# PHYSICAL ACCESS FOR DISABLED PEOPLE'S INCLUSION IN THE CITY CENTRE:

## THE CASE OF KUALA LUMPUR

by **HIKMAH BINTI KAMARUDIN** 

A thesis submitted to the University of Birmingham for the degree of **DOCTOR OF PHILOSOPHY** 

School of Geography, Earth and Environmental Sciences

College of Life and Environmental Sciences

University of Birmingham

May 2021

## UNIVERSITY<sup>OF</sup> BIRMINGHAM

## **University of Birmingham Research Archive**

#### e-theses repository

This unpublished thesis/dissertation is copyright of the author and/or third parties. The intellectual property rights of the author or third parties in respect of this work are as defined by The Copyright Designs and Patents Act 1988 or as modified by any successor legislation.

Any use made of information contained in this thesis/dissertation must be in accordance with that legislation and must be properly acknowledged. Further distribution or reproduction in any format is prohibited without the permission of the copyright holder.

#### **Abstract**

The aim of this research is to investigate the physical accessibility of Kuala Lumpur (KL) city centre, and its effects on the inclusion of disabled people. KL represents cities of the upper-middle-income that face challenges due to issues related to building control and planning frameworks, political and financial resources and tensions between economic development and other priorities. The research thus has broader relevance to other cities from the same region with similar social and cultural contexts, and also to other cities facing similar challenges at similar socioeconomic transitions. The qualitative research design comprised 20 go-along interviews with participants with mobility difficulties in order to understand their lived experience in accessing the city centre which included their experiences with transportation, buildings, and the street level environment. It also included 39 semistructured interviews with professional stakeholders to gather data regarding the provision of physical access in the city. The research highlights that measures were taken in providing physical access but barriers remained to people with disabilities. Generally, mobility impaired individuals especially wheelchair users still require assistance from others to continue their journey to the city centre. The findings of this research help to deepen the understanding of person-environment interaction that includes environmental aspects (external factors) and personal biography of disabled people while filling a gap in the field of human geography. Finally, it provides insights into pathways for change in order to facilitate the physical access and inclusion of disabled people, and other city centre users, which can be led by implementers, regulators and policymakers.

## **Acknowledgements**

In the name of Allah, the Most Gracious, the Most Merciful. First and foremost, I would like to express my deepest gratitude to both my supervisors, Dr. Rosie Day and Dr. Lauren Andres, for their professional guidance and encouragement throughout the process of completing this thesis. Prof. Nicholas Watson and Dr. Phil Jones, the thesis examiners, deserve special mention. Their suggestions helped me to improve the clarity of my thesis and strengthen the position of my research contribution. Also, thank you to my colleagues in Human Geography and the School of Geography's staff, as well as the Westmere House staff, for their assistance in providing workshops and conferences for postgraduate researchers.

Special thanks to the sponsor, the Ministry of Education Malaysia and Universiti Teknologi MARA (UiTM). My gratitude also extends to the go-along participants and professional informants from various organisations in Kuala Lumpur who took part in this research. Thank you also to Diane Bowden for proofreading my pre-viva work and again, to both of my supervisors for proofreading my revised thesis. Their contribution to this research is priceless.

I have also been greatly encouraged by the support and prayers of my parents, siblings and in-laws throughout my PhD journey. Last but not least, this thesis would not be completed without the love, patience and sacrifice of my husband, Husni Abdul Samad, and my children: Haziq, Hazim, Humairah, Hadiyyah and Hamzah. My late mother, Hamidah Ali would definitely be proud of my perseverance in completing my PhD. *Al Fatihah*...

# **Table of Contents**

Table of Contents	i
List of Tables	V
List of Figures	vi
List of Abbreviations	X
CHAPTER 1 INTRODUCTION	1
1.1 Research background	1
1.2 Introduction to Malaysia and Kuala Lumpur	5
1.3 The key research questions	7
1.4 Summary of research methodology	8
1.5 Scope and limitations	9
1.6 Significance of the research	9
1.7 Structure of the thesis	10
CHAPTER 2 LITERATURE REVIEW	12
2.1 Models of disability	13
2.1.1 The medical model of disability	14
2.1.2 The social model of disability	16
2.1.3 Development beyond the medical and social divide	19
2.2 Accessibility of the built environment	25
2.2.1 Accessibility and social sustainability	26
2.2.2 Accessibility-related terminologies	32
2.2.3 Barriers in the built environment	38
2.3 Summary and conclusion	51
CHAPTER 3 RESEARCH METHODOLOGY	54
3.1 Research philosophy	55
3.2 Research approach	56
3.2.1 Case study approach	57
3.2.2 The procedures for primary data collection	59
3.2.3 Ethical considerations	75
3.3 Data collection methods	76
3.3.1 Secondary data	76
3.3.2 Primary data	77
3.4 Data analysis	78

3.4.1 Transcribing and translating	78
3.4.2 Coding and developing themes	80
3.5 Positionality and reflections	82
3.6 Summary and conclusion of the research methodology	86
CHAPTER 4 DISABILITY AND ACCESSIBILITY IN MALAYSIA AND KU	JALA LUMPUR
CONTEXT	88
4.1 The country profiles	88
4.2 The evolution of social inclusion in Malaysian urban development polici	es 96
4.2.1 The New Economic Plan	96
4.2.2 Vision 2020	96
4.2.3 The Eleventh Malaysian Plan	97
4.2.4 Economic Transformation Plan	98
4.2.5 Government Transformation Programme	99
4.3 Disability services and key policies related to OKU's wellbeing in Malay	sia 102
4.3.1 Disability services and welfare	103
4.3.2 Key policies and regulations concerning disability and inclusion in	Malaysia107
4.4 Kuala Lumpur access policies relating to the built environment and tran	sportation117
4.4.1 KLCH as the local authority	118
4.4.2 Policies and regulations for OKU access in KL	
4.4.3 Kuala Lumpur public transportation	129
4.5 Conclusion	136
CHAPTER 5 THE ACCESSIBILITY OF TRANSPORTATION MODES AND	TRANSPORT
RELATED FACILITIES FOR DISABLED PEOPLE TO ACCESS KL CITY	CENTRE 139
5.1 The use of taxi services	142
5.1.1 Wheelchair storage space and passenger seats	142
5.1.2 Fare and financial issues	144
5.1.3 Driver's attitude towards OKU	145
5.1.4 Convenience and safety assurance	147
5.1.5 Inconvenience of transferring from wheelchair to the car seat	148
5.1.6 Summary of taxi and Uber issues	150
5.2 Rail lines and facilities in the stations	152
5.2.1 Gap in-between train platform and the train door	155
5.2.2 Barriers in vertical access	
5.2.3 Lack of clear signs for facilities	172
5.2.4 Material used for seating and flooring	176

5.2.5 Lack of staff	178	3
5.2.6 Summary of the rail-related services	180	)
5.3 Access issues in buses, bus stops and bus terminals	182	2
5.3.1 Limited number of accessible buses	185	5
5.3.2 Lack of access facilities maintenance in accessible buses	190	)
5.3.3 Inaccessible bus stops	192	2
5.3.4 Bus driver's attitude/service	200	)
5.3.5 Summary of the bus-related services	202	2
5.4 Private transportation and other transportation services	205	5
5.4.1 Traffic congestion and the lack of parking space	206	3
5.4.2 Inconvenience of transferring from wheelchair to vehicle	210	)
5.4.3 The scarce numbers of mobility vans	212	2
5.4.4 Summary of private transportation and other transportation services	214	4
5.5 Conclusion	215	5
CHAPTER 6 THE ACCESSIBILITY OF BUILDINGS AND THE STREET	LE\	/EL
ENVIRONMENT FOR DISABLED PEOPLE	220	)
6.1 Building entrance and circulation	222	2
6.1.1 The main entrance and alternative entrances to enter buildings	223	3
6.1.2 Circulation and changes of levels	233	3
6.1.3 Summary of accessibility of building entrance and circulation	239	9
6.2 Internal features and services	240	)
6.2.1 Counters and display areas	240	)
6.2.2 Toilets and sanitary facilities	248	3
6.2.3 Ablution and praying areas	258	3
6.2.4 Summary of the accessibility of buildings' internal features and services	263	3
6.3 Street level environment	265	5
6.3.1 Pavements, arcades and streets	265	5
6.3.2 Crossings, kerbs and changes of level	271	1
6.3.3 Landscaping, street furniture and utilities	279	9
6.3.4 Summary of the accessibility of the street level environment	285	5
6.4 Conclusion	287	7
CHAPTER 7 THE EFFECTIVENESS OF MEASURES BEING TAK	EN	BY
PROFESSIONAL STAKEHOLDERS IN PROVIDING PHYSICAL ACCESS FOR	OKU	293
7.1 Planning and implementation of physical access for OKU	294	1
7.1.1 Regulation compliance and issues on plan submission requirements	295	5

7.1.2 Enforcement, monitoring and auditing	309
7.1.3 KLCH in-house projects	322
7.1.4 Summary of the issues in planning and implementation of physical acc	ess for OKU
	332
7.2 Accessibility education and awareness-raising programmes	334
7.2.1 Technical training and awareness-raising programmes	334
7.2.2 Design consultations	342
7.2.3 Education and advocacy	345
7.2.4 Summary of accessibility education and awareness programmes	354
7.3 Participation and collaboration among the stakeholders	355
7.3.1 Collaboration among the stakeholders	356
7.3.2 OKU voice and participation	358
7.3.3 Summary of participation and collaboration among the stakeholders	364
7.4 Conclusion	365
CHAPTER 8 CONCLUSIONS AND RECOMMENDATIONS	370
8.1 Contributions of the research	372
8.2 Key findings of the research	374
8.3 Pathways for transformative change	388
8.3.1 PfTC 1: Tackle the lack of knowledge on technical requirements	among the
stakeholders involved in OKU access provision	388
8.3.2 PfTC 2: Address the lack of education and awareness of the importa	ance of OKU
access	392
8.3.3 PfTC 3: Account for the lack of good governance practice in provide	ling physical
access for OKU	393
8.3.4 PfTC 4: Consider the lack of participation of, and advocacy for OKU	396
8.4 Areas for future research	397
LIST OF REFERENCES	399
APPENDICES	415
APPENDIX 1	416
APPENDIX 2	421
APPENDIX 3	424
APPENDIX 4	425
APPENDIX 5	426
APPENDIX 6	428

