use of KTM Commuter by the user. In total, there are 17 KTM Commuter located in Kuala Lumpur (refer Figure 3.2). From this 17 (seventeen), only 9 KTM Commuter was able to be selected by the researcher. The KTM Commuter selected are Taman Wahyu, Batu Kentomen, Sentul, Kuala Lumpur, KL Sentral, Bandar Tasik Selatan, Kepong, Segambut and Abdullah Hukum. After selecting the KTM Commuter, convenience sampling was used for the participation of respondents.

### **3.4 Sampling Population**

KTM Commuter public toilet users were selected as respondent in this study. They were selected through convenience sampling. The questionnaire was given to the respondents at the selected KTM Commuter user that have experienced using the KTM Commuter public toilet. For each KTM Commuter, 14 -15 response were collected to ensure it is equally distributed to the represent the community.

### **3.5 Sampling Frame**

The sampling frame of this study is the list of KTM Commuter located at Kuala Lumpur. Only KTM Commuter that has provision of public toilet and high frequency of passenger was selected in this study.

### **3.6 Sampling Unit**

The sampling unit of this study is Malaysian citizen who is willing to participate in the study and fulfilled the inclusion criteria. The inclusion criteria and exclusion criteria are as follows:

**i. Inclusion criteria**

1. Age from 16 years old and above
2. Have use any public toilets at KTM Commuter public toilet in Kuala Lumpur

**ii. Exclusion criteria**

1. Respondent who is unwilling to participate in the study.

### 3.7 Sample Size

The sample size was calculated based on the one proportion for one group formula (Aday & Cornelius, 2006) since the study aimed to identify association between perception and assessment of public toilet at KTM Commuter in Kuala Lumpur. Since there is no previous study found related to the perception and assessment of public toilet at KTM Commuter in Kuala Lumpur, the proportion had been set at 50% (0.5) to provide the highest sample size at 50% proportion. At 91% of confidence interval which has 1.96 of standard errors and 9% of desired precision, the sample size was calculated as below:

$$n = \frac{[Z^2_{1-\alpha/2} p(1-p)]}{d^2}$$
$$n = \frac{[1.96^2 \cdot 0.5(1-0.5)]}{0.09^2}$$
$$= 119 \text{ respondents}$$

$n$  = Sample size  $Z^2_{1-\alpha/2}$  = Standard errors associated with confidence

$P$  = Prevalence of estimated proportion

$d$  = Desired precision

Adding drop- out rate in respondent, twelve more sample was added making a total of 131 samples. The formula and calculation of drop- out rate is as follows:

$$n = \frac{10}{100} \times 119 = 12 \text{ respondents}$$

### **3.8 Study Instrumentation**

#### **3.8.1 Questionnaire**

The tool used in this research was a modified questionnaire adapted from various local authority and researcher. Section A was adapted from basic demographic questionnaire. Section B and F was adapted from Public Toilet Community Survey (Town of Bassendean, 2008). Section C and Section D was adapted from Local Toilet Survey (Torfaen County Borough Council, 2018) and Singapore Toilet Survey (2011). Section E is fully adapted from Self- Assessment Checklist (ASEAN Public Toilet Standard, 2015).

##### **Section A: Respondent Sociodemographic Information**

In this section, respondent was asked about sociodemographic background such as age, gender, race, family income, educational level, salary, marital status, and occupation.

##### **Section B: General Question**

In this section, respondent was asked about the frequency of using public toilet, who is responsible in keeping the public toilet clean, general perception of public toilet in Kuala Lumpur, responsibility of keeping public toilets, and importance of public toilet.

### **Section C: Experience on Kuala Lumpur basic public toilet facilities**

In this section, respondent was asked about their experience when using Kuala Lumpur public toilet facilities such as door knob, door, ceiling, toilet bowl, toilet sink and many more. The answer option was in likert scale from very dirty, dirty, neutral, clean and very clean.

### **Section D: Perception when using Public Toilet**

This section consists of 19 questions that measures the perception of respondents toward public toilet in Kuala Lumpur. As example, the question asked about the importance of cleanliness, expectation of public toilet, accessibility and satisfaction toward public toilet. The answer option is in likert scale ranging from strongly agree, agree, disagree and strongly disagree.

### **Section E: Public Toilet Assessment**

In this section, respondent is needed to assess the toilet they used at the respective zone using the Self- Assessment Checklist adapted from ASEAN Public Standard.

## **Section F: Suggestion**

In this section, the respondent required to give suggestion for improvement of public toilet. Suggestion for improvement of public toilet facilities includes option answer and an open ended question.

### **3.9 Procedure of Data Collection**

Firstly, ethical approval was obtained from Ethics Committee for Research Involving Human Subjects Universiti Putra Malaysia (UPM). Then, the data collection started at the selected KTM Commuter all around Kuala Lumpur. Before the questionnaire was given to the respondent, respondents were asked about their age and if they have experienced using the KTM Commuter public toilet. Respondents were firstly being explained about the study purpose and they should be willingly participate in the study. Respondents who agreed to participate was given the consent form to be filled before answering the questionnaire. After finished answering the questionnaire, token of appreciation was given to the respondents for their participation.

### 3.10 Data Analysis

#### 3.10.1 Descriptive Statistics

Descriptive statistics were used to analyze the sociodemographic information, general questions, perception and assessment of public toilet. The data analysis was executed by using SPSS Statistics Version 25.0. The scoring method for each perception and assessment are as follows:

##### 1. Perception scoring method

Strongly agree- 4 points

Agree – 3 points

Disagree – 2 points

Strongly disagree- 1 point

The total scores were counted and converted to categorical form which were low, moderate and high perception. By using the mean score and standard deviation from the score calculated (Ajit, 2011), categorization is as follows:

High:  $\text{Score} > \text{Mean} + \text{SD}$

Moderate:  $\text{Score} = \text{Mean} \pm \text{SD}$

Low:  $\text{Score} < \text{Mean} - \text{SD}$

## 2. Assessment scoring method

Yes – 1

No – 0

For the assessment, scores were calculated and categorized into two category

(ASEAN, 2016) as follows:

Pass: 18 and above

Not pass: Below 18

### 3.10.2 Analytical Statistics

Pearson correlation test was used to determine the association between perception and assessment of public toilet.

### **3.11 Quality Control**

#### **3.11.1 Pilot Study**

Pilot study had been conducted to ten percent of sample size which resulted in thirteen students in Faculty of Medicine and Health Sciences. This is to ensure the reliability of questionnaire with Cronbach's alpha value of 0.7 or more (Bryman and Cramer, 2005). Cronbach's alpha of reliability statistic for perception question was 0.774 which indicated acceptable reliability. Cronbach's alpha of reliability statistic for assessment question was 0.931 indicating strong reliability. To allow the community of vast ages to be able to understand the question, the questionnaire was also made available in Malay and English language. Besides that, the participant who participated in the pre- test was not included in the main survey.

#### **3.12 Ethical Consideration**

Ethical approval had been approved by Ethics Committee of Universiti Putra Malaysia (UPM). Written informed consent was obtained from respondents before answering the questionnaires. All information regarding respondents remained private and confidential. The ethics reference number of this study is JKEUPM-2019-497.

## CHAPTER 4

### RESULTS

This chapter reported the descriptive and analytical statistics on sociodemographic information, knowledge, perception and assessment. For descriptive statistics, information on sociodemographic, general information on public toilet, perception on Kuala Lumpur public toilet, community assessment on KTM Commuter public toilet and suggestion for improvement of public toilet were presented. Whereas for analytical findings, the results on association between community perception and assessment were displayed.

#### 4.1 Sociodemographic Characteristics

Sociodemographic characteristics of respondents consist of gender, race, age, marital status, education level, occupation sector and family income. Firstly, for gender, most of the respondents were female with 85 participants (75.9%) and the rest were males. For race, most of the respondents were Malay with 98 participants (87.5%), followed by Indian with 9 participants (8.0%), Chinese with 4 participants (3.6%) and other race of 1 participant (0.9%). For age, 64.3% (72) of participants came from the age group of 16-24 years old whilst 29.5% (33) respondents came from the age group of 25- 40 years old. Then, four participants (3.6%) and 3

participants (2.7%) came from the age group of 41-60 years old and above 60 years old respectively.

For marital status, single status dominates by 101 participants (90.2%). Married status and single status were 9 participants (8.0%) and 2 participants (1.8%) respectively. For education level, most of the participants have bachelor's degree with 71 participants (63.4%). The lowest participant came from primary education level with 2 participants (1.8%). As for the occupation sector, 60 participants (53.6%) were students, followed by private sector with 36 participants (32.1%). Lastly, for family income, 29 participants (25.9%) have a family income of RM1001-RM2000, 25 participants (22.3%) have a family income of more than RM5000 and 21 participants (18.8%) have a family income of less than RM1000. Table 4.1 shows the sociodemographic characteristics of respondents.

**Table 4.1: Sociodemographic Characteristics of Respondents (n=112)**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	27	24.1
Female	85	75.9
<b>Race</b>		
Malay	98	87.5
Chinese	4	3.6
Indian	9	8.0
Others	1	0.9
<b>Age</b>		
16- 24 years old	72	64.3
25- 40 years old	33	29.5
41-60 years old	4	3.6
Above 60 years old	3	2.7
<b>Marital status</b>		
Single	101	90.2
Married	9	8.0
Divorced	2	1.8

**Education level**

Primary	2	1.8
Secondary	10	8.9
Diploma/ Matriculation/ foundation	24	21.4
Bachelor's degree	71	63.4
Master's degree	5	4.5

**Occupation sector**

Government	4	3.6
Private	36	32.1
Self employed	4	3.6
Retiree	2	1.8
Unemployed	6	5.4
Student	60	53.6

**Family income**

Less than RM1000	21	18.8
RM1001-RM2000	29	25.9
RM2001-RM3000	16	14.3
RM3001-RM4000	15	13.4
RM4001-RM5000	6	5.4
More than RM5000	25	22.3

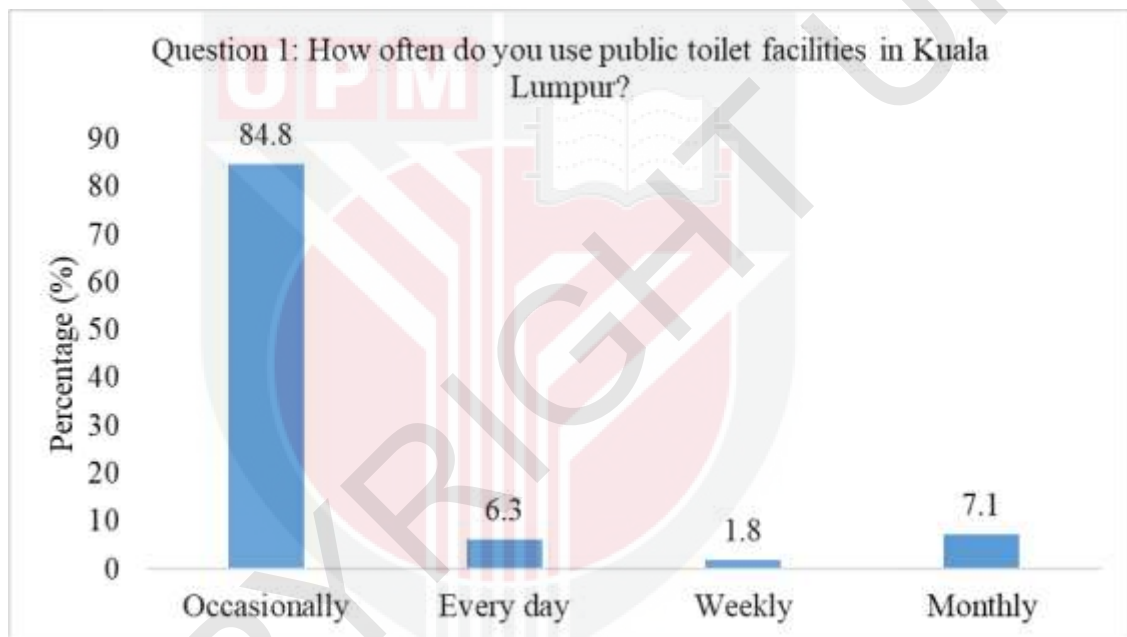
## 4.2 General Information

4 questions were asked in this section about frequency of using public toilet, their general opinion on Kuala Lumpur public toilet, and the importance of public toilet cleanliness. In this section, the data obtained was analyzed using descriptive statistic to only identify the frequency and percentage.

In question 1, participants were asked how often they used public toilet facilities in Kuala Lumpur. Most of the participants answered occasionally with 84.8% (95 participants). Only 7 participants (6.3%) used the toilet every day. In question 2, for general opinion on public toilet, three quarters of participants answered “sometimes not well presented and unclean”. Only 20 participants (17.9%) answered “well presented”.

Next, for question 3, the question is multiple answer choices. The participants can choose more than 1 answer. Therefore, the most responsible person in keeping the cleanliness of public toilet is the public toilet user themselves with 92 participants (82.5%), followed by both cleaner and public toilet owner sharing the same percentage of 50.8%. The least responsible person goes to non- governmental organization with 14 participants (12.7%).

Finally, question 4 asked about the importance of public toilet cleanliness. In question 4, respondents can also choose more than one answer. In this question, image of public toilet is the most important in maintaining cleanliness of public toilet with 92 participants (82.1%). Mental health is the next importance with 85 participants (75.9%). The lowest is physical health with 41 participants (36.6%). The answers were presented in Figure 4.1, 4.2, 4.3 and 4.4 as follows:



**Figure 4.1: Frequency of using public toilet.**

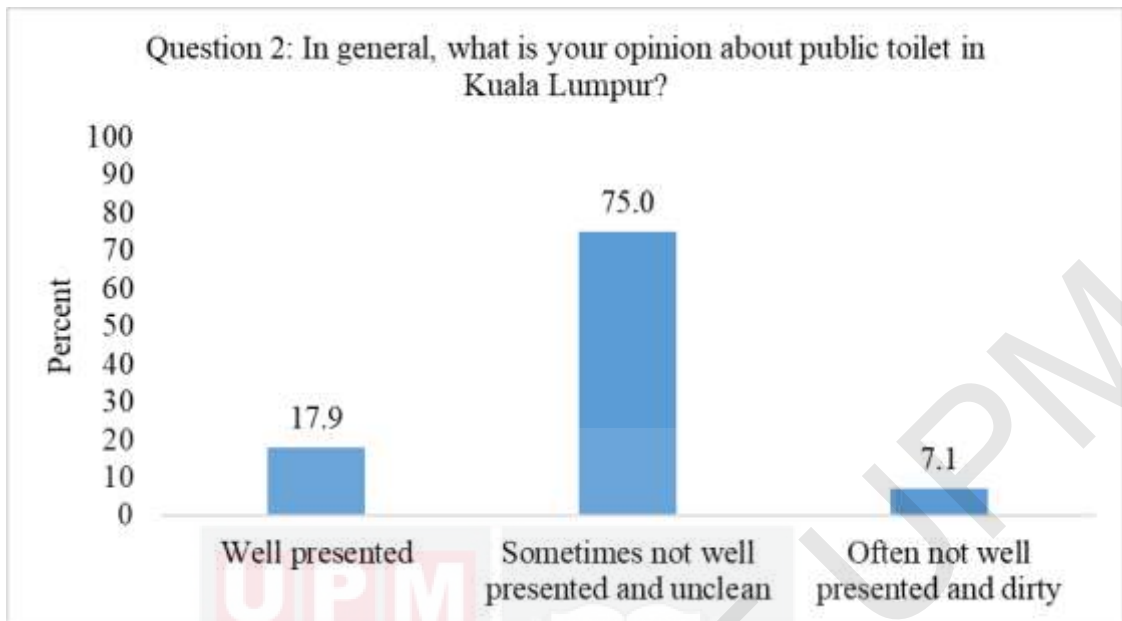


Figure 4.2: General opinion on public toilet in Kuala Lumpur

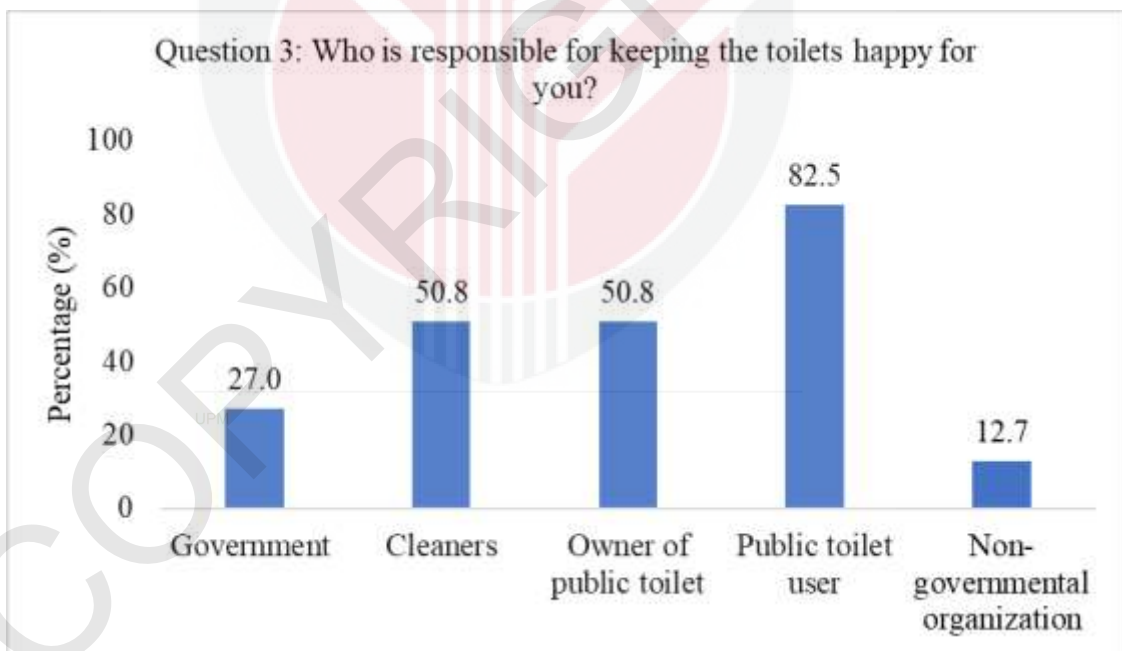
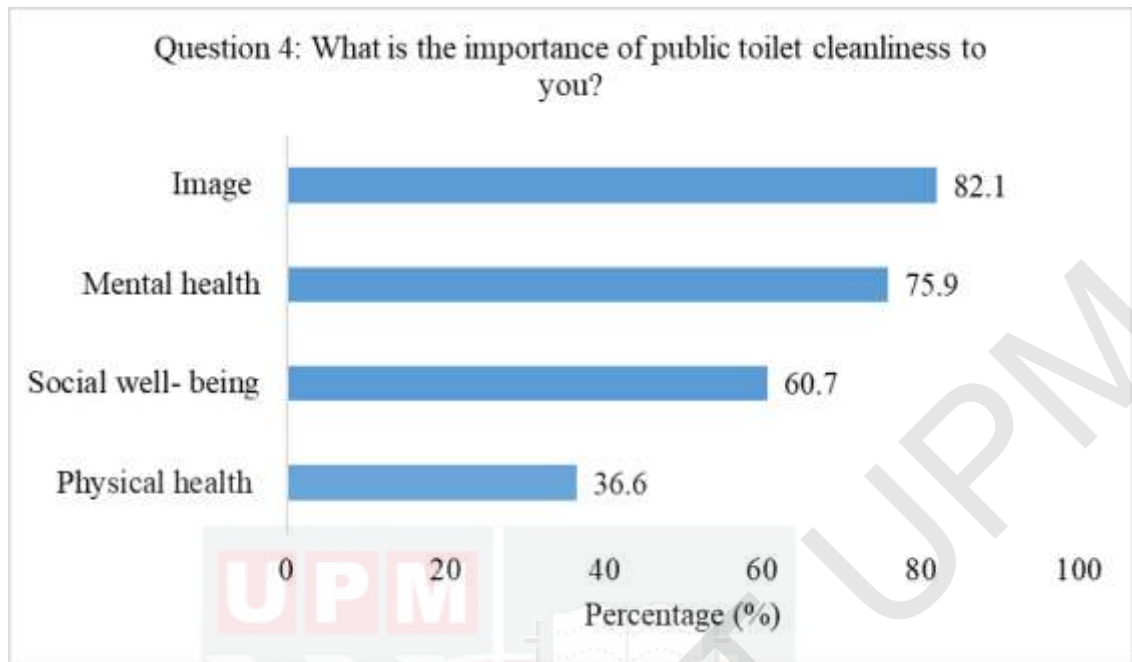