## **List of Tables**

Table 2-1 Summary of models of disability	25
Table 2-2 Urban social sustainability contributory factors	28
Table 2-3 Universal design principles	35
Table 3-1 Professional interviewees details	64
Table 3-2 Go-along participants' attributes	70
Table 3-3 Options of destinations	71
Table 4-1 Summary of plans and policies on Malaysia development	. 101
Table 4-2 Categories of OKU	. 104
Table 4-3 The development of Malaysian Standard related to accessibility	. 113
Table 4-4 Summary of national policies, legislation and regulations related to OKU	116
Table 4-5 Statutory requirements related to access	. 122
Table 4-6 Train services in KL and Klang Valley	. 131
Table 5-1 Distance, estimated travel duration and methods of mobility in the g	jo-along
journey	. 141
Table 5-2 Comparison of taxi and Uber in terms of barriers and facilitators	. 151
Table 5-3 Condition of the rail-related-facilities for OKU inclusion	. 181
Table 5-4 Comparison of bus service for OKU inclusion in KL city centre	. 204
Table 5-5 Comparison of private transportation, shuttle van and mobility van f	or OKU
inclusion	. 215
Table 6-1 Category of buildings accessed in the go-along journey	. 221
Table 6-2 Access facilitators and barriers in building entrance and circulation base	d on the
go-along interviews	. 239
Table 6-3 Access facilitators and barriers in buildings' internal features and service	s based
on the go-along interviews	. 264
Table 6-4 Access facilitators and barriers in the street level environment based on	the go-
along interviews	. 286
Table 7-1 Summary of the issues in planning and implementation measures in p	roviding
physical access for OKU in KL	. 333
Table 7-2 Summary of the issues in accessibility education and awareness pro-	gramme
measures in providing physical access for OKU in KL	. 355
Table 7-3 Summary of the issues in participation and collaboration measures in p	roviding
nhysical access for OKI Lin KI	364

# **List of Figures**

Figure 2-1 Example of interactions between the components of ICF model	22
Figure 2-2 Model of social exclusion, integration and inclusion	24
Figure 2-3 Conceptual framework for social sustainability	29
Figure 4-1 Malaysian political map	90
Figure 4-2 Kuala Lumpur and its conurbation	94
Figure 4-3 Strategic Thrust 1: Enhancing inclusiveness towards an equitable society	98
Figure 4-4 Percentage of registration of OKU by category of disabilities in Malaysia,	2017
	105
Figure 4-5 OKU registration by states as of June 2017	118
Figure 4-6 Boundary of the Federal Territory of Kuala Lumpur and Kuala Lumpur city of	centre
in the middle	120
Figure 4-7 UDG's nine precincts	126
Figure 4-8 Klang Valley Integrated Transit Map	133
Figure 4-9 Four different GoKL routes within KL city centre	135
Figure 5-1 Transferring those unable for self-transfer	149
Figure 5-2 Examples of facilities in rail stations	152
Figure 5-3 New KTM Komuter layout of seating with dedicated area for wheelchair pa	arking
	153
Figure 5-4 Different gap size in different LRT stations	155
Figure 5-5 Entering trains	156
Figure 5-6 Stair lift provided to access Suria KLCC from the KLCC Station (subway).	161
Figure 5-7 Vertical access in LRT station	162
Figure 5-8 OKU with mobility difficulties climbing staircase	163
Figure 5-9 Bukit Badak KTM Station	164
Figure 5-10 KTM Komuter route map	165
Figure 5-11 P5 comparing ease of access	168
Figure 5-12 Staff and passengers assisted in lifting wheelchair user in Imbi Monorail s	tation
	170
Figure 5-13 Effort to allow access for P6	171
Figure 5-14 Wheelchair on escalator	172
Figure 5-15 ERL experienced	173
Figure 5-16 Drop-off and pick-up point in Alam Megah Station	175

Figure 5-17 Different kinds of materials used in different rail services	1//
Figure 5-18 Wet and slippery floor that invites danger to those with mobility diffi	culties. 178
Figure 5-19 KL Monorail Customer Service Counter in KL Sentral (low counter)	179
Figure 5-20 Example of accessible bus with manual flip out ramp	182
Figure 5-21 Facilities in an accessible bus	183
Figure 5-22 Low floor bus	184
Figure 5-23 KL hop-on-hop-off route and bus stop indication	187
Figure 5-24 Maintenance issue in accessible buses	191
Figure 5-25 Example of bus stop without kerb cut in KL city centre	193
Figure 5-26 Ramp landed on bus stop get a gentle gradient	194
Figure 5-28 Example of the effect of inaccessible bus stop	195
Figure 5-27 Bus stop abused with cars parked in front of the bus stop	195
Figure 5-29 Bus experience in the go-along journey	201
Figure 5-30 Wheelchair user (P7) getting in the car to drive 206	
Figure 5-31 OKU motorcycle with wheelchair compartment	207
Figure 5-32 Transferring OKU to shuttle van seat	211
Figure 6-1 Pavilion and its surrounding; with a gentle slope climbing to the ma	in entrance
	224
Figure 6-2 Examples of disabled-friendly entrances to access buildings	225
Figure 6-3 OKU access at Central Market main entrance	226
Figure 6-4 Examples of doors at the main entrances of different buildings in KL	. city centre
	227
Figure 6-5 Examples of shop lot entrances	229
Figure 6-6 Inaccessible entrance for wheelchair to access surau	230
Figure 6-7 Access at Masjid Negara	231
Figure 6-8 At KL Tower entrance	232
Figure 6-9 Accessible ramp at Masjid Kampung Baru up to the top floor	234
Figure 6-10 Steep ramp	235
Figure 6-11 Example of vertical access facilities provided in buildings	237
Figure 6-12 Change of floor level	238
Figure 6-13 Examples of counter designs	241
Figure 6-14 More examples of counter designs	242
Figure 6-15 Circulation at display area	243
Figure 6-16 Access to display area in the National Museum	244
Figure 6-17 Display on platform	245

Figure 6-18 Standing binoculars provided at the KL Tower observation deck	. 245
Figure 6-19 Food ordering counters	. 246
Figure 6-20 Food counter for nasi campur	. 247
Figure 6-21 Inaccessible toilet door opening for wheelchair	. 249
Figure 6-22 OKU toilet cubicle inside the main female toilet	. 250
Figure 6-23 Examples of signage to indicate toilet for OKU	. 251
Figure 6-24 Grab bar position in OKU toilet	. 252
Figure 6-25 Issues in OKU toilet	. 253
Figure 6-26 Example of suggested positions and sizes of toilet facilities	. 254
Figure 6-27 Free toilet service for OKU in Central Market	. 255
Figure 6-28 Locked OKU toilet	. 256
Figure 6-29 OKU toilet used as janitorial store	. 257
Figure 6-30 Outdoor ablution area	. 259
Figure 6-31 Taking ablutions by transferring from wheelchair to the kerb	. 260
Figure 6-32 Examples of design of ablution area with kerbs that create barrier to user	. 260
Figure 6-33 Design thought for a diversity of users	. 261
Figure 6-34 Access facilities in <i>masjid</i>	. 262
Figure 6-35 Examples of seamless pavement and corridors	. 266
Figure 6-36 Accessible pedestrian walkway but inaccessible building entrance	. 267
Figure 6-38 Wheelchair users compromising safety by wheeling on the road	. 268
Figure 6-37 Barriers on arcade and street	. 268
Figure 6-39 Broken pavement	. 269
Figure 6-40 Poorly repaired/reinstallation of pavement surface	. 269
Figure 6-41 Pavement under upgrading work	. 270
Figure 6-42 Examples of raised crossing to level with pavement	. 271
Figure 6-43 Pavement sloping down gently towards the crossing	. 272
Figure 6-44 Examples of barriers in crossings	. 273
Figure 6-45 Examples of kerb without a kerb cut	. 273
Figure 6-46 Examples of ineffective kerb cut	. 275
Figure 6-47 Access in a park	. 276
Figure 6-48 Access to the National Monument	. 277
Figure 6-49 Person with mobility difficulties climbing steps	. 278
Figure 6-50 Landscaping that obstructs walkways	. 279
Figure 6-51 A stretch of upgraded pavement	. 280
Figure 6-52 Research participant struggling to access the OKU gate	. 281

Figure 6-53 Utilities obstructing pavement	. 282
Figure 6-54 Grating drain cover	. 283
Figure 6-55 Different design of the concrete drain covers replacing the steel grating	. 284
Figure 6-56 Condition in one of the newly upgraded pavements	. 285
Figure 7-1 Kerb ramp with flared sides	. 302
Figure 7-2 Example of an upgraded area in Jalan Tuanku Abdul Rahman	. 329

### List of Abbreviations

CCC Certificate of Completion and Compliance

CFO Certificate of Fitness for Occupation

DSM Depart of Standards Malaysia

DSWM Department of Social Welfare Malaysia

EPP Entry Points Projects
ERL Express Rail Link

ETP Economic Transformation Plan

GTP Government Transformation Programme IBSU Innovation and Building Standards Unit

KL Kuala Lumpur

KLCC Kuala Lumpur City Centre KLCH Kuala Lumpur City Hall

KTM Keretapi Tanah Melayu (Malayan Railways)

LRT Light Rail Transit
MS Malaysian Standards

MWFCD Ministry of Women, Family and Community Development

NGV natural gas for vehicles

NKEA National Key Economic Areas
ODA Official Development Assistance

OECD Organisation from Economic Co-operation and Development

OKU Orang Kurang Upaya (person with disabilities)

PfTC pathways for transformative changes

PSP Principal Submitting Person

SPAD Suruhanjaya Pengangkutan Awam Darat

(Land Public Transport Commission)

UBBL Uniform Building By-Law UDG Urban Design Guidelines

UN United Nations

UNCRPD United Nations Convention on the Rights of Persons with Disabilities

#### **CHAPTER 1**

#### INTRODUCTION

## 1.1 Research background

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) recognises 'the importance of accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, in enabling persons with disabilities to fully enjoy all human rights and fundamental freedoms' (UN, 2006, p.4). Accessibility is about giving equal access to all, where facilities and services should be accessible to everyone and there should be no exclusionary or discriminatory practices hindering disabled people from participating in society (UN, 2007). It is one of the predominant physical factors in urban social sustainability and a fundamental criterion by which freedom of participation for everyone in society (McKenzie, 2004; Casas, 2007; Dempsey *et al.*, 2011), including disabled people, may be measured.

Larson (2014) points out that the gaps disabled people face are in at least three major areas, i.e. in achievement, access, and services. Evidence of lack of provision can be found by examining the technology, access to physical space, employment and earnings, and the general services available for disabled people. This thesis focuses on disabled people's access to the city which can be grouped under 'access to physical space'. Physical access underpins access to all kinds of social goods (e.g. education, employment, social interaction etc.). Having access to physical

space is connected to disabled people's inclusion as it enables them to gain education in an accessible institution, access employment in an accessible workplace and enjoy social life in an accessible environment.

Even though disabled people should be able to enjoy existing facilities in the same way as other legal citizens (Tiun & Khoo, 2013), evidence shows that compared to the non-disabled, disabled people have less opportunity to attend activities in the built environment due to inaccessible design (Goodall, 2010; Imrie, 2012; Maidin, 2012; Gaete-Reyes, 2015). Access issues in urban areas generally constitute an unjust situation (see for example, Gaete-Reyes, 2015; Clarke *et al.*, 2011; Bromley *et al.*, 2007). Yet, disability issues related to the environment are very seldom discussed (Charles & Thomas, 2007).

Accessibility and inclusion, while a common concern, affect places and individuals differently. Some cities are more accessible than others. This applies both to the cities of the North and the Global South. However, cities in the Global South face more challenges due to issues related to building control and planning frameworks, political and financial resources and tensions between economic development and other priorities. More research is needed in cities that can be characterised as being in transition, having both 'developed' characteristics (including a range of accessibility policies and guidelines) and 'developing' patterns (for example, lack of coherent master planning, and issues of implementing and enforcing regulations and guidelines).

Prior to turning to the presentation of the case study, attention needs to be given to the definition of disability used in this thesis. The traditional view of disability

stressed that an individual's defective body causes problems associated with disability (Bickenbach, 1999; Barnes & Mercer, 2004; Bailey et al., 2015). In the 1970s, The Union of the Physically Impaired against Segregation (UPIAS) made a distinction between physical impairment and disablement. Impairment is 'lacking part of or all of a limb, or having a defective limb, organ or mechanism of the body' (Finkelstein, 1975, p.4), while disablement is seen as a social process, where individuals with impairments are rendered disabled by aspects of societal organisation. Later, the World Health Organization (WHO) (1980) explained the term 'impairment' as 'any loss or abnormality of psychological, physiological or anatomical structure or function'; 'disability' as 'any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being'; and 'handicap' as 'a disadvantage for a given individual, resulting from an impairment or a disability that limits or prevents the fulfilment of a role that is normal (depending on age, sex, social and cultural factors) for that individual' (Barnes, 2011, p.57-58). However, these three concepts were criticised by having orthodox medical definition of disability that viewed impairment as the cause of disability and/or handicap and ignoring the environmental factors (ibid.)

The International Classification of Functioning, Disability and Health (known more commonly as ICF) then established that disability is an umbrella term encompassing impairments, activity limitations and participation restrictions (WHO, 2002). 'Impairments' are problems in body function or alterations in body structure, 'activity limitations' are difficulties in executing activities, and 'participation restrictions' are problems with involvement in any area of life (WHO & World Bank, 2011).

Meanwhile, the UNCRPD defined persons with disabilities as 'those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others' (UN, 2006). The UNCRPD definition of disability is similar to that of ICF but specifies the impairment time frame to be a 'long-term' one. Malaysia is among other countries in Asia adopting the CRPD definition (Malaysian Government, 2008).

This thesis favours the ICF view and understands disability as more than just physically apparent disability but considers other health conditions; and it does not limit disability to the attributes of the individual but also takes into account the surrounding physical and social environment. By considering the diversity of users' health, capacity, and physical conditions and not distinguishing between the 'disabled' and 'able-bodied' in planning and designing spaces, buildings, paths, services and any other facilities, this thesis positions itself in the field of work seeking to produce a built environment that is accessible to all. However, since the data collection was based in Kuala Lumpur, Malaysia, this thesis utilises the definition of disability from the Malaysia Persons with Disabilities Act 2008, which adopts the UNCRPD definition quoted above. Further discussion of disability in Malaysia and the Kuala Lumpur context is presented in Chapter 4.

The term 'disabled people' is preferred for use in this thesis rather than 'person with disabilities' as it recognises that disability arises in part through discriminatory processes within society as conveyed by the social model of disability (Oliver, 1990; Sawadsri, 2010; Cobley, 2011). The term 'disabled people' is used as a general

term, without referring to the type of physical, sensory or mental impairment. Nonetheless, the role of impairment as a contributory factor to disability is acknowledged since the bio-psycho-social model of disability recognises that a range of medical, biological, psychological and environmental factors are associated with disability (WHO, 2002).

In Malaysia, the terms 'disabled people' and a 'person with disabilities' are used interchangeably. OKU (from the Malay '*Orang Kurang Upaya*', literally 'less able people') is however the commonly used terminology for disabled people both in English (as spoken in Malaysia) or Malay. From Chapter 4 onwards in this thesis, 'OKU' is used to correspond to the local context when referring to disabled people in Malaysia and Kuala Lumpur. Meanwhile, the term 'disabled people' is still used to address disabled people in general.

## 1.2 Introduction to Malaysia and Kuala Lumpur

Malaysia is a developing country in South East Asia. As a colonised nation, the government structure adapted the system introduced by the British (Rani, 2012). This multi-ethnic country with a multi-religious society is also the product of the colonial era when Chinese and Indian settlers came to work in the tin mining and rubber estates. Malaysia was considered a low-income country following its independence in 1957 (Economic Planning Unit, 2015a). In the 1970s, the economic paradigm changed from agriculture-based to diversified (Aziz & Azmi, 2017). By the early 1990s, Malaysia was regarded as an upper-middle income country (Economic Planning Unit, 2015a) but still received development assistance from the

Organisation from Economic Co-operation and Development (OECD, no date) until the time of writing. While Malaysia's goal of becoming a developed nation by 2020 has not been achieved, it is the third most prosperous country in South East Asia after Singapore and Brunei (Salikha, 2016).

Kuala Lumpur (KL), the capital city of Malaysia, was known for its tin mining in the British era. It grew from a small village to a mining town (Gullick, 1994). Since the 1990s, KL has expanded rapidly. Being the most extensive urban region in the country, KL aspires to be a world class city and has oriented the city centre to be a very international environment (Abidin, 2016). Nonetheless, KL has a complex built environment in which planning navigates between the legacy of a post-colonial city, historic neighbourhoods (e.g. Kampung Baru) and a more modern version of the city, typically around the Kuala Lumpur City Centre (KLCC). There is also a degree of unplanned and unfinished urban development, contributing to accessibility issues.

As a transition city in the Global South, the challenges faced by KL are arguably similar to those affecting access and inclusion of disabled people in other upper-middle-income countries transitioning towards more developed models of development and planning. KL city centre faces issues related to physical barriers in the built environment. Generally, the majority of past researchers examined the (in)accessibility of buildings and public spaces in KL (and other cities in Malaysia) by using accessibility checklists (see for example in Kamarudin *et al.*, 2014; Hashim *et al.*, 2012). Yet, no consideration has been given to disabled people's lived experience or their psychological and emotional perspectives in negotiating barriers

in accessing KL city centre. This overlooks that disability and the built environment are dynamic as disability incorporates both structural and psycho-emotional aspects as what is viewed in the extended social model of disability.

Additionally, KL has encouraging provision on physical access for disabled people in terms of access policy and regulation. It is worthwhile to examine these provisions and the perspectives of built environment professionals in order to understand a transitioning city's regulatory frameworks and, importantly, its implementation challenges. Hence, this thesis examines the relationship between physical access that has been provided and the reality that disabled people encounter, and the reasons for any disparity.

## 1.3 The key research questions

This research aims to investigate the physical accessibility of KL city centre, as an example of a city in transition, and its effects on the inclusion of disabled people.

Three research questions (RQ) driving this research are as follows:

- RQ1 What is the state of the regulatory frameworks surrounding the provision of physical access for disabled people to KL city centre?
- RQ2 What are the barriers and facilitators experienced by disabled people in accessing KL city centre and how do they affect the inclusion of disabled people?
- RQ3 How effective are measures taken by professional stakeholders in providing physical access for disabled people's inclusion in KL city centre and what are the possible reasons behind any physical access implementation gap?

## 1.4 Summary of research methodology

The research adopted a qualitative and case study research design, including semi-structured interviews and go-along interviews. The 39 semi-structured interviews were conducted with various stakeholders classed as 'providers' to gather data regarding physical access for disabled people's inclusion from the perspectives of the professionals from various organisations. This group included those involved in the process of providing access to the city centre directly (e.g. the planning and building control bodies as the regulatory bodies) and indirectly (e.g. educators and researchers as the collaborators). Interviews were conducted with informants from the regulatory bodies, implementers/service providers, disabled people's representatives (as professionals representing their organisations), and collaborators/other stakeholders.

Meanwhile, a go-along interview method was used to gather the perspectives of disabled people themselves. The go-along interviews were conducted one-to-one with 20 disabled participants (persons with mobility difficulties) in order to capture their lived experience in accessing KL city centre. This method is a hybrid between participant observation and qualitative interviewing. It involved spending time with the participants in a walk-along pedestrian environment and a ride-along transportation journey, where I move alongside the participant to collect information. Data analysis was undertaken by following the sequence of transcribing, coding and developing themes.

## 1.5 Scope and limitations

It is worth noting that this research is only looking into the perspectives of disabled people with mobility difficulties in accessing the city centre. Perspectives through the lens of sensory, mental and other physical disabilities are not included in this research. The fieldwork was conducted over four months, from 5<sup>th</sup> January 2017 to the 5<sup>th</sup> May 2017. Hence, more recent developments in KL city centre, e.g. the launch of the new rail line of Klang Valley Mass Rapid Transit service on 17<sup>th</sup> July 2017 are not included in the discussion of mobility through transportation in this thesis. It is also acknowledged that the e-hailing Uber service operation merged with Grab in 2018. Meanwhile, the Land Public Transport Commission (SPAD) was abolished, also in 2018, and the Land Public Transport Agency took up the responsible office. Since the changes occurred after the data was collected, their effects on disabled people's inclusion cannot be considered in this thesis. Still, they might be usefully addressed by future research.

## 1.6 Significance of the research

The research, by its focus on accessibility and inclusion for disabled people in the city of KL contributes to literature on disability, access and inclusion in the Global South. It brings specific insights that can help to inform policymakers and implementers to improve their practice and ultimately improve the lives of disabled people in developing countries.

The research findings are expected to enhance knowledge in planning, designing and implementing an inclusive built environment in the specific context of a rapidly developing city in an upper-middle-income country by using KL, a transition city, as a case study. The city's layered urban fabric, its diverse ethnic and cultural makeup, and the various realities of planning and regulation are relevant to be referred to by other countries in a similar transitioning stage, and potentially more relevant than most examples from the Global North, that dominate the current literature.

The research finally adds to literature on the lived experience of disabled people in negotiating barriers in accessing the city centre. It enriches the existing knowledge of accessibility by deepening the understanding of person-environment interaction, specifically on the interaction between disabled people and the built environment. The go-along interview developed in this research is by way of doing a form of transformative geographical research with disabled people.

#### 1.7 Structure of the thesis

This thesis consists of eight chapters. Following this chapter, Chapter 2 reviews the existing research literature relevant to this thesis. The first part of the chapter discusses models of disability, looking into the medical model and social model of disability and development beyond these two models. The latter part discusses the relationship between accessibility and social sustainability, accessibility-related terminologies, and barriers in the built environment.

Chapter 3 explains the research methodology used. It outlines the research philosophy, and details the research design including the case study approach, the

process of data collection and ethical considerations. It then discusses data analysis, and finally my positionality and reflective thoughts on conducting this research.