Figure 4.3 The most responsible person in keeping the toilet clean



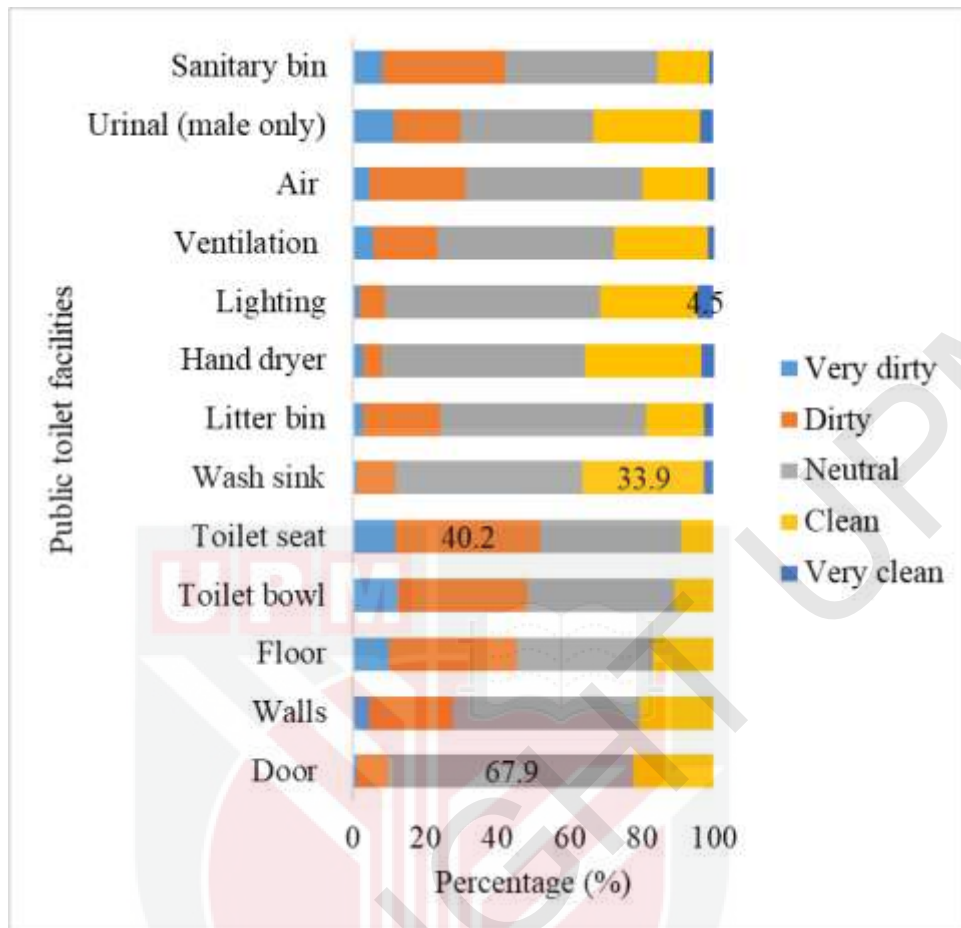
**Figure 4.4: Importance of public toilet cleanliness**

### **4.3 Experience on Using Kuala Lumpur Public Toilet Facilities**

In this section, participants were required to choose one of the answer based on their experience using Kuala Lumpur public toilet facilities. There were 5 answer options which were very dirty, dirty, neutral, clean and very clean. This section was only analyzed using descriptive statistics which were frequency and percentage. Almost all elements of public toilets were rated neutral by the participants except for toilet seat that was rated dirty with 45 participants (40.2%). Table 4.2 shows the experience of using Kuala Lumpur public toilet facilities.

**Table 4.2: Experience on using Kuala Lumpur public toilet facilities**

Element	N (%)				
	Very dirty	Dirty	Neutral	Clean	Very clean
<b>Door</b>	1 (0.9)	10 (8.9)	<b>76 (67.9)</b>	25 (22.3)	-
<b>Walls</b>	5 (4.5)	26 (23.2)	<b>58 (51.8)</b>	23 (20.5)	-
<b>Floor</b>	11 (9.8)	40 (35.7)	<b>42 (37.5)</b>	19 (17.0)	-
<b>Toilet bowl</b>	<b>14 (12.5)</b>	40 (35.7)	<b>46 (41.1)</b>	12 (10.7)	-
<b>Toilet seat</b>	13 (11.6)	<b>45 (40.2)</b>	44 (39.3)	10 (8.9)	-
<b>Wash sink</b>	1 (0.9)	12 (10.7)	58 (51.8)	<b>38 (33.9)</b>	3 (2.7)
<b>Litter bin</b>	3 (2.7)	24 (21.4)	<b>64 (57.1)</b>	18 (16.1)	3 (2.7)
<b>Hand dryer</b>	3 (2.7)	6 (5.4)	<b>63 (56.3)</b>	36 (32.1)	4 (3.6)
<b>Lighting</b>	2 (1.8)	8 (7.1)	<b>67 (59.8)</b>	30 (26.8)	<b>5 (4.5)</b>
<b>Ventilation</b>	6 (5.4)	20 (17.9)	<b>55 (49.1)</b>	29 (25.9)	2 (1.8)
<b>Air</b>	5 (4.5)	30 (26.8)	<b>55 (49.1)</b>	20 (17.9)	2 (1.8)
<b>Urinal (male only) N=27</b>	3 (11.1)	5 (18.5)	<b>10 (37.0)</b>	8 (29.6)	1 (3.7)
<b>Sanitary bin (female only) N= 85</b>	7 (8.2)	29 (34.1)	<b>36 (42.4)</b>	12 (14.1)	1 (1.2)



**Figure 4.5: Percentage answers for element of public toilet facilities according to category.**

Figure 4.5 shows the percentage of elements of public toilet facilities. The elements that received highest “very dirty” was toilet bowl with 14 participants (12.5%). Next, the highest “dirty” was toilet seat with 45 participants (40.2%). The highest “neutral” was door with 76 participants (67.9%). Then, the highest answer for clean and very clean were wash sink with 38 participants (33.9%) and lighting with 5 participants (4.5%).

#### 4.4 Level of Perception on Kuala Lumpur Public Toilet

In this section, there were four answer options which were strongly agree, agree, disagree and strongly disagree. Therefore, the participants were only required to select one answer for each question and they will be given a score for each answer. For strongly agree, the score was 4 points while for agree, the score was 3 points followed by disagree and strongly disagree with 2 points and 1 point respectively. The total score obtained from perception question was calculated and converted into categorical data which consist of three level. The score was then classified into either low, medium and high perception (Ajit,2011).

Table 4.3 shows the level of perception of public toilet in Kuala Lumpur. Based on table 4.3, the result shows that majority of participants has moderate perception with 82 participants (73.2%) while only 14 participants (12.5%) has low perception on Kuala Lumpur's public toilet. Lastly, there was also only 16 participants (14.3%) had high perception.

**Table 4.3: Level of perception**

<b>Perception level</b>	<b>N</b>	<b>%</b>
High	16	14.3
Moderate	82	73.2
Low	14	12.5

Table 4.4 shows summarized answer for each questions.

**Table 4.4: Perception on Public Toilet in Kuala Lumpur**

No	Question	N(%)			
		Strongly agree	Agree	Disagree	Strongly disagree
1.	Public toilet cleanliness is important to me.	<b>91</b> (81.3)	20 (17.9)	-	1 (0.9)
2.	Public toilet cleanliness is important to me when I decided whether I will use the toilet again or not.	<b>86</b> (76.8)	22 (19.6)	-	4 (3.6)
3.	I have high expectations of cleanliness for high budget toilets.	<b>71</b> (63.4)	33 (29.5)	7 (6.3)	1 (0.9)
4.	I have low expectation of cleanliness for low budget toilets.	28 (25.0)	<b>45</b> (40.2)	33 (29.5)	6 (5.4)
5.	A clean public toilet will increase my overall level of satisfaction.	<b>86</b> (76.8)	23 (20.5)	3 (2.7)	-
6.	A dirty public toilet will decrease my overall level of satisfaction.	<b>78</b> (69.6)	30 (26.8)	1 (0.9)	3 (2.7)
7.	There are enough public toilets to allow me to leave home without significant worry or concern about needing to use the toilet.	<b>53</b> (47.3)	45 (40.2)	12 (10.7)	2 (1.8)
8.	There is enough information about the whereabouts of public toilets and the facilities they offer.	34 (30.4)	<b>57</b> (50.9)	20 (17.9)	1 (0.9)
9.	Supermarkets have sufficient toilet facilities to enable me to shop	32 (28.6)	<b>60</b> (53.6)	19 (17.0)	1 (0.9)

there.