Chapter 4 presents disability and accessibility in Malaysia and KL context. It starts with an overview of the country profile and describes the evolution of inclusion in Malaysian national development policies. Next, it outlines the specific national policies and regulations related to disabled people's wellbeing. Finally, it moves on to discuss specific access policies and regulations in KL and introduces Kuala Lumpur City Hall (KLCH) as the responsible local authority in administering KL.

Chapters 5 to 7 present the empirical findings and discussion of the thesis. Chapter 5 discusses the mobility of disabled people through modes of transportation. Chapter 6 examines the accessibility of buildings and the street level environment while Chapter 7 discusses measures being taken by the professional stakeholders in enabling OKU's inclusion in KL city centre and the factors found to constrain the implementation of physical access policy and regulation.

Finally, Chapter 8 highlights the research contributions and summarises the key findings of the empirical evidence on physical access in KL city centre and its impacts on disabled people's inclusion. Recommendations for stakeholders on the possible actions to enhance accessibility in KL city centre and recommendations for future research are also given.

#### **CHAPTER 2**

#### LITERATURE REVIEW

Accessibility of the physical environment is crucial for everyone (McKenzie, 2004;

Casas, 2007; Dempsey et al., 2011), particularly for disabled people in exercising their human rights and enjoying freedom (UN, 2006). However, the issue of accessibility of services, facilities and infrastructure for disabled people has been long highlighted by researchers and academics cum disabled activists (such as Oliver, 2004; Barnes, 2012; Shakespeare, 2015) as a key challenge. Among the common accessibility issues identified, two have been at the forefront of debates: physical barriers in the built environment (for example see Imrie & Kumar, 1998; Botticello et al., 2014) and more recently consequences for social equity and disabled people's inclusion in cities (see Bichard, 2018; Repeva & Adjidé, 2020). This demonstrates that, despite its importance, disabled people are still facing a lot of accessibility issues that raise concerns regarding their full participation in society. In examining physical access and inclusion, Friedner (2015) suggests that cities are key spaces to be investigated, where research can examine physical urban forms (e.g. the street furniture, buildings, forms of transportation). This is due to cities being 'the engine of economic development, employment and opportunity' (Hanson 2004, p.2) that play an important role in offering a variety of opportunities to the public, such as employment, education and enjoying social life. Several research studies have been conducted specifically focusing on the accessibility of city centres and urban areas, examining whether they provide access for everyone. For instance, research on the full participation of disabled adults in an urban environment in Chicago neighbourhoods (Clarke *et al.*, 2011), on city centre accessibility for wheelchair users in Swansea (Bromley *et al.*, 2007), and on physical access barriers to services in four different town/city centres in Britain (Lewis *et al.*, 2005). The nature of the urban environment (size of the city, urban morphology, modern versus historic neighbourhoods) leads to various and different physical access barriers. Attitudinal barriers (e.g. ignorance, stereotyping) also contribute to the exclusion of disabled people (Bromley *et al.*, 2007).

For this research, an understanding of disability and accessibility is essential to demonstrate the importance of access for disabled people and be able to link it to the significance of disabled people's inclusion in the city centre. It is important to situate this problematic within the different schools of thought that have been debating the term 'disability' and its nature; this has implications for how the research should be conducted and how provision for disabled people should be made. Therefore, this chapter will first review models of disability and later move to issues surrounding the accessibility of the built environment. Conclusions are then given at the end of the chapter.

## 2.1 Models of disability

There are several models of disability that aid in defining, named as per the focus given to the model, typically, the charity/welfare model, medical model, social model, identity/affirmative model or the economic model (see Retief & Letšosa, 2018). The oldest model of disability is the moral/religious model that views disability as an act

of god (*ibid*.). The medical model and the social model of disability are the two most established and contrasting models which have influenced the disability debate for some time. Numerous researchers have highlighted the transition from the medical model to a social model of disability (noticeably in the 1980s) in which people are viewed as being disabled by society rather than by their impairment (Barnes & Mercer, 2004; Oliver, 2004). However, as the debate matured, other researchers (for example see Shakespeare & Watson, 2016) have argued that it is important to recognise both models. Understanding each of these most influential models (Darcy & Buhalis, 2011) assists in providing a more complete understanding of disability (Kadir & Jamaludin, 2012).

This section discusses the medical model and the social model of disability prior to looking into other models of disability which can be categorised as beyond the medical-social binary, i.e. the bio-psycho-social model and the geographical model of disability.

#### 2.1.1 The medical model of disability

The medical model of disability stressed that problems associated with disability are caused by an individual's defective body where functional limitations are perceived as the principal cause of the multiple difficulties experienced by disabled people (Bickenbach, 1999; Barnes & Mercer, 2004; Bailey *et al.*, 2015). The medical model is sometimes referred to as the individual model, as termed by Oliver (1990). In this model, having an impairment is seen as a 'personal tragedy'; it regards disability as some terrible chance event which occurs at random to unfortunate individuals

(Barnes & Mercer, 2004; Oliver, 2004). According to the medical/individual model, in order to decrease disability, impairments need to be either prevented or cured by medical experts. This implies that money needs to be spent on creating the expertise, providing medical treatments, therapists, carers (Bailey *et al.*, 2015) and equipment including assistive devices.

The medical model has been criticised for seeing disabled people's condition as needing appropriate treatment for normalisation. Hutchison (1995, cited in Llewellyn & Hogan 2000, p.159) views it as 'a force only to change disabled people into some more normal beings'. Oliver (1990) highlights that medicalisation is the significant component in the individual model of disability. He contends that locating the problems of disability within the individual is inappropriate as he views that disability is a social state and not a medical condition. However, despite the critiques and a generally acknowledged move away from this model, it still has support to some extent. For example, Vehmas and Watson (2013) point out that recognising impairment effects is significant in securing a proper treatment for an individual and offering a better social arrangement. It could enhance disabled people's well-being and social participation whereby society would then be expected to recognise actions to be done and service to be provided for disabled people's inclusion (ibid.) Besides, Zhuang (2016) points out that the medical model is applicable in determining who qualifies as disabled where this controls the spending on welfare services and ensures that the right people benefit.

#### 2.1.2 The social model of disability

In contrast to the medical model, the social model of disability takes the viewpoint that disability is socially constructed (Oliver, 1986). According to this model, disability is caused by society (external factor) that creates the disabling environment, and the inability of society to make adjustments is the 'barrier' that disables people, not their impairment (Oliver, 1986; Oliver & Barnes, 2008; Barnes, 2012; Anastasiou & Kauffman, 2013). Oliver (1986) stresses that an inaccessible built environment is 'disabling' people while an impairment such as a defective limb is not an inevitable reason for a person with disability to be impeded. For instance, a staircase cannot be accessed by disabled people using a wheelchair but if a ramp with an appropriate gradient is provided, the built environment is enabling wheelchair users to freely access their destination; however, if there is no alternative for vertical access except for the staircase, the wheelchair user becomes 'disabled'.

The example of the physical accessibility barrier above (to be elaborated in 2.2.3) is also termed as a structural barrier (see for example in Marston, 2002 and Reeve, 2004). The physical access problem leads to a lack of services available to disabled people creating many obstacles that they have to face in their everyday life. The WHO and World Bank (2011) reported that the lack of services and the many obstacles that impade disabled people results in them having generally poorer health, lower educational achievements, fewer economic opportunities and higher rates of poverty than people without disabilities. Since disability is viewed by the social model as socially constructed, action needs to be taken by society to 'fix' the disablement. Hence, it could enable the inclusion of disabled people.

Thomas (1999) cited by Reeve (2004) suggested an extended social-relational model of disability where the definition of disability incorporates both structural and psycho-emotional dimensions. This extended social model views disability as a form of oppression which operates at both public (structural) and emotional (personal experience) levels. An example of structural disablism is the lack of access to enter buildings, which decreases the opportunity for employment and education for disabled people, thus leads to exclusion (Reeve, 2014). Being stared at, condescended, pitied and treated with hostility by others are examples of experience of psycho-emotional dimensions of disability (Morris, 1991 cited in Reeve, 2004) that also affect people with impairments and indirectly restrict their full participation in society.

Reeve (2004) further outlines three examples of the psycho-emotional dimension of disability: responses to experiences of structural disability (e.g. anger and frustration at not being able to access a building; entering building through a back entrance), social interaction with others (e.g. feeling ashamed of being stared at by others), and internalised oppression (e.g. over-protective parents make a disabled child feel disempowered and vulnerable). Psycho-emotional disablism has a negative influence on 'self-esteem, personal confidence and ontological security' and could make disabled people 'feel worthless, useless, of lesser value, ugly, burdensome' (Thomas, 2007, p.72).

Nonetheless, Reeve (2004) highlights that the experience of disability is not identical for everyone and varies in its intensity depending on time, place, and personal biographies. Shakespeare and Watson (2016) break these factors into intrinsic and

extrinsic. The intrinsic factors are the internal factors (i.e. the type of impairment and its severity, motivation and attitude to impairment, self-esteem and confidence). The extrinsic factors are the external factors that include physical environment, social arrangements, expectations and roles, and cultural meanings and representation (*ibid.*). The experience of psycho-emotional disablism and structural disablism bring different effects to different people, whereby disabled people experience them to different degrees (Thomas, 2007; Reeve, 2010). These two dimensions of disablism are significant in imposing an impaired person's ability or inability to participate in society. It is therefore more thorough for a model to include both disablism dimensions which at times reinforce each other (*ibid.*).

According to Shakespeare (2006) cited by Kadir and Jamaludin (2012b, p.430), the strengths of the social model are:

"...being effective politically in building the social movement of disabled people, effective instrumentally in the liberation of disabled people, and effective psychologically in improving the self-esteem of disabled people and building a positive sense of collective identity."

Nonetheless, there are also diverging perspectives towards the social model of disability. Reeve (2010) argues that the social model puts too much emphasis on socio-cultural barriers which are created by or related to society (externally imposed). Critiques of the social model contend that this model underplays the role of body impairment as a vital aspect in many disabled people's life (Shakespeare & Watson, 2002; Thomas, 2004; Smeltzer, 2007). According to Smeltzer (2007), the

social model views medical diagnosis, illness or injury (that causes impairment) as totally unrelated to disability. The social model has been criticised for ignoring or dismissing disease or injury as part of the problem faced by disabled people when in fact the consequences of these may have a major role in the life of the impaired person.

Meyers (2014) suggests that the biological aspect should also be considered instead of viewing the environment (i.e. society and external factors) as the only factor that disables an impaired person. Furthermore, disabled people are diverse and may experience disability very differently in relation to their race, gender, ethnicity and the way their impairment is embodied (this refers to individuals' personal biography) (Reeve, 2004; Meyers, 2014). According to Thomas (2012), 'disablism' is the avoidable restriction which is the result of social oppression. Meanwhile, 'impairment effects' are the direct and unavoidable impacts and restrictions, that are the result of the impairments. Thomas (2004) earlier argues that impairments play some role in causing disability. She contends that the social model is flawed because it denies impairment as any cause of disability; furthermore, the social model makes people accept that 'all restrictions of activity are caused by social barriers' (*ibid.*, p.579).