10. Town centers have sufficient toilet facilities to enable me to shop there.	32 (28.6)	<b>60</b> <b>(53.6)</b>	18 (16.1)	2 (1.8)
11. My choice of shops is limited because of lack of suitable toilets.	22 (19.6)	<b>46</b> <b>(41.1)</b>	40 (35.7)	4 (3.6)
12. I have had difficulty commuting to work within Kuala Lumpur due to a lack of toilet facilities between my home and workplace.	12 (10.7)	35 (31.3)	<b>55</b> <b>(49.1)</b>	10 (8.9)
13. There are sufficient suitable public toilet facilities for me to be able to meet my family or friends in public places.	22 (19.6)	<b>58</b> <b>(51.8)</b>	28 (25.0)	4 (3.6)
14. A lack of suitable public toilet facilities prevents me from being as physically active as I would like to be.	21 (18.8)	<b>52</b> <b>(46.4)</b>	36 (32.1)	3 (2.7)
15. A lack of suitable public toilet facilities prevents me from attending venues where leisure activities take place.	28 (25.0)	<b>57</b> <b>(50.9)</b>	24 (21.4)	3 (2.7)
16. There is enough suitable toilet provision to allow me to access green spaces such as parks, canals, woodland and other outdoor environments.	28 (25.0)	<b>67</b> <b>(59.8)</b>	16 (14.3)	1 (0.9)
17. I would access green spaces more regularly if there were more suitable toilet facilities.	35 (31.3)	<b>60</b> <b>(53.6)</b>	15 (13.4)	2 (1.8)
18. There is a need for improvement on design	39 (34.8)	<b>62</b> <b>(55.4)</b>	10 (8.9)	1 (0.9)

19. There is a need for improvement on maintenance	<b>56</b> <b>(50.0)</b>	48 (42.9)	6 (5.4)	2 (1.8)
20. There is a need for improvement on safety	<b>55</b> <b>(49.1)</b>	46 (41.1)	10 (8.9)	1 (0.9)



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#### 4.5 Result of Community Assessment on KTM Commuter Public Toilet

In this section, participants were required to assess the KTM Commuter public toilet that they have used. There were only two answer option for each question which were Yes and No. 2 marks will be given to Yes answer and only 1 mark will be given to No answer. The total score was then calculated and classified into groups; Pass and Not Pass. The passing mark score was above 18 while score below 18 will not pass the assessment. Table 4.5 shows the result of the assessment. Majority of KTM Commuter public toilet pass the assessment (58.9%) while the others did not pass (41.4%).

**Table 4.5: Result of community assessment on KTM Commuter public toilet**

Assessment	N	%
Pass	66	58.9
Not Pass	46	41.4

Table 4.6 summarized the answers for each question

**Table 4.6: Community assessment on KTM Commuter public toilet**

No	Question	N(%)	
		Yes	No
1.	Signage is clear and well visible from distance. Entrance is clean, uncluttered.	<b>108</b> <b>(96.4)</b>	4 (3.6)
2.	Walls, ceiling are clean, dry, undusted and not littered.	<b>80</b> <b>(71.4)</b>	32 (28.6)
3.	Floors and walls are clean, intact and dry.	<b>74</b> <b>(66.1)</b>	38 (33.9)
4.	There is no bad smell in the toilet.	51 (45.5)	<b>61</b> <b>(54.5)</b>
5.	Ventilation/ openings for air circulation are in place and functioning.	<b>86</b> <b>(76.8)</b>	26 (23.2)
6.	Suggestion box and education material are in place.	51 (45.5)	<b>61</b> <b>(54.5)</b>
7.	Basic amenities are in place (toilet paper, soap, bins, mirror, tissue, etc)	<b>82</b> <b>(73.2)</b>	30 (26.8)
8.	Resource and water saving measures (sensor taps, natural light)	<b>82</b> <b>(73.2)</b>	30 (26.8)
9.	Privacy: maze entrance, urinals and cubicle partitions	<b>88</b> <b>(78.6)</b>	24 (21.4)
10.	Taps, hand dryers, litter bins are in place and working.	<b>107</b> <b>(95.0)</b>	5 (4.5)

11. No leakage, no damage to the fittings, fixture and plumbing.	<b>92</b> <b>(82.1)</b>	20 (17.9)
12. Tissue/ soap dispenser are in place, working and filled.	<b>84</b> <b>(75.0)</b>	28 (25.0)
13. Wash area is overall clean, dry, tidy and not littered.	<b>75</b> <b>(67.0)</b>	37 (33.0)
14. Cubicle door is clean, functioning and latched; lock/ latch are intact	<b>94</b> <b>(83.9)</b>	18 (16.1)
15. Toilet has a toilet seat and lid	<b>98</b> <b>(87.5)</b>	14 (12.5)
16. Coat hanger is in place and intact	<b>92</b> <b>(82.1)</b>	20 (17.9)
17. Toilet bowl/ squat are intact and unclogged, not stained	<b>70</b> <b>(62.5)</b>	42 (37.5)
18. Cubicle floor is uncluttered, clean and dry	<b>66</b> <b>(58.9)</b>	46 (41.1)
19. Manual/ auto flush is clean and functioning	<b>88</b> <b>(78.6)</b>	24 (21.4)
20. Toilet paper dispenser is intact and filled.	<b>65</b> <b>(58.0)</b>	47 (42.0)
21. Sanitary bin (hand free with foot pedal) with liners is in place, is dry, clean, sanitized, odorless, intact	<b>57</b> <b>(67.1)</b>	28 (32.9)
22. Waste bin (hand-free with foot pedal) with liners is in place, is dry, clean, sanitized, odorless, intact	<b>83</b> <b>(74.1)</b>	29 (25.9)
23. Urinals are intact and unclogged, not stained	<b>19</b> <b>(70.4)</b>	8 (29.6)
24. Manual/ auto flush is clean and functioning	<b>21</b> <b>(77.8)</b>	7 (22.2)

25. Internal and external lighting is in place and functioning	<b>98</b> <b>(87.5)</b>	14 (12.5)
26. There is appropriate CCTV/ Patrolling	<b>60</b> <b>(53.6)</b>	52 (46.4)
27. Walls and ceilings are intact, not cracked	<b>92</b> <b>(82.1)</b>	20 (17.9)

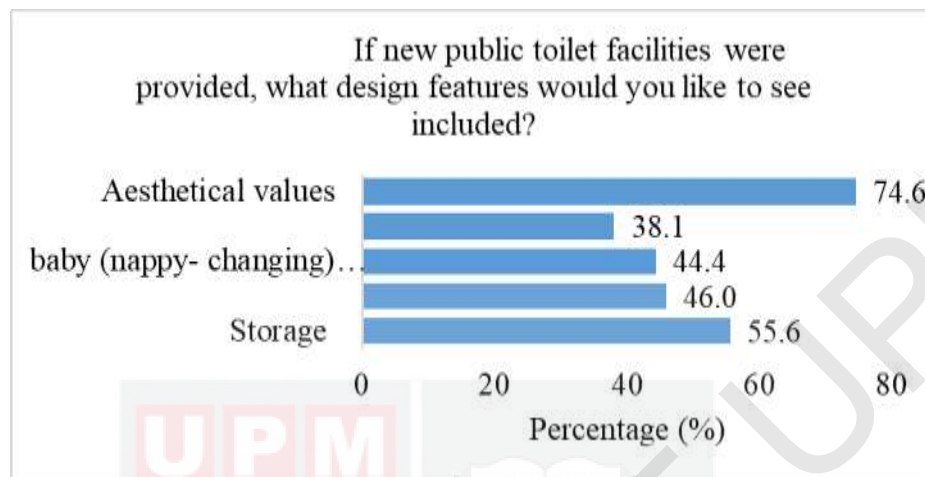
#### 4.6 Association between Perception and Community Assessment

Pearson correlation test was used to analyzed association between perception and assessment. As tabulated in table 3.5, there is no association between perception and assessment as the p- value was 0.139 ( $>0.05$ ) with correlation coefficient,  $r = 0.141$ .

**Table 4.7: Association between Perception and Assessment**

Variable	Assessment	
	r	p- value
<b>Perception</b>	<b>0.141</b>	<b>0.139</b>

#### 4.7 Suggestion for improvement of public toilet facilities



**Figure 4.6: Suggestion for improvement of public toilet facilities**

In this section, two questions were asked about the suggestion for improvement of public toilet facilities. The first question is a multiple choice question. As in the Figure 4.6, The highest suggestion for improvement was aesthetical values with 91 participants (74.6%) followed by storage facilities with 68 participants (55.6%). The least suggested improvement was feature to deter anti-social behavior with 46 participants (38.1%). The second question was open-ended question. Participants were asked to state comments or suggestion for improvement for the public toilet in Kuala Lumpur. The respondent suggested to provide place to put their belongings and cloth hanger in each toilet cubicle. There is also respondent suggested to increase safety inspection at the public toilet by regularly checking for hidden cameras installed by irresponsible citizen. The respondent also suggested to increase more promotion on how to take care of public toilet. Most of the respondents suggested to always keep clean in the toilet and suggested regular

cleaning and maintenance to ensure the toilet is working properly. There is also respondent commented that usually toilet bowl is not clean and the toilet is lack of tissue and soap. Therefore, tissue and soap need to be regularly replaced. Even so, there are still respondents who praises the public toilet saying the public toilet is clean and smell fragrance.



## CHAPTER 5

### DISCUSSION

#### 5.1 Respondents Sociodemographic

Table 4.1 summarized the sociodemographic characteristic of respondents. Most of the respondents were females (75.9%) showing females used public transport more than males (Bachok, Mohamed Osman, Khalid and Ibrahim, 2013). For race, 87.5% of respondents were Malays, followed by Indian (8.0%), Chinese (3.6%) and other race (0.9%). 64.3% of participants came from the age group of 16-24 years old. This mean most of the participants was from teenager to young adults which is common to use public transport as their means of travel option (Dahalan et al., 2015). 29.5 % of respondents came from the age group of 25-40 years old. Only 3.6% and 2.7% came from the age group 41-60 years old and above 60 years old respectively. For education level, most of the participants have bachelor's degree (63.4%) and the lowest participant came from primary education level (1.8%). The same result was recorded from Dahalan et al.,2015 showing that respondents with higher learning education used more public transport than primary education level.

## **5.2 General Information**

Most of the participants occasionally use the public toilet (84.8%). Then, three quarters of the participants agreed that the public toilet is sometimes not well presented and unclean. Majority of the participants also chose public toilet user (82.5%) as the most responsible person to keep the toilet clean. A similar result was obtained from Singapore Toilet Study, 2011 where the user is the most responsible for keeping the toilet clean. Lastly, public toilet is important for its image (82.1%), followed by mental health (75.9%). The lowest is physical health (36.6%). This is in coherence with Talha, 2016 stated that image of public toilet is important.

## **5.3 Experience on using Kuala Lumpur Public Toilet Facilities**

For the experience of using public toilet facilities, most of the public toilet facilities were rated neutral except for the toilet seat that was rated dirty (40.2%). Same response was obtained from Singapore Toilet Study, 2011. Then, according to each category of answers, the elements that received highest “very dirty” was toilet bowl (12.5%). Next, the highest “dirty” was toilet seat (40.2%). The highest “neutral” was door (67.9%). Then, the highest answer for clean and very clean were wash sink (33.9%) and lighting (4.5%) respectively. Dirty toilet bowl and toilet was because there was user that did not flush after use and presence of litter in toilet bowls or urinals (Singapore Toilet Study, 2011). Besides that, there are also users who stand on the toilet seat leaving footprints on it.