#### 2.1.3 Development beyond the medical and social divide

Advancements in the debates led to contentions in defining disability. Llewellyn and Hogan (2000) however argue that it is not useful to debate the right or wrong models of disability in terms of their general utility since the models inform research and

practice in a particular setting. Kadir and Jamaludin (2012) suggest that both the disorders or health-related problems (medical model of disability) and the social exclusion (social model of disability) should be acknowledged as significant aspects in explaining the complex process of disability.

Several researchers (Thomas, 2004; Meyers, 2014; Shakespeare & Watson, 2016 for example) sought to bring elements of the medical model, particularly its individual characteristics (e.g. emotion, identity and impairment) into the social model. Thomas (2004, p.567) stresses that:

"Once the term 'disability' is ring-fenced to mean forms of oppressive social reaction visited upon people with impairments, there is no need to deny that impairments and illness cause some restrictions of activity – in whole or in part."

An impaired person could suffer a loss of self in negotiating/coping with life with impairments, while the struggle to attain normality could also oppress them (Watson, 2002). Besides, the interaction of body and social environment also produces disability (Shakespeare & Watson, 2016). Thomas (2016) urges to 'bringing impairment back in' (p.47) to disability studies in a non-threatening way. This notion promotes a similar idea to the bio-psycho-social model of disability, discussed next.

#### 2.1.3.1 The bio-psycho-social model of disability

Thomas (2007) argues that illness, accident and development abnormalities (e.g. in gestation) need to be recognised as part of the cause of disability as well as the

environmental factors. The 'degree of disablement' and the 'extent of disabilities' relies on the 'severity and nature of the condition involved' (*ibid.*, p.12). Both social barriers and impairment are the product of multiple bio-psycho-social forces (Thomas, 2004). It is difficult to disregard the negative aspects of impairment especially for those who feel pain and discomfort from their impairment (Shakespeare & Watson, 2016). Furthermore, numerous disabled people reported that when they are emotionally down, such pain or spasm for example, become worse; however, this psychological aspect is not adequately addressed in the social model (*ibid.*) as it is based within the medical realm (Reeve, 2010).

The bio-psycho-social model represents a workable compromise between the medical and social models of disability where individual biological and psychological conditions, as well as environmental factors are taken into account in addressing disability (Dogar, 2007; Kastenholz *et al.*, 2015; Zajadacz, 2015). The WHO (2002) acknowledges that both medical and social responses are appropriate to the problems associated with disability but suggest that the bio-psycho-social model is more useful in promoting accessible activities and adequate public policies (Kastenholz *et al.*, 2015).

According to Shakespeare and Watson (2002), the claim of the social model that everyone is impaired (not just 'disabled people') is seen as an important insight into human experience, with major implications for both medical and social intervention. This opinion is in line with the suggestion by the WHO and the World Bank (2011) that almost everyone will be temporarily or permanently impaired at some point in life, whereas the International Classification of Functioning, Disability and Health

(ICF) places emphasis on the environmental (social) and individual (medical) factors in defining disability. The bio-psycho-social model is also promoted as the ICF model (WHO & World Bank 2011).

Figure 2-1 shows that disability and functioning are viewed in the bio-psychosocial/ICF model as outcomes of interactions between health conditions and contextual factors (WHO, 2002). On the other hand, the environmental factors can be either facilitators or barriers while the personal factors can influence participation in society (WHO & World Bank, 2011).

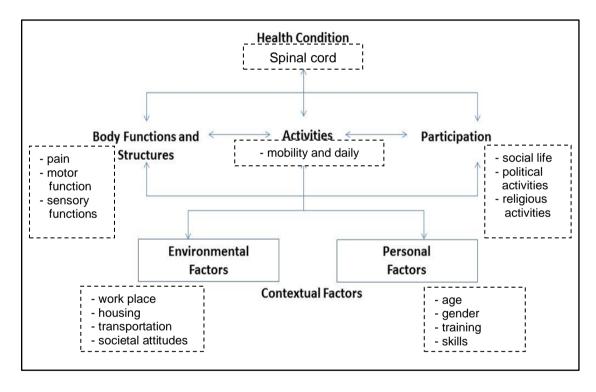


Figure 2-1 Example of interactions between the components of ICF model

Source: Adapted from WHO & World Bank (2011)

Prior to the definition by ICF, disability was seen as beginning where health ended, and disabled persons were therefore separated into a different category (WHO, 2002). In shifting the thinking, the WHO has made ICF into a tool for measuring the

ability to function in society regardless of the impairment. However, the ICF schema does not differentiate temporary illness and long-term chronic disease/impairment (Shakespeare & Watson, 2016).

### 2.1.3.2 The geographical model of disability

Based on the bio-psycho-social model, Zajadacz (2015, p.194) created the geographical model of disability in which she claims that 'the central postulate is not to concentrate on "disabilities", but to focus on various social needs and adapt the geographical environment (social, as well as physical) accordingly'. While the bio-psycho-social model acknowledges both individual factors (as in the medical model) and social action which includes the environment (as in the social model) as determinants of disability, Zajadacz's (2015) geographical model emphasises the interrelation between disabled people and geographical space and focuses on the accessibility of places and spaces in the built environment. Without specifically referring to a 'geographical model', in the 'Geographies of Disability', Gleeson (1998) highlights that there is a relationship between geography and disability where geography shapes the experience of disabled people within their surrounding environment. Nonetheless, the focus on disability in spatial disciplines is not attentively given, hence, social and spatial processes restrict rather than enable disabled people (*ibid.*).

Both the bio-psycho-social and geographical models are mainly focused on developing social inclusion where disabled people have the opportunity and resources necessary to participate in society and 'to maintain a standard of living

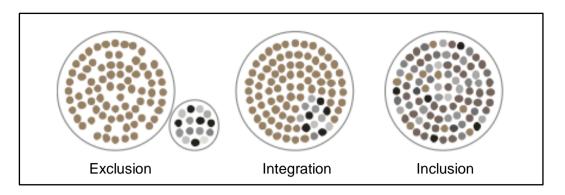


Figure 2-2 Model of social exclusion, integration and inclusion

Source: Adapted from Schrader (2012) cited in Zajadacz (2015)

which is acknowledged as normal in a given society' (Zajadacz. 2015, p.196) and are guaranteed greater participation in the decision-making processes. Figure 2-2 illustrates the differences between social exclusion, integration and inclusion of disabled people in society. The light grey and black dots represent disabled people while the brown dots represent wider society. The figure shows that in an exclusive environment, disabled people are totally excluded from the main society. In an integrative society, disabled people are partly included in society. Meanwhile, in an inclusive environment, disabled people are included in all aspects of activity in society by having equal opportunities for social participation.

Table 2-1 summarises the different models of disability and is adapted from Zajadacz (2015).

Table 2-1 Summary of models of disability

	Medical model	Social model	Bio-psycho-social/ ICF model	Geographical model
Issue	Personal problem	Social issue	Somatic and social issue	Spaces issue
Approach	Medical care	Social integration	Medical care and social integration	Spatial integration
Action	Individual treatment	Social action	Individual treatment and social action	Accessibility of places and spaces
Solution	Personal adjustment	Environmental manipulation	Personal adjustment and environmental manipulation	Universal design
Advocate	Care	Human rights	Human rights and care	Human rights
Expectation	Individual adaptation	Social change	Social change, exclusion, integration, inclusion	Inclusion

Source: Adapted from Zajadacz (2015)

In this thesis, emphasis will be placed on the issue of accessibility of the built environment which is in line with the geographical model. However, it is debateable that the geographical model is a new model introducing a new dimension of disability. Instead, the geographical model is better seen as a variant of the biopsycho-social model in highlighting accessibility issues related to disabled people. Accessibility of the built environment is discussed in the next section.

# 2.2 Accessibility of the built environment

An accessible built environment promotes a more equal and inclusive society by enabling the participation and inclusion of everyone. It is a vital aspect of disability equality because it is the basis for participation in society (Salkeld, 2015). There are many terminologies associated with accessibility, from a design terminology that is

specific to cater for disabled people's access, to a terminology of accessibility that covers a diversity of users, including but not limited to disabled people. Even though access seems vital to everyone, there are many obstacles in the built environment that hamper disabled people. To have a better understanding of how the accessibility of the built environment affects disabled people's inclusion in the city centre, this section discusses (1) accessibility and social sustainability, (2) accessibility-related terminologies, and (3) barriers in the built environment. It is argued that access issue is inevitably associated with a justice discourse. For example, in linking accessibility with social sustainability, and in highlighting barriers in the built environment (or 'architectural disability' as termed by Hanson, 2004) as discussed next.

## 2.2.1 Accessibility and social sustainability

Accessibility is a crucial consideration in design and planning in promoting social sustainability in cities. It is important to evaluate access to key services and facilities to measure the social equity that contributes to social sustainability (Dempsey *et al.*, 2011). The Western Australian Council of Social Services (WACOSS) defines social sustainability in the following terms:

Social sustainability occurs when the formal and informal processes, systems, structures and relationships actively support the capacity of current and future generations to create healthy and liveable communities. Socially sustainable communities are

equitable, diverse, connected and democratic and provide a good quality of life.

(McKenzie 2004, p.18)

McKenzie then simplifies the definition of social sustainability as 'a positive condition within communities, and a process within communities that can achieve that condition' (*ibid.*, p.23).

Table 2-2 shows contributory factors to urban social sustainability outlined by Dempsey *et al.* (2011). Based on the table, it can be argued that other contributory factors to social sustainability from the non-physical factors are also underpinned by physical access. For instance, physical access is needed to reach institutions (for education and training), to enjoy social life with peers (social interaction) and to access the workplace (for employment).

Table 2-2 Urban social sustainability contributory factors

Non-physical factors	Predominantly physical factors
<ul> <li>Education and training</li> <li>Social justice: inter- and intragenerational</li> <li>Participation and local democracy</li> <li>Health, quality of life and well-being</li> <li>Social inclusion</li> <li>Social capital</li> <li>Community</li> <li>Safety</li> <li>Mixed tenure</li> <li>Fair distribution of income</li> <li>Social order</li> <li>Social cohesion</li> <li>Community cohesion</li> <li>Social interaction</li> <li>Sense of community and belonging</li> <li>Employment</li> <li>Residential stability</li> <li>Active community organisation</li> <li>Cultural traditions</li> </ul>	<ul> <li>Urbanity</li> <li>Attractive public realm</li> <li>Decent housing</li> <li>Local environmental quality and amenity</li> <li>Accessibility (e.g. to local services and facilities/employment/green space)</li> <li>Sustainable urban design</li> <li>Neighbourhood</li> <li>Walkable neighbourhood: pedestrian friendly</li> </ul>

Source: Dempsey et al. (2011)

An accessible built environment empowers disabled people by allowing them the opportunity for independent living. According to Gleeson (1998) however, this view is more popular in the United States (US), but in the United Kingdom (UK), independent living entailed collective responsibilities in helping each other among individuals and organisations. Oliver (1993) cited in Gleeson (1998) suggests that social inclusion and cultural respect is more important than individual independence.

Returning to the social sustainability discussion, Cuthill (2010) suggests that social justice and equity form one of the components of social sustainability in addition to social capital, social infrastructure, and engaged governance, as illustrated in Figure 2-3. Cuthill (2010) concludes that the distribution of infrastructure, services and resources must be underpinned by considerations of social justice and equity.

These must include fairness in the distribution of resources; equality of rights established and promoted for all; fair access for all to economics resources, services and rights essential to quality of life; and opportunity for all to participate in society and be consulted on decision-making (*ibid.*)

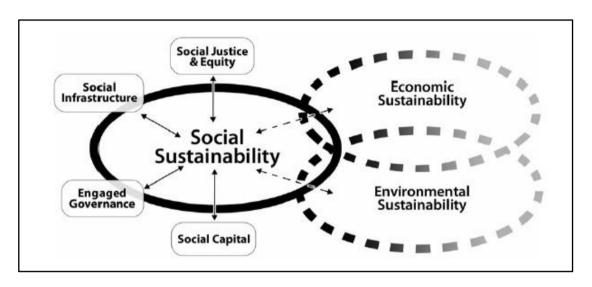


Figure 2-3 Conceptual framework for social sustainability

Source: Cuthill (2010)

In addition to the viewpoint that disabled people's access to the city provides benefits in empowering disabled people in life, it is noted that accessibility does contribute to a sustainable development. Brundtland (1987) represented the United Nations Commission on Environment and Development which defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (*ibid.*, p.41). Brundtland reported that environment and development are not separate challenges: they are connected in a complex system of cause and effect. Moceviciene and Strods (2015, p.173) defined sustainable development as 'environmental, economic and social well-being for today and tomorrow for all

human in the world'. After the presentation of the Brundland report, the sustainability debate started to be applied to cities in the 1990s (Weingaertner & Moberg, 2014). Urban areas are central to all aspects of sustainable development where they could be the centres of economic wealth creation and also the location of social deprivation (Rydin, 2010). Weingaertner and Moberg (2014) point out that the ability of cities to sustain and promote a good quality of life is as a result of the realisation that urbanisation provides both challenges and opportunities for promoting a more sustainable development.

In 2015, the 2030 Agenda for Sustainable Development was formulated to end poverty, fight inequality and injustice, and tackle climate change by 2030. One of the goals is to make cities and human settlements inclusive, safe, resilient and sustainable (Kutesa, 2015). Kutesa (2015) argues that by 2030 cities should ensure accessible, adequate, safe and affordable housing, sustainable transport systems, provide universal access to green and public spaces and enhance inclusive and sustainable urbanisation. He advocates that cities should implement integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, and resilience to disasters with special attention to the needs of those in vulnerable situations including disabled people (*ibid.*). Therefore, this research in investigating physical access for disabled people's inclusion in the city centre attempts to be part of the efforts towards understanding the impediments to achieving an inclusive and just city.

According to Weingaertner and Moberg (2014), generally, urban development is strongly led by the public sector, hence, promoting social sustainability issues within

an urban environment is assumed to be the role of the public sector, specifically the local authorities. However, for Rydin (2010), the involvement of infrastructure stakeholders such as developers and planners from both public and private sectors is the key to spatial planning for sustainable urban development. The process of urban development could drive change especially in the decision-making process and the role of public sector with the support of other stakeholders in tackling development issues (*ibid.*). Furthermore, from a sustainability stance, the involvement of communities as part of the stakeholders are highly encouraged; to include participation from all (Casserley & Ormerod, 2003). With regard to this research, the involvement of stakeholders includes the 'participation' of disabled people as the end users of access and facilities provided in the built environment.

In the above context, the word 'participation' is different from the word participation as being used in 'participation in society' (the involvement in everyday life situation). Casserley and Ormerod (2003) use the term 'participation' to refer to the concept of procedural justice (Faburel, 2012), which emphasises citizen participation in decision-making that affects people's lives. When people are given the opportunity to participate in decision-making about policies and services that affect them, the decisions are more likely to be seen as just (Cohen, 1985). Nonetheless, Greenberg and Folger (1983) cited in Cohen (1985) claim that the involvement of participants expresses the interests of all members, but the results are usually based on the management choice to make decisions. Thus, a programme of awareness on the importance of stakeholder participation that involved both parties (the participants and the management) could close the gap in decision-making (Hazreena, 2006).

Consensus building that brings together major stakeholders to address controversial issues (Yigitcanlar & Teriman, 2015) and good governance with society engaging in dialogue (Marcuse, 2010) could benefit the development of physical access. Moreover, participation is one of the major characteristics of good governance, while 'good governance is a key component of successful accessibility' (Frye 2011, p.45). Good governance is necessary in creating an enabling environment for poverty reduction and sustainable human development: good governance is participatory, transparent, accountable, effective and equitable and promotes the rule of law (UNESCO, 2017).

Procedural justice gives more opportunities for disabled people to be heard as a citizen (and be given recognition) by being given the chance to be involved in planning and designing infrastructures, services and facilities for a better physical development. They can also suggest what works best for a seamless journey or in negotiating barriers in the built environment that favour people in their position. Hence, Kadir and Jamaludin (2012) call for other researchers to focus on disabled people's feedback on issues related to accessibility in order to tackle issues on the physical environment efficiently. There is a need, however, to understand accessibility-related terminologies to further appreciate the relation between accessibility and inclusion in society.

## 2.2.2 Accessibility-related terminologies

The word 'accessibility' is associated with various terms such as barrier-free design, universal design, inclusive design, design for all, and accessible design (Yusof &

Jones, 2014; Kamarudin *et al.*, 2015). Even though the terminologies are used under the umbrella of accessibility, these terms have different definitions and intentions in the built environment (Yusof & Jones, 2014). In discussing physical access and facilities in KL and Malaysia generally, it is noted that several terminologies are used in relation to access, for instance, the terminologies of barrier-free design (see Isa *et al.*, 2016; Tiun & Khoo 2013; Sanmargaraja & Wee 2008), accessible design (see Hussein & Yaacob 2012; Rahim *et al.*, 2010), and universal design (Kadir & Jamaludin, 2013; Rahim *et al.*, 2014).

In this thesis, there is a need to distinguish between accessibility terminologies (and their similarities) in order to have a better understanding of their relevance pertaining to design of spaces, buildings and facilities in the city.

### 2.2.2.1 Barrier-free design and accessible design

The original concept of barrier-free design was focused on removing barriers at rehabilitation centres for military personnel during the post-World War II period when many soldiers returned from the war with various disabilities. The concept was gradually accepted around the world as a design which removes barriers in the built environment for the purpose of accommodating disabled people in the physical environment (Rahim *et al.*, 2014; Yusof & Jones, 2014).

According to Kose (1998), in the 1970s, the early movement of barrier-free design in Japan was originally to eliminate physical barriers, also termed 'structural barriers' (Marston, 2002; Reeve, 2004; Smeltzer, 2007) for wheelchair users to reunite with society. However, a more recent study by Yusof and Jones (2014)

shows that the term barrier-free design is still widely used in Japan to denote universal design, as universal design is considered to have evolved from barrier-free design.

Meanwhile, 'accessible design' is concerned mainly with disabled people's access where buildings are built or retrofitted with accessible facilities such as ramps and toilets (Hussein & Yaacob, 2012). Accessible design is often associated with retrofitting at extra cost to the client (Ormerod & Newton, 2006). It is distinguished from universal design as it mainly follows a set of regulations i.e. design standards, regulations and building codes to accommodate disabled people (Yusof & Jones 2014). However, for Gleeson (1998), access regulation reflects the weakness of 'surface allocation' resources, which are viewed by Fraser (1995) in Gleeson (1998) as 'affirmative' remedies/actions (affirmative action is further explained in 2.2.3).

#### 2.2.2.2 Universal design

The term 'universal design' was created in the US and is widely used in other countries i.e. Japan, Australia and Malaysia (Yusof & Jones 2014). Universal design means 'simply designing all products, buildings and exterior spaces to be usable by all to the greatest extent possible' (Mace *et al.* 1991, p.4). It is complementary to ICF where universal design does not limit the usage to a certain group of people but recognises the different ability of the users. One example of universal design is a kerb cut or dropped kerb that could be used for wheelchair users, pushchairs and bicyclists to get to the street level from the pedestrian/cyclist way with ease.

According to Barnes (2011), the general aim of universal design is to improve the physical and social environment in the hope that it might reduce the need for special provision and assistive technologies for disabled people. The principles of universal design (North Carolina State University, 1997) are simplified by Bringolf (2008) as shown in Table 2-3. Bringolf (2008) agrees that designing universally has great advantages for disabled people, as the needs of people with disabilities are automatically included in design proposals. However, universal design is often misunderstood as design that exclusively caters for the needs of disabled people in respect of access and facilities in the physical environment (Bringolf, 2008; Yusof & Jones, 2014). The term is seen as a synonym for 'disabled' design even among the legislators, designers, and also by disability rights activists (Bringolf, 2008; Yusof & Jones, 2014) due to 'a lack of experiential knowledge in the epistemological grounding of universal and inclusive design' (Lid & Solvang 2016, p.183).

Table 2-3 Universal design principles

Principles	Explanation
Equitable use	People with diverse abilities can use it
Flexibility in use	Can be operated in more than one way
Simple and intuitive use	Easy to use without prior experience
Perceptible information	All users can 'see' how to use it
Tolerance for error	Unintended and adverse use is minimised
Low physical effort	Can be used comfortably and efficiently
Size/space approach and use	People of any size or posture can use it

Source: Adapted from Bringolf (2008)

Conventional design had three disadvantages that drove the emergence of the universal design movement:

"First, [conventional design] reinforced the provision of separate or segregated access routes for disabled people and relied too much on specialized equipment or adaptations that drew attention to a person's impairment. Second, too often building adaptations were poorly done leading some observers to suggest that designing for disabled people compromised the aesthetic qualities of buildings. Third, design solutions revolved around the provision of wheelchair access and did not cater for a wider range of disabled people."