#### **5.4 Level of Perception on Kuala Lumpur Public Toilet**

For the level of perception, majority of participants has moderate perception (73.2%) while only 12.5% has low perception on Kuala Lumpur's public toilet. There was also only 14.3% had high perception. This result is different from a study conducted by Greater Bendigo City Council which found that the community has poor perception towards public toilet. This was due to presence of graffiti and vandalism (Greater Bendigo Council, 2017). It is different with Malaysia public toilet as there is very less vandalism towards public toilet. Another study in Tamil Nadu recorded high perception of their public toilet (TNUSSP, 2018).

The frequency of use of public toilet in Kuala Lumpur which reported that 84.8% of participants occasionally use public toilet could explain why the participants has moderate perception. 76.8% strongly agreed that cleanliness of public toilet is important when needed to decide to use the toilet again or not. Bad level cleanliness would leave bad impression and experience towards the user which will prevent the user from using the toilet again. This is the same as another study which finds cleanliness as a very important aspect for public toilet (TNUSSP, 2018).

However, 47.3% strongly agreed that there are enough public toilets that allow the user to leave home without significant worry or concern about needing to use the toilet. This is also different with another study which found that people are feeling reluctant to leave home and visit areas as they are afraid they cannot find a public toilet, therefore wanting more provision of public toilet (Department of Communities and Local Government, 2008). The participants also disagree to the statement of having difficulty commuting to work within Kuala Lumpur due to a lack of toilet facilities (51.8%). 51.8% agreed that there are sufficient public toilet facilities for them to meet family or friends on public places. Other than that, they did agree that a lack of suitable public toilet facilities would prevent them from being physically active (46.4%), attending venues where leisure activities take place (50.9%) and accessing green spaces (53.6%). 53.6% of participants strongly agreed there is a need for improvement on maintenance (50%) and safety (49.1%). This is different from Singapore Toilet Study where the improvement should be in term of maintenance and design. Maintenance is needed to fix the broken part of public toilet facilities such as broken flush.

### **5.5 Community Assessment on KTM Commuter Public Toilet**

58.9% of KTM Commuter public toilet passed the assessment while 41.1% did not passed the assessment. Based on the result, 54.5% of public toilet has a presence of bad smell and does not have suggestion box and education material (54.5%). Bad smell could be present due to not flushing after use as found in Singapore Toilet Study, 2011. However, almost all elements passed the criteria such as walls (71.4%), floor (66.1%), signage (96.4%), ventilation (76.8%), hand dryer and litter bins (95.0%) and flush (78.6%). Only the toilet paper dispenser was 58.0% intact and filled and 42.0% were unfilled. The result obtained is different from Atteh Donkor and Acheampong, 2015 where many facilities were in urgent need of maintenance. For instance, dysfunctional electrical fittings, poor drainage and clogging and broken water closet.

### **5.6 Association between Perception and Assessment**

For the main objectives, as shown in the result, there are no association between perception of public toilet and the public toilet assessment with p value =0.139 ( $>0.05$ ). The participants could have moderate perception about public toilet because they occasionally used the public toilet as mentioned earlier. Then, 58.9% of KTM Commuter public toilet has passed the assessment which showed that some of the toilet has improved except for a few which will require attention on how to improve it.

## 5.7 Suggestion for Improvement of Public Toilet Facilities

For the suggestion for improvement of public toilet facilities, aesthetical value was highly chosen as the improvement with 74.6% vote. Aesthetical values are values that an object or event that possess capacity to elicit pleasure or positive value. It is a value that gives out warm, beautiful and calming view that can be obtained from trees, plants, flowers, decoration and artwork or mural painting. The next suggestion is storage (55.6%). Having storage at public toilet could ease the user to keep their belonging while using the toilet. The least suggested is feature to deter anti- social behavior (38.1%). The result obtained was different from McDermott and Kernohan, 2010 where the most suggested item for improvement was baby changing facilities. In term of safety, respondent suggested to increase security through regular inspection for hidden camera that was installed in the toilet by inappropriate citizen. This might be able to increase confidence when using the public toilet. Mostly, the respondents suggested that public toilet user is the most important person to keep the toilet clean by using it properly. Therefore, they suggested to increase more promotion on “how to take care of the public toilet”. Posters about the do’s and don’ts in public toilet should be displayed in each cubicle to increase awareness about the right way to use public toilet. Education should be made to ensure the user use the toilet properly such as not squatting on the toilet seat, flushing after use and not littering the toilet bowl. Lastly, a respondent also suggested to put cloth hanger at each of the cubicle.

## 5.8 Study Limitations

In this study there are some limitation. Firstly, the time frame is really short and the researcher need to keep with the schedule. Therefore, only one type of community could be selected by the researcher which are public transport user specifically KTM Commuter user. If larger samples were obtained and involved in larger community, the different in result of assessment could be obtained between different type of community such as at the shopping malls, recreational parks, and other public areas. Therefore, the result of the assessment was only valid for the KTM Commuter public toilet which cannot represent the other public toilet located in Kuala Lumpur.

Besides that, there is also recall bias. When filling in the assessment of public toilet, researcher did not ask the participants to go and assess the toilet at that time. The researcher only asked the participants to fill in the assessment based on their experience of using the KTM Commuter public toilet. Therefore, there could have been recall bias where the participants forgot the conditions of public toilet and filled in the assessment form abruptly. This could have affected the result of the assessment and therefore also affecting the association between perception and assessment.

Finally, perception question could also affect the association between perception and assessment. Originally, the perception question was generalized towards all public toilet in Kuala Lumpur. However, since there is only one type of community selected in the study, the perception question could have affect the association between perception and assessment of KTM Commuter public toilet since the perception was generalized towards all public toilet in Kuala Lumpur. There is also limited study on community perception and assessment, therefore, it is difficult to make comparison with past studies as there are limited baseline data available.

## 5.9 Conclusion

In conclusion, there are no association between community perception and assessment. Public toilet user is the most important person to keep the toilet clean followed by the toilet cleaner and toilet owner. Majority of the community has moderate perception on public toilet which they strongly agreed that there is a need for improvement on maintenance and safety. Regular maintenance should be made by the toilet owner to ensure the toilet is working properly. Regular cleaning should also be made by toilet cleaner based on the amount of usage the facilities receive (Public Toilet Strategy 2015-2025, 2016). All broken part of toilet should be immediately report to the toilet owner for repairing. Meanwhile, education should be made by displaying poster in the toilet about the do's and don'ts in the toilet. Besides that, earlier education from pre- schools, schools, and general public should be emphasized. Many platforms could be used to educate the user such as through social network, televisions and radio.

## 5.10 Recommendation

Firstly, since the most important person in keeping the toilet clean is the public toilet user, further studies could be done to assess the knowledge, attitude and practice of the public when using public toilet. By determining their level of knowledge, attitude and practice, government and private sector will be able to continue with further action in improving the public toilet. Besides that, more assessment could be made at another location in Kuala Lumpur such as at the shopping malls and recreational areas as mentioned earlier so that comparison of different location could be made. Finally, it is also recommended to conduct further studies on public toilet at rural areas. Therefore, comparison of the condition of public toilet between rural and urban area could be identified.

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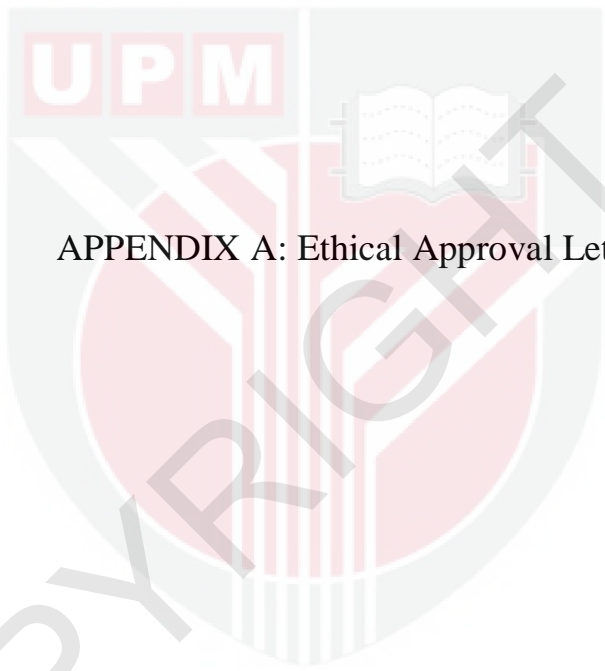
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**APPENDIX A: Ethical Approval Letter**

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**ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS  
(JKEUPM)  
UNIVERSITI PUTRA MALAYSIA**

<b>Research title</b>	: Community Perception and Assessment on Public Toilet in Kuala Lumpur, Malaysia.
<b>Study Site</b>	: KTM Commuter public toilet, Kuala Lumpur, Malaysia
<b>JKEUPM Ref No.</b>	: JKEUPM-2019-497
<b>Researcher</b>	: Nurul Huda Mohamad Isham
<b>Supervisor</b>	: Assoc. Prof. Dr. Haliza Abdul Rahman

Documents received and reviewed with reference to the above study:

1. Ethics Application Form, Version 1 dated 29/11/2019
2. Respondent Information Sheet & Consent (Malay), Version 1 dated 29/11/2019
3. Respondent Information Sheet & Guardian's/Parent's Consent (Malay), Version 1 dated 29/11/2019
4. Proposal (English), Version 2 dated 23/1/2020
5. Questionnaires/ Interviews (English), Version 1 dated 29/11/2019
6. Questionnaires/ Interviews (Malay), Version 1 dated 29/11/2019
7. Curriculum Vitae of:
  - a. Assoc. Prof. Dr. Haliza Abdul Rahman

The University Research Ethics Committee, Universiti Putra Malaysia (JKEUPM) operates in accordance to the ICH-GCP Guidelines.