(Imrie 2015, p.875)

In planning and designing services, facilities and infrastructure that are accessible to disabled people, the 'product' should not be distinguished as specially designed for disabled people but should permit universal use by others (Barnes, 2011). Therefore, there is a need to understand the design concepts that promote accessibility in the built environment to enable access for all, from the initial stages of design (Goodall, 2010). Hence, aesthetically compromising issues to cater for access as highlighted by Imrie (2015) could be reduced when accessibility characteristics have been considered from the beginning of the design process compared to adaptation of additional access facilities after the project is completed. Nonetheless, designing access is not straightforward because of the diverse needs among users. Humans have different needs related to different conditions and surrounding environments that influence their capability to function (Sen, 1993). Barnes (2011) highlights that meeting the different needs of different people is a challenge in designing universally. For example, the needs of the visually impaired and a wheelchair user are different: access for a wheelchair user is made easy with a wide and level surface but the visually impaired person appreciates a kerb as a

sort of path guidance in the street level environment (Hanson, 2004; Barnes, 2011; Manley, 2011). Hence, Heylighen and Bianchin (2018) posit questions on how the designers of the built environment might achieve fairness in design that accommodates all users.

## 2.2.2.3 Inclusive design and design for all

'Inclusive design' is more established in the UK where design is accessible and usable by the widest range of abilities without the necessity for special adaptation (Yusof & Jones 2014). Meanwhile, in the mainland European countries it is more typical to use the term 'design for all'. Hence, Bringolf (2008) suggests that inclusive design, design for all and universal design reflect similar ideas as they allow everyone to have access to services and facilities. These three design concepts should be viewed as 'designing for the whole of the population bell curve by creating the maximum utility for the maximum number of people regardless of age, culture, and education or ability level' (*ibid.*, p.48).

As the aim of inclusive design and design for all is similar to universal design, Yusof and Jones (2014) conclude that these terminologies are gradually being used interchangeably, and Barnes (2011) directly refers to universal design as a design for all approach that is widely linked to address social inclusion and human diversity. Ormerod and Newton (2006) however distinguish inclusive design from universal design where they view that the seven principles of universal design as in Table 2-3 focus more on technical fixes that do not solve the root source of the exclusion.

Hanson (2004) believes it important that the attitude of society, its values and practices, recognises the need for universal design and that designers have the essential knowledge, skills and understanding to achieve an inclusive environment. Inclusive design, design for all, and universal design are not just an issue of social justice, but also an economic matter where the design is accessible and usable by the widest range of abilities without the necessity for special adaptation (Hanson, 2004; Yusof & Jones, 2014). Therefore, later modification of the building (or facilities) will not be needed. Moreover, modifying buildings for adaptation for access by disabled people is expensive, in contrast to designing inclusively and universally from the initial design stage (Kose, 1998; Hanson, 2004; Goodall, 2010).

Meanwhile, barriers in any access cause inaccessibility of the built environment and pose challenges for disabled people in terms of mobility. Barriers that are caused by an inaccessible built environment are reviewed in the next section to highlight the significance of access issues for disabled people; this emphasises the necessity for this research to be undertaken.

#### 2.2.3 Barriers in the built environment

An inaccessible built environment or a 'discriminatory design' can cause social oppression (Hahn,1986 cited in Gleeson, 1998). It can result in stress, low self-esteem and discomfort for disabled individuals when they attempt to participate in society, therefore moving them negatively (Iwasaki & Mactavish, 2005). Moreover, barriers could make participation totally impossible, leading to the exclusion of disabled people. Therefore, the accessibility of the built environment is vital in

enabling disabled people to fully enjoy the services and facilities provided without discrimination on an equal basis with others.

Urban design in the built environment is a process that makes better places for people and the 'people' are all potential users of the built environment regardless of their gender, status and ethnicity, whether they are non-disabled or disabled people (Carmona et al., 2010). However, Hall and Imrie (1999) as cited by Carmona et al. (2010, p.158) highlighted how disabled people experience the built environment as 'a series of obstacle courses'. In general, building and planning legislation have failed to reduce discriminatory urban design, hence, the design and development process are viewed as disabling and 'disablist' (Imrie, 1996; Imrie & Hall, 2001). Imrie and Hall (2001) contend that the related policies and people who create the built environment are the main contributors to the barriers where these parties ignore the fundamental needs of disabled people. The built environment professionals lack sensitivity and awareness of disabled people's needs and only react to such needs if forced by legislation (Hanson, 2004). Imrie and Kumar (1998, p.357) argue that disabled people's needs are 'poorly articulated' in the design and development of the built environment and design solutions were often tried and tested without input from disabled people.

The above arguments show that an unjust situation exists where disabled people are not being recognised in society. Honneth (2004) posits that recognition is not in the elimination of inequality, but in the avoidance of 'humiliation' or 'disrespect'; dignity and respect are central in justice, not just equal distribution or equality of goods. Fraser (1995) cited in Gleeson (1998, p.145) however highlights that

redistributional policies (i.e. the welfare state) can be 'affirmative remedies' that 'seek to redress end-state maldistribution, while leaving intact much of the underlying political-economic structure'. While interviewed by Dahl *et al.* (2004), Fraser comments that applications of the affirmative approach have been made to correct mistakes, but the fundamental arrangements remain the same; instead she defends the transformative approach which would produce deeper changes that affect everyone. Fraser (2003) proposes that the transformation process from the idea of 'redistribution' to the notion of 'recognition' is achieved through recognising the dignity of all individuals.

Frye (2011) reports that many cities in developed countries have made significant progress to improve disabled people's access, yet, there are still many mistakes and gaps left. However, there is much further to go in the Global South (*ibid.*). Even though the data collection for this research study is in KL, Malaysia, the review of physical barriers in cities is not limited to Global South evidence since there are common barriers hampering disabled people in the built environment globally (for example see Isa *et al.* (2016) for Malaysia; Ahmed *et al.* (2014) for Nigeria; Sawadsri (2010) for Thailand; Hanson (2004) and Imrie & Kumar (1998) for the UK).

Innumerable obstacles and barriers hinder disabled people and different aspects of the built environment will be barriers for people with different impairments (Goodall, 2010). The UNCRPD stated that obstacles and barriers to access should be identified and eliminated in 'buildings, roads, transportation and other indoor and outdoor facilities, including schools, housing, medical facilities and workplaces' (UN 2006, p.6). This research is looking into disabled people's inclusion in the city centre.

The journey to the city centre involves all the facilities that could be grouped under (a) transportation and (b) buildings and the street level environment. Hence, reviews of barriers in the built environment are discussed in these distinct but interrelated categories.

#### 2.2.3.1 Barriers in transportation

A journey for disabled people could be eased with a transport chain that is accessible from door to door to facilitate independent mobility with a seamless and effortless journey (Hanson, 2004; Frye, 2011). Public transportation should 'follow regular schedules; be safe and rapid, guarantee high service quality, utilize resources efficiently and meet users' need' (Khalid *et al.* 2014, p.567). Making transit more user-friendly may help to increase ridership, which in turn helps to make cities more accessible, but evidence from many contexts shows that, in reality, not all links are truly accessible. Hepworth and Ducatel (1992) cited in Marston (2002, p.3) comment that 'public transportation is all about anxiety, uncertainty, and waiting'.

In the UK, buses in regular use have a low floor that is accessible to wheelchair users who have boarding priority. Yet, for train services in London, a study by Ferrari et al. (2014) shows that the travel time of the journeys of wheelchair users becomes 50% longer, partly contributed to by the vertical and horizontal gaps between the train and platform (for stations built about 150 years ago). Priority in accessibility upgrades was given to high-demand stations but even though measures were taken, such as raising part of a platform to align it with the train doors to reduce the

physical barriers, there remains a huge amount to be done to allow step-free access from street-to-platform (*ibid.*). However, there are pamphlets providing guidance on how to avoid stairs in tube stations, produced by Transport for London (2018) and also other guidance for any transport access issues run by an organisation for disabled and older people (Transportforall, 2018).

As part of the examples of transportation barriers in the Global South, many bus drivers in Zimbabwe discriminate against disabled people by refusing to carry them as a passenger and some disabled people reported that they needed to pay for two tickets: one for the passenger and one for the wheelchair (Frye, 2011). In Klang Valley, Malaysia, it was reported that buses do not follow schedules and the negative attitude of bus drivers is unfavourable to disabled people, causing frustration (Mothiravally *et al.*, 2014). These examples show that barriers in transportation do not only appear in a physical form but are socially constructed when the disabling environment comes from discriminating action from society as viewed by the social model of disability.

Other physical barriers for disabled people in transportation in Malaysia include parking spaces of inappropriate size and lack of provision for disabled parking, inaccessible buses, and non-compliance with legislation, regulation and standards for access and facilities in the transportation hub, such as the lack of tactile/guiding blocks for the visually impaired and lack of signage (Mothiravally *et al.*, 2014; Kamarudin *et al.*, 2015; Isa *et al.*, 2016). It indicates that provision in terms of legislation and regulation for disabled people's access does not simply mean that

the transportation-related facilities will lead to accessible design and promote disabled people's inclusion in the city.

## 2.2.3.2 Barriers in buildings and the street level environment

After tracing the impact of medical, social, and bio-psycho-social models of disability, Goldsmith (1997) cited in Hanson (2004) considers barriers in buildings as 'architectural disability' that is produced by the design of the built environment. As cited by Ormerod and Newton (2006), Goldsmith (1997) highlights that architectural disability affects those who are disadvantaged by a building, no matter that they are living with or without impairment.

Manley (2011) claims that the effort to reduce environment-related discrimination centres on buildings but not on the street environment. However, numerous researchers focus their research on city and disability such as Greed (2011) who discusses the diversity and equality agenda at the street level situation. Meanwhile, Clarke *et al.* (2011) examine how characteristics in the urban environment can interact with underlying impairments and limitations in activity to either promote or hinder the full participation of adults in society, while Bromley *et al.* (2007) investigate city centre accessibility for wheelchair users in terms of the consumer's perspective and planning implications.

Based on research in Western countries, barriers in buildings include poor lighting, steps at main entrances, narrow entrances and inaccessible bathrooms while barriers in the street level environment include poor street conditions (e.g. broken pavements), choice of pavement materials (e.g. cobble stone), heavy traffic, and

high kerbs (Clarke *et al.*, 2011; Greed, 2011; Rosenberg *et al.*, 2013; Gaete-Reyes, 2015). For the street level environment, the visibility of wheelchairs in the urban environment is an indicator of a basic level of mobility (Frye, 2011). However, maintenance issues in the street level of the urban environment such as broken kerbs and streets are associated with more obstacles that make uneven pavements, thus creating problems for those with mobility difficulties, especially the wheelchair user (Clarke *et al.*, 2011; Gaete-Reyes, 2015). Manley (2011) suggests that the management of existing streets and public spaces needs to be reconsidered where the responsibility is fragmented so that no specific institution has a sense of ownership for the street level environment barriers that create limitations for disabled people's access. Manley (2011) further added that this situation makes disabled people frustrated with the result that some might not leave their homes at all.