Decision by JKEUPM:

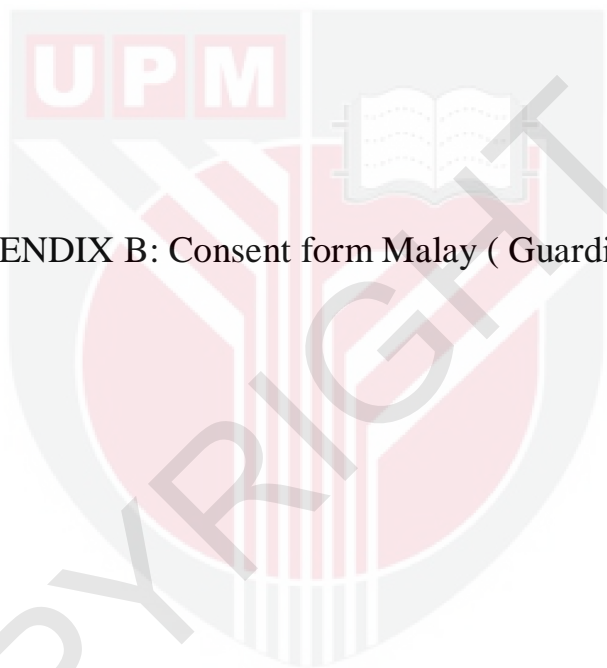
- Approved
- Permission MUST BE OBTAINED from the respective hospitals/ institutions before conducting the research**
- Disapproved

Please note that the approval is **VALID UNTIL 10 FEBRUARY 2021**

Researchers should comply with the following:

- I. Complete a Study Final Report upon study completion (Form 3.2).
- II. Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

**APPENDIX B: Consent form Malay ( Guardian/Parents)**



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**JAWATANKUASA ETIKA UNIVERSITI UNTUK  
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)  
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,  
SELANGOR, MALAYSIA**

## **BORANG 2.5: PENERANGAN DAN PERSETUJUAN IBUBAPA/PENJAGA**

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

### **1.TAJUK KAJIAN**

PERSEPSI DAN PENILAIAN MASYARAKAT TENTANG TANDAS AWAM DI KUALA LUMPUR, MALAYSIA

### **2. PENGENALAN**

Anda dialu-alukan untuk menyertai kajian ini. Penglibatan anda adalah secara sukarela. Kajian ini bertujuan untuk menyiasat persepsi dan penilaian masyarakat tentang tandas awam di Kuala Lumpur, Malaysia.

### **3. APAKAH YANG PERLU ANDA LAKUKAN?**

Responden perlu menjawab borang soal selidik yang telah disediakan oleh penyelidik bagi mendapatkan maklumat berkaitan dengan kajian ini.

### **4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?**

Individu yang berumur kurang dari umur 15 tahun dan individu yang bukan warganegara Malaysia tidak digalakkan untuk menyertai kajian ini.

### **5. APAKAH FAEDAH MENYERTAI KAJIAN INI?**

#### **a) KEPADA ANAK/JAGAAN SAYA SEBAGAI PESERTA?**

Maklumat daripada kajian ini akan menentukan persepsi dan penilaian masyarakat terhadap tandas awam di Kuala Lumpur. Maklumat dan hasil kajian yang diperolehi dapat dijadikan sumber kepada kerajaan dan pembuat polisi untuk mengambil inisiatif dan langkah untuk menambahbaik keadaan tandas awam di Kuala Lumpur.

#### **b) KEPADA PENYELIDIK?**

Maklumat daripada kajian dapat membantu penyelidik mengkaji persepsi dan penilaian masyarakat terhadap tandas awam. Selain itu, data yang telah dikaji dapat dijadikan rujukan untuk penyelidik lain yang berminat untuk membuat kajian lanjutan yang berkaitan dengan tajuk kajian ini di bawah bidang kesihatan persekitaran dan pekerjaan.

## **6. ADAKAH IA BERISIKO?**

Tiada risiko yang dijangkakan untuk mengambil bahagian dalam kajian ini.

## **7. ADAKAH MAKLUMAT DAN IDENTITI ANAK/JAGAAN SAYA KEKAL RAHSIA?**

Maklumat yang akan kami peroleh dari kajian ini akan kekal sulit dan data anda tidak akan didedahkan. Ini adalah bagi tujuan penyelidikan semata- mata.

## **8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEPANJANG PENYELIDIKAN INI?**

Jika anda mempunyai sebarang soalan atau pertanyaan, anda boleh menghubungi penyelia bagi penyelidikan ini, Prof. Madya Dr. Haliza binti Abdul Rahman, di talian 03-89472643 dan emel [dr.haliza@upm.edu.my](mailto:dr.haliza@upm.edu.my) atau menghubungi penyelidik, Nurul Huda binti Mohamad Isham di 017-3954295 dan emel [nurulhuda.isham@gmail.com](mailto:nurulhuda.isham@gmail.com) .

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini

## 9. PERSETUJUAN

Saya..... No Kad Pengenalan. ....  
beralamat.....  
.....dengan ini secara sukarela bersetuju membenarkan  
\*anak / jagaan saya ..... menyertai **penyelidikan tersebut di atas \*(klinikal/percubaan ubat-ubatan/rakaman video/kumpulan sasaran/temuduga/soal selidik).**

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi metodologi, risiko dan komplikasi (seperti yang tercatat dalam Helaiian Penerangan). Saya memahami bahawa \*anak / jagaan saya berhak menarik diri dari penyelidikan ini pada bila-bila masa tanpa memberi sebarang alasan.Saya juga memahami bahawa sebarang maklumat yang berkaitan identiti \*anak / jagaan saya akan dirahsiakan.

Saya\* berminat / tidak berminat untuk mengetahui keputusan kajian yang **melibatkan** \*anak / jagaan saya.

**I setuju/tidak bersetuju untuk imej/gambar/rakaman video/ rakaman suara berkaitan dengan anak/ jagaan saya digunakan dalam apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).**

\*potong yang tidak berkenaan

Tandatangan ..... Tandatangan .....  
(Ibubapa/ Penjaga) (Saksi)

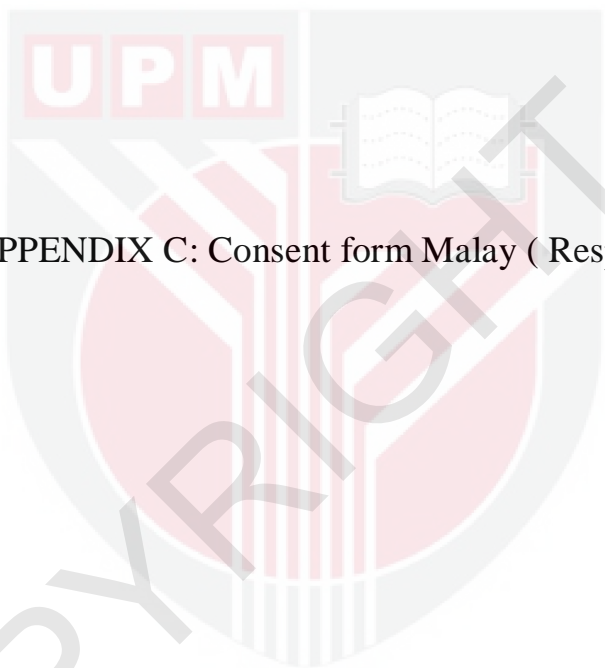
Tarikh : ..... Nama : .....

No. K/P: .....

Saya mengesahkan bahawa saya telah menerangkan kepada ibubapa/penjaga responden mengenai sifat dan tujuan penyelidikan tersebut di atas.

Tarikh ..... Tandatangan .....  
(Penyelidik)

**APPENDIX C: Consent form Malay ( Respondent)**



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UNIVERSITI PUTRA MALAYSIA

**JAWATANKUASA ETIKA UNIVERSITI UNTUK  
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)  
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,  
SELANGOR, MALAYSIA**

## **BORANG 2.4: PENERANGAN DAN PERSETUJUAN RESPONDEN**

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

### **1.TAJUK KAJIAN**

PERSEPSI DAN PENILAIAN MASYARAKAT TENTANG TANDAS AWAM DI KUALA LUMPUR, MALAYSIA

### **2. PENGENALAN**

Anda dialu-alukan untuk menyertai kajian ini. Penglibatan anda adalah secara sukarela. Kajian ini bertujuan untuk menyiasat persepsi dan penilaian masyarakat tentang tandas awam di Kuala Lumpur, Malaysia.

### **3. APAKAH YANG PERLU ANDA LAKUKAN?**

Responden perlu menjawab borang soal selidik yang telah disediakan oleh penyelidik bagi mendapatkan maklumat berkaitan dengan kajian ini.

### **4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?**

Individu yang berumur kurang dari umur 15 tahun dan individu yang bukan warganegara Malaysia tidak digalakkan untuk menyertai kajian ini.

### **5. APAKAH FAEDAH MENYERTAI KAJIAN INI?**

#### **a) KEPADA ANDA SEBAGAI PESERTA?**

Maklumat daripada kajian ini akan menentukan persepsi dan penilaian masyarakat terhadap tandas awam di Kuala Lumpur. Maklumat dan hasil kajian yang diperolehi dapat dijadikan sumber kepada kerajaan dan pembuat polisi untuk mengambil inisiatif dan langkah untuk menambahbaik keadaan tandas awam di Kuala Lumpur.

#### **b) KEPADA PENYELIDIK?**

Maklumat daripada kajian dapat membantu penyelidik mengkaji persepsi dan penilaian masyarakat terhadap tandas awam. Selain itu, data yang telah dikaji dapat dijadikan rujukan untuk penyelidik lain yang berminat untuk membuat kajian lanjutan yang berkaitan dengan tajuk kajian ini di bawah bidang kesihatan persekitaran dan pekerjaan.

### **6. ADAKAH IA BERISIKO?**

Tiada risiko yang dijangkakan untuk mengambil bahagian dalam kajian ini.

## 7. ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?

Maklumat yang akan kami peroleh dari kajian ini akan kekal sulit dan data anda tidak akan didedahkan. Ini adalah bagi tujuan penyelidikan semata-mata.

## 8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEMASA MENGIKUTI PENYELIDIKAN INI?

Jika anda mempunyai sebarang soalan atau pertanyaan, anda boleh menghubungi penyelia bagi penyelidikan ini, Prof. Madya Dr. Haliza binti Abdul Rahman, di talian 03-89472643 dan emel [dr.haliza@upm.edu.my](mailto:dr.haliza@upm.edu.my) atau menghubungi penyelidik, Nurul Huda binti Mohamad Isham di 017-3954295 dan emel [nurulhuda.isham@gmail.com](mailto:nurulhuda.isham@gmail.com) .

*Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini \_\_\_\_\_*

## 9. PERSETUJUAN

Saya..... No Kad Pengenalan.

.....

beralamat.....

.....dengan ini bersetuju untuk mengambil bahagian secara sukarela dalam penyelidikan yang tersebut di atas (soal selidik).

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi metodologi, risiko dan komplikasi (seperti tertulis pada Helaian Penerangan Responden).

Saya memahami bahawa saya berhak menarik diri dari penyelidikan ini pada bila-bila masa tanpa memberi sebarang alasan. Saya juga memahami bahawa sebarang maklumat yang berkaitan identiti saya akan dirahsiakan.

Saya\* berminat / tidak berminat untuk mengetahui keputusan kajian yang melibatkan saya.

Saya bersetuju/tidak bersetuju untuk imei/gambar/rakaman video/ rakaman suara digunakan dalam apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).

\*potong yang tidak berkenaan

Tandatangan ..... Tandatangan

.....

(Responden)

(Saksi)

Tarikh :.....

Nama

.....

No. K/P: .....

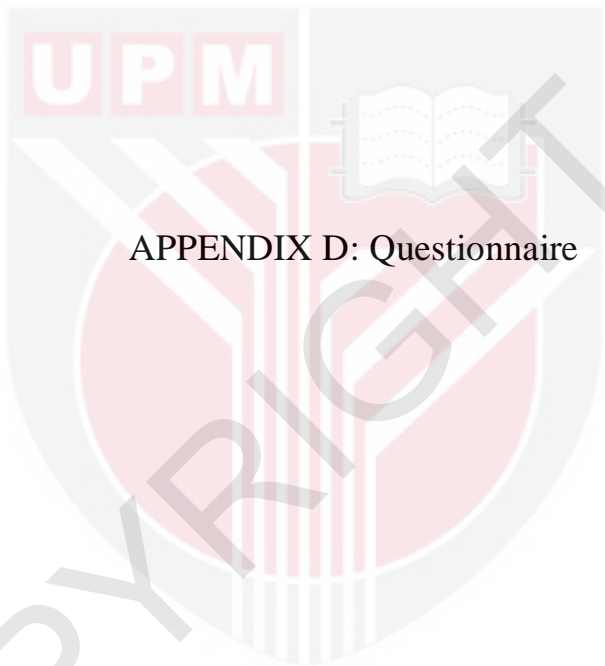
Saya mengesahkan bahawa saya telah menerangkan kepada responden ini sifat dan tujuan penyelidikan yang tersebut di atas.

Tarikh .....

Tandatangan

.....

(Penyelidik)



APPENDIX D: Questionnaire

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TARIKH:

RESPONDENT ID NO :

KOD ZON :



TAJUK KAJIAN/ RESEARCH TITLE:

**COMMUNITY PERCEPTION AND ASSESSMENT ON PUBLIC TOILET IN KUALA LUMPUR, MALAYSIA**

NAMA PENKAJI/ RESEARCHER'S NAME:  
**NURUL HUDA BINTI MOHAMAD ISHAM**

NAMA PENYELIA/ SUPERVISOR'S NAME:  
**PROF MADYA DR HALIZA BINTI ABDUL RAHMAN**

NO. TELEFON PENYELIA/ SUPERVISOR'S CONTACT NO:  
**03-89472643**

Borang kaji selidik ini mengandungi lima bahagian:

*This questionnaire consist of five sections:*

1.	Bahagian/ Section A:	Maklumat Sosiodemografik responden / Respondent sociodemographic information
2.	Bahagian/ Section B:	Soalan umum/ General question
3.	Bahagian/ Section C:	Pengalaman menggunakan kemudahan asas tandas awam di Kuala Lumpur / Experience on Kuala Lumpur basic public toilet facilities
4.	Bahagian/ Section D:	Persepsi tentang tandas awam/ Perception about public toilet
5.	Bahagian/ Section E:	Penilaian tandas awam/ Assessment on public toilet
6.	Bahagian/ Section F:	Cadangan untuk penambahbaikan tandas awam/ Suggestion for improvement of public toilet

**BAHAGIAN A: MAKLUMAT SOSIODEMOGRAFIK RESPONDEN**  
**SECTION A: RESPONDENT SOCIODEMOGRAPHIC INFORMATION**

Sila tandakan pada kotak jawapan.  
*Please tick (/) the answer choice box.*

1. Umur/*Age* :
  
2. Jantina/*Gender* : Lelaki  Perempuan
3. Bangsa/*Race* : Melayu/ Cina/*Chinese*   
India/*Indian*  Lain-lain/*Others*
4. Status perkahwinan/*Marital status* :  
Bujang / *Single*   
Sudah berkahwin/*Married*   
Bercerai/*Divorced*

5. Tahap pendidikan tertinggi / *Highest level of education:*

Sekolah rendah /  Ijazah Sarjana Muda/   
*Primary school* *Bachelor's Degree*

Sekolah menengah /  Ijazah Sarjana/   
*Secondary school* *Master's Degree*

Diploma /Matrikulasi  PhD   
*Diploma/ Matriculation*

6. Pekerjaan/ *Occupation:*

Sector kerajaan/  Pesara/   
*Government sector* *Retiree*

Sector swasta/  Tidak bekerja/   
*Private sector* *Unemployed*

Bekerja sendiri/  Pelajar/   
*Self-employed*

7. Pendapatan keluarga dalam sebulan/ *Family income in a month:*

Kurang dari / *Less than RM1000*  RM 3001 – RM4000

RM 1001- RM2000  RM4001- RM5000

RM 2001- RM 3000  Lebih dari/

*More than RM5000*

**BAHAGIAN B: SOALAN UMUM**

**SECTION B: GENERAL QUESTION**

1. Berapa kerapkah anda menggunakan kemudahan tandas awam di Kuala Lumpur?  
*How often do you use public toilet facilities in Kuala Lumpur?*

Kadang- kadang/ *Occasionally*

Setiap hari / *Daily*

Dalam seminggu/ *Weekly*

Dalam sebulan/ *Monthly*

2. Secara umum, apa pendapat anda tentang tandas awam di Kuala Lumpur?  
*In general, what is your opinion about public toilet in Kuala Lumpur?*

Keadaan yang baik  
*Well presented*

Kadang- kadang tidak dalam keadaan yang baik dan tidak bersih  
*Sometimes not well presented and unclean*

Selalunya tidak dalam keadaan yang baik dan kotor  
*Often not well presented and dirty*

3. Pada pendapat anda, siapakah yang bertanggungjawab untuk memastikan tandas ceria untuk anda? Sila susun mengikut aturan tanggungjawab.  
*In your opinion, who is responsible for keeping the toilets happy for you?*

Kerajaan/  
*Government*

Pengguna tandas/  
*Public toilet users*

Cleaners/  
*Tukang cuci*

Badan bukan kerajaan/  
*Non- governmental organization*

Pemilik tandas awam/  
*Owner of public toilet*

4. Apakah kepentingan kebersihan tandas awam kepada anda? Anda boleh memilih lebih daripada satu jawapan.

*What is the importance of public toilet cleanliness to you? You may choose more than one answer.*

Kesihatan fizikal / Physical health

Imej / Image

Kesihatan sosial/ Social well- being

Kesihatan mental/ Mental health



**BAHAGIAN C: PENGALAMAN MENGGUNAKAN KEMUDAHAN ASAS TANDAS  
AWAM DI KUALA LUMPUR**

**SECTION C: EXPERIENCE ON KUALA LUMPUR BASIC PUBLIC TOILET FACILITIES**

Sila tandakan (/) yang berkenaan.

Please tick(/) relevant answer.

No		Sangat kotor <i>Very dirty</i>	Kotor <i>Dirty</i>	Neutral <i>Neutral</i>	Bersih <i>Clean</i>	Sangat bersih <i>Very clean</i>
1.	Pintu <i>Door</i>					
2.	Dinding <i>Walls</i>					
3.	Lantai <i>Floor</i>					
4.	Mangkuk tandas <i>Toilet bowl</i>					
5.	Tempat duduk tandas <i>Toilet seat</i>					
6.	Urinal (lelaki sahaja) <i>Urinal (male only)</i>					
7.	Sinki basuh <i>Wash sink</i>					
8.	Tong sampah <i>Litter bin</i>					
9.	Tong sanitari (wanita sahaja) <i>Sanitary bin (female only)</i>					
10.	Pengering tangan <i>Hand-dryer</i>					
11.	Pencahayaan <i>Lighting</i>					
12.	Ventilasi <i>Ventilation</i>					
13.	Udara <i>Air</i>					

**BAHAGIAN D: PERSEPSI ANDA APABILA MENGGUNAKAN TANDAS AWAM**  
**SECTION D: YOUR PERCEPTION WHEN USING PUBLIC TOILET**

Sila tandakan (/) sejauh mana anda setuju dengan pernyataan di bawah:  
 Please tick (/) the extent to which you agree with the following statements:

No	Pernyataan Statement	Sangat setuju <i>Strongly agree</i>	Setuju <i>Agree</i>	Tidak setuju <i>Disagree</i>	Sangat tidak setuju <i>Strongly disagree</i>
1.	Kebersihan tandas adalah penting kepada saya. <i>Public toilet cleanliness is important to me.</i>				
2.	Kebersihan tandas adalah penting kepada saya apabila saya membuat keputusan samada akan menggunakan lagi tandas itu atau tidak. <i>Public toilet cleanliness is important to me when I decided whether I will use the toilet again or not.</i>				
3.	Saya mempunyai jangkaan yang tinggi untuk tandas awam yang mempunyai bajet yang tinggi. <i>I have high expectations of cleanliness for high budget toilets.</i>				
4.	Saya mempunyai jangkaan yang rendah untuk tandas awam yang mempunyai bajet yang rendah. <i>I have low expectation of cleanliness for low budget toilets.</i>				

No	Pernyataan Statement	Sangat setuju <i>Strongly agree</i>	Setuju <i>Agree</i>	Tidak setuju <i>Disagree</i>	Sangat tidak setuju <i>Strongly disagree</i>
5.	Tandas awam yang bersih akan meningkatkan tahap kepuasan saya secara menyeluruh. <i>A clean public toilet will increase my overall level of satisfaction.</i>				
6.	Tandas awam yang kotor akan menurunkan tahap kepuasan saya secara menyeluruh. <i>A dirty public toilet will decrease my overall level of satisfaction.</i>				
7.	Terdapat tandas awam yang sesuai dan cukup membolehkan saya meninggalkan rumah tanpa rasa risau untuk menggunakan tandas. <i>There are enough suitable public toilets to allow me to leave home without significant worry or concern about needing to use the toilet.</i>				
8.	Terdapat maklumat yang mencukupi tentang keberadaan tandas awam dan kemudahan yang disediakan. <i>There is enough information about the whereabouts of public toilets and the facilities they offer.</i>				
9.	Pasaraya mempunyai kemudahan tandas awam yang mencukupi membolehkan saya membeli di sana. <i>Supermarkets have sufficient toilet facilities to enable me to shop there.</i>				

No	Pernyataan Statement	Sangat setuju <i>Strongly agree</i>	Setuju <i>Agree</i>	Tidak setuju <i>Disagree</i>	Sangat tidak setuju <i>Strongly disagree</i>
10.	Pusat bandar mempunyai kemudahan tandas awam yang mencukupi membolehkan saya membeli belah di sana. <i>Town centres have sufficient toilet facilities to enable me to shop there.</i>				
11.	Pemilihan tempat beli belah saya terhad kerana kekurangan tandas awam yang sesuai. <i>My choice of shops is limited because of a lack of suitable toilets.</i>				
12.	Saya sukar bergerak ke tempat kerja di sekitar Kuala Lumpur disebabkan oleh kekurangan tandas awam di antara rumah dan tempat kerja saya. <i>I have had difficulty commuting to work, within Kuala Lumpur, due to a lack of toilet facilities between my home and workplace.</i>				
13.	Terdapat kemudahan tandas awam yang mencukupi untuk membolehkan saya bertemu keluarga dan rakan di tempat awam. <i>There are sufficient suitable public toilet facilities for me to be able to meet my family or friends in public spaces.</i>				

No	Pernyataan Statement	Sangat setuju <i>Strongly agree</i>	Setuju <i>Agree</i>	Tidak setuju <i>Disagree</i>	Sangat tidak setuju <i>Strongly disagree</i>
14.	Kekurangan kemudahan tandas awam yang sesuai menghalang saya menjadi aktif secara fizikal sebagaimana yang saya mahu. <i>A lack of suitable public toilet facilities prevents me from being as physically active as I would like to be.</i>				
15.	Kekurangan kemudahan tandas awam yang sesuai menghalang saya pergi ke tempat- tempat aktiviti riadah. <i>A lack of suitable public toilet facilities prevents me from attending venues where leisure activities take place.</i>				
16.	Terdapat peruntukan tandas yang cukup untuk membolehkan saya mengakses ruang hijau seperti taman, terusan, hutan dan persekitaran luar yang lain. <i>There is enough suitable toilet provision to allow me to access green spaces such as parks, canals, woodland and other outdoor environments.</i>				
17.	Saya akan mengakses ruang hijau dengan lebih kerap jika terdapat lebih banyak kemudahan tandas awam yang sesuai. <i>I would access green spaces more regularly if there were more suitable toilet facilities</i>				
18.	Tandas awam di Kuala Lumpur perlu ditambahbaik dari segi kriteria berikut :				

	Kuala Lumpur's toilet have a need for improvement in the following criteria:				
18a.	Reka bentuk/ <i>Design</i>				
18b.	Penyelenggaraan/ <i>Maintenance</i>				
18c.	Keselamatan / <i>Safety</i>				



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**BAHAGIAN E: PENILAIAN TANDAS AWAM**  
**SECTION E: PUBLIC TOILET ASSESSMENT**

Sila tandakan (/) Ya atau tidak.

*Please tick (/) the relevant Yes/No boxes.*

		Ya Yes	Tidak No
<b>1.</b>	<b>Laluan masuk tandas / Toilet Entrance</b>		
1.1	Penanda jelas dan boleh dilihat dari jauh. Laluan masuk bersih dan tidak terhalang. <i>Signage is clear and well visible from distance. Entrance is clean, uncluttered</i>		
<b>2.</b>	<b>Umum / General</b>		
2.1	Dinding, siling bersih, kering, tidak berhabuk dan tidak dicemari. <i>Walls, ceiling are clean, dry, undusted and not littered.</i>		
2.2	Lantai dan dinding bersih, utuh, dan kering. <i>Floors and walls are clean, intact and dry.</i>		
2.3	Tiada bau busuk di dalam tandas. <i>There is no bad smell in the toilet.</i>		
2.4	Terdapat ventilasi/ bukaan untuk peredaran udara dan berfungsi. <i>Ventilation/openings for air circulation are in place and functioning</i>		
2.5	Terdapat peti cadangan dan bahan pendidikan. <i>Suggestion box and Education material are in place.</i>		
2.6	Terdapat kemudahan asas seperti ( spt: tisu tandas, sabun, tong sampah, cermin, tisu ) <i>Basic amenities are in place (l,e: toilet paper, soap, bins, mirror, tissues etc.)</i>		
2.7	Langkah pencegahan sumber dan air ( paip bersensor, pencahayaan semulajadi dll <i>Resource and water saving measures (sensor taps, natural light, etc.)</i>		

		Ya Yes	Tidak No
2.8	Privasi: terdapat laluan masuk berhalangan, pecahan urinal dan kubikel. <i>Privacy: maze entrance, urinals, and cubicle partitions.</i>		
<b>3. Kawasan basuh / Wash Area</b>			
3.1	Paip, pengering tangan dan tong sampah berada di tempatnya dan berfungsi. <i>Taps, hand dryers, litter bins are in place and working.</i>		
3.2	Tiada kebocoran, kerosakan pada pemasangan, lekapan dan paip. <i>No leakage, no damage to the fittings, fixture and plumbing.</i>		
3.3	Tisu, sabun berada di tempat yang betul, berfungsi dan berisi. <i>Tissue/soap dispensers are in place, working and filled.</i>		
3.4	Kawasan basuh secara keseluruhannya adalah bersih, kering, kemas dan tidak dicemari. <i>Wash area is overall clean, dry, tidy, not littered.</i>		
<b>4. Tandas/ Toilet</b>			
4.1	Pintu tandas adalah bersih, berfungsi, dan berselak; kunci atau selak adalah dalam keadaan baik <i>Cubicle door is clean, functioning and latched; lock/latch are intact</i>		
4.2	Tandas mempunyai tempat duduk dan penutup <i>Toilet has a toilet seat and lid</i>		
4.3	Tempat penyangkut berada di tempatnya dan dalam keadaan baik <i>Coat Hanger is in place and intact</i>		
4.4	Mangkuk tandas/ tandas squat dan tempat duduk terlekat, tidak tersumbat dan tidak mempunyai kesan kotoran <i>Toilet bowl/squat and seat are intact and unclogged, not stained.</i>		

		Ya Yes	Tidak No
4.5	Lantai kubikel adalah tidak kotor, bersih dan kering <i>Cubicle floor is uncluttered, clean and dry</i>		
4.6	Flush manual/ auto adalah bersih dan berfungsi <i>Manual/auto flush is clean and functioning</i>		
4.7	Dispenser tisu tandas dalam keadaan baik dan berisi. <i>Toilet paper dispenser is intact and filled.</i>		
4.8	Tong sanitari ( dengan pedal kaki tanpa menggunakan tangan) dan plastiknya berada di tempat yang betul, kering, bersih, tidak berbau dan dalam keadaan baik. <i>Sanitary bin (hand-free with foot pedal) with liners is in place, is dry, clean, sanitized, odorless, intact</i>		
4.9	Tong sampah ( dengan pedal kaki tanpa menggunakan tangan) dan plastiknya berada di tempat yang betul, kering, bersih, tidak berbau dan utuh <i>Waste bin (hand-free with foot pedal) with liners is in place, is dry, clean, sanitized, odorless, intact</i>		
<b>5.</b>	<b>Urinals</b>		
5.1	Urinal dalam keadaan baik, tidak tersumbat dan tidak mempunyai kesan kotoran <i>Urinals are intact and unclogged, not stained</i>		
5.2	Flush manual/auto bersih dan berfungsi <i>Manual/auto flush is clean and functioning</i>		
<b>6.</b>	<b>Safety</b>		
6.1	Cahaya dalam dan luar berada di tempatnya dan berfungsi <i>Internal and External lighting is in place and functioning</i>		
6.2	Terdapat CCTV / pemantauan yang mencukupi <i>There is appropriate CCTV/ Patrolling</i>		
6.3	Dinding dan siling dalam keadaan baik dan tidak retak <i>Walls and Ceilings are intact, not cracked</i>		

**BAHAGIAN F: CADANGAN UNTUK PENAMBAHBAIKAN TANDAS AWAM**

**SECTION F: SUGGESTION FOR IMPROVEMENT OF PUBLIC TOILET**

1. Jika kemudahan tandas awam baru ingin disediakan, apakah ciri reka bentuk yang anda inginkan?

*If new public toilet facilities were provided, what design features would you like to see included?*

Tempat penyimpanan/ *Storage*

Tempat mandi/ *Shower*

Kemudahan penukaran lampin bayi  
Baby (nappy- changing) facilities

Ciri untuk menghalang tingkah laku anti- sosial (spt: muzik dll)  
Feature to deter anti- social behavior (i.e; music etc.)

Nilai- nilai estetika seperti pokok bunga, mural pemandangan,  
pokok- pokok hijau  
*Aesthetical values such as flower plant, mural view, green plant*

Lain- lain

Others (sila nyatakan) : .....  
(please specify) : .....

2. Sila nyatakan komen/ cadangan untuk penambahbaikan tandas awam di Kuala Lumpur.

.....  
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Borang soal selidik tamat. Terima kasih atas kerjasama yang anda berikan.  
*End of questionnaire. Thank you for your cooperation.*