Greed (2011) suggests that many design policies inspired by the sustainability agenda do not consider inclusive urban design. There is a lack of awareness of people's needs which has resulted in a decrease of accessibility, preventing them from moving around in comfort and enjoying the city (*ibid.*). Meanwhile, in the Global South, some common causes of barriers in the built environment are the result of insufficient infrastructure, inadequate budgetary allocations, lack of policy implementation and enforcement, and lack of awareness and knowledge among service providers (Sawadsri, 2010; Hashim *et al.*, 2012; Kamarudin *et al.*, 2012; Ahmed *et al.*, 2014; Chiwandire & Vincent, 2017). Sawadsri (2010) and Chiwandire and Vincent (2017) highlight issues from Thailand and South Africa respectively, representing the upper-middle-income country at similar transitions as Malaysia.

Evidence from the above research shows that there are challenges faced by the service providers in accommodating disabled people's access in developing countries, not to mention the effort to achieve universal design; yet, it is also a struggle to achieve accessible design (see 2.2.2 for accessibility-related terminologies).

Investigation of access barriers in Malaysian buildings seems to verify Manley's (2011) claims that research studies are mainly looking into the accessibility of buildings rather than the street level environment where the research scope is usually on individual buildings and the surrounding area within the building boundary (for example, see Kamarudin et al., 2015 – public bus terminal buildings; Kadir & Jamaludin, 2012b – government buildings; Hashim et al., 2012 – shopping malls; Rahim et al., 2010 – hotels). In general, the majority of previous researchers used accessibility checklists to examine the (in)accessibility of buildings and public spaces in KL (and other Malaysian cities). The common barriers in building design in Malaysia include steps to access buildings, the absence of options for vertical access other than staircases, lack of signage in buildings, and incorrect design to allow wheelchair manoeuvring (Kadir & Jamaludin, 2012; Kamarudin et al., 2015; Isa et al., 2016). Meanwhile, many of the barriers in the street level environment affect wheelchair users, such as narrow walkways, inappropriate ramp gradients, and high kerbs without a kerb cut (Kamarudin et al., 2015; Isa et al., 2016). These studies, however, mainly refer to the street level conditions within the building's boundary.

Buildings that were built in the colonial era (when access for disabled people was not a consideration) are less accessible than the newer buildings (Jamaludin & Kadir, 2012; Foster, 2013; Heylighen et al., 2017). Meanwhile, any improvements need to be conducted with minimum interventions to keep the authenticity of older buildings without sacrificing the heritage value (Harun, 2011; Jamaludin & Kadir, 2012). Hence, there are some constraints to access provision where proposals to make historic buildings more inclusive may raise objections from conservation authorities (Heylighen et al., 2017) as the historic building 'integrity' might being compromised (Gleeson, 2001). For example, it is not normally acceptable to alter or add a mechanical device to a staircase that is a principal architectural feature of a historic building (Foster, 2013). This thesis argues that it is a challenge for building conservators to balance access needs with concerns about retaining the authenticity and heritage value of a building or place. Nonetheless, an alternative entrance for disabled people's access such as the introduction of a new side entrance could be considered (Foster, 2013). Jamaludin et al. (2010) give an example of the accessible historic Whitby Abbey in the UK where the visitor centre was added with a glass-cased elevator to connect visitors to the ground level of the abbey. The lift does not make contact with the existing structure; therefore, visitors can experience the beauty of the textured old stones of the abbey and the 17<sup>th</sup> century rubble walls of the visitor centre as the lift moves up and down. This example shows that it is possible to provide access for disabled people without sacrificing the heritage value of the building.

## 2.2.3.3 Identifying and removing barriers for an enabling environment

Imrie (2001, p.232) argues that 'the sociospatial patterns of ableist values are etched across the city in numerous ways, forming a type of architectural apartheid' and concludes that cities contain barriered and bounded spaces, or spaces of exclusion. In relation to the social model of disability, barriers are seen as the disabling factor preventing disabled people from fully enjoying everyday life. The social model of disability believes that when barriers are removed, disabled people can be independent and have choices and control over their life. However, barriers are not just physical but also attitudinal and organisational in society (Carson, 2009). Thomas (1999) cited in Reeve (2004) highlighted that these barriers affected disabled people from psycho-emotional dimension of disability as discussed in 2.1.3.

Disabled people are disadvantaged when their social exclusion prevents them from achieving their full potential or functioning. This results from the interaction of an individual's personal characteristics (e.g. age, impairment) or personal biographies (as in Reeve, 2004), basket of available goods (assets, income) and environment (social, economic, political and cultural) (Mitra, 2006). However, the possession of goods which have 'characteristics' is valuable only if it enables the person to do or be a range of things. For instance, for a person with a spinal cord injury, a wheelchair has the characteristic of providing transportation; it does not have such a characteristic for a person who can walk. Functioning is an achievement of the individual in the states of 'being and doing' (manages to do or be in life) while capability refers to the set of functioning activities to which a person has effective

access (Sen, 1993). Less capability means less opportunity to achieve those things that a person has reason to value. Harnacke (2013) gives an example of playing as functioning, while to have the opportunity to play is the corresponding capability that should be focused on.

There is a need to create 'enabling environments' that aim to establish social independence which emphasise the capabilities rather than a person's impairment (Corker; Hales, 1996 in Gleeson 1998). For Barnes (2011), the primary key to independent living for disabled people includes peer support and personal assistance and Barnes believes that access for all is only possible with human involvement. A recent research study by Kadir and Jamaludin (2018) shows that human involvement i.e. the members of staff in a building play a significant role in ensuring access for disabled people. The staff need to consider how to interact and assist disabled visitors since in general, when current building design is not totally inclusive for diverse users (Heylighen & Bianchin, 2018; Kadir & Jamaludin, 2018). Gleeson (1998, p.150)'s definition of an enabling environment with regard to disabled people is 'the satisfaction of material needs, as socially defined in the relevant regional or national context; socio-political participation and cultural respect; and socio-spatial inclusion' which might include actions from both local policy and a whole society.

Nonetheless, for a 'literal' physical built environment, an access audit is one of the ways that can help to improve physical access. Holmes-Siedle (1996) suggests that the usability of a building can be examined by conducting an access audit in an existing building against predetermined criteria such as the minimum dimension of

door widths to enable wheelchair access and the minimum space required for wheelchair manoeuvre. The main purpose of an access audit is to identify barriers that need to be rectified so that the facilities can be used by everyone equally. Greed (2011) however strongly recommends that all non-disabled people conducting access audits of public property should be well trained and sympathetic to the needs and characteristics of users.

In recent years, access audits have been extended to be used outside buildings and could identify deficiencies in pedestrian infrastructure such as a pathway that is blocked by objects like signage and flower pots, and motorists parking on the pedestrian path (Frye, 2011). Manley (2011) terms this process as a street audit where it is designed to record all the barriers to access and use and includes a cycling audit and street interviews that involve members of local groups and visitors to obtain as many views as possible from people with different genders, ages, races, cultural perceptions and abilities. A street audit could provide a number of benefits including raising public awareness of the problem of the inaccessible nature of streets, drawing the attention of local government organisations to the need to consider the rights of disabled people in development, and drawing attention to the way in which different groups of people are affected by barriers, e.g. people with different types of impairment, women, children, and elderly people (ibid.). In addition, a street audit could be a record that could be checked over time to determine whether improvements have taken place, and used as a basis for the publication of access maps to indicate accessible routes and premises (ibid.).

While there are always ways to change the current physical urban development, architects, planners, access officers and all related parties possibly involved in urban development should understand the concept of justice and inclusion in society. The daily lived experiences of the disabled should be considered in design since disabled people are experts in the barriers that they experience on a first-hand basis; therefore, their experiences as disabled people should be interconnecting the design and implementation of public policy (Imrie & Kumar, 1998; Bailey et al., 2015). Even though disabled people are generally seen to be vulnerable, their experience enables them to become valued contributors to the environment (Abbott & Porter, 2013). Any new build or refurbishment of buildings and improvement of areas should focus on disabled people's feedback on issues related to accessibility in order to tackle issues in the built environment efficiently, which embodies the concept of participation (or democratic) in planning which is part of achieving a just city (Fainstein, 2009). By following this strategy, the related requirements of disabled people's access and facilities could clearly be heard and provided for, in a more just built environment.

Universal design (discussed in 2.2.2) implementation in the built environment is significant to solve access problems from the initial design stage without having to spend extra funding for later adaptation. However, the existing building stocks and the street level environment definitely require building access audits and street audits, especially for buildings and places that were designed without considerations of accessibility from the beginning. Therefore, rectification could be undertaken in order to have a more just and inclusive built environment that promotes independent living.

## 2.3 Summary and conclusion

This chapter has contributed to the understanding of disability and accessibility in the built environment. The evolution of disability definitions and models from the medical model to the social model of disability, including the extended version of the social model with the psycho-emotional dimension of disability, has transformed disability perspectives from charity based to rights based. A compromise between both models has recognised the diversity of the human body and the social environment that should be considered in addressing disability (bio-psycho-social model). This research favours the bio-psycho-social model/ICF model which views disability as more than just disability that is physically apparent but considers other health conditions and is not limited to the attributes of the individual but also takes into account the surrounding physical and social environment. However, since this research focuses on physical access for disabled people's inclusion in a city centre environment, it is consistent with the geographical model which emphasises the interrelation between disabled people and geographical space and focuses on the accessibility of places and spaces in the built environment, but is still based on the bio-psycho-social model. In terms of accessibility terminology, 'universal design' is the overall aim which does not limit usage to certain conditions of people but recognises users' diversity with different abilities, but in the interim, affirmative action in the form of adaptation is also needed.

Several concluding points can be drawn from this review on disability and accessibility in the built environment. Even though the medical and social models of disability are often presented as distinct, it is hard to deny that disabled people

frequently experience problems arising from their health conditions. Disability should not be viewed within the narrow focus of either the medical model alone or the social model of disability alone; therefore, a balanced approach is needed, giving appropriate weight to the different aspects of disability.

First, it is crucial to understand the design approach in providing access in the built environment since it affects the development of an inclusive environment. Universal design could help to solve accessibility issues among disabled people and other people with mobility difficulties as viewed in the geographical model of disability. This research argues that extra costs in making the environment accessible for disabled people are not to be seen as a burden by the service providers but to offer disabled people freedom or opportunities to achieve functioning. Furthermore, universal design, although often misunderstood by service providers as a design specifically for disabled people, is design applicable to the greatest number of users possible.

Second, different people have different needs according to different conditions and the surrounding environment that influence their capability to function. Goods or commodities can only be appreciated when they could be used to increase the functioning (of disabled people for this research). With relation to the built environment, by having the opportunity to participate and being recognised in decision-making such as in planning and design processes in the built environment, disabled people could contribute to a more inclusive environment since they are the experts who experience the barriers themselves. Designing facilities with

consideration of different ability of the users is also a matter of recognising disabled people.

To sum up, this literature review highlighted the impacts of an inaccessible built environment on disabled people. Inaccessibility of the built environment restricts disabled people from participating in society. Thus, their opportunity for a better life is denied when for example, physical access to schools (for education), to workplaces (for employment and earnings), and entertainment are accompanied with barriers or is not even provided at all. Hence, it is vital to identify those barriers (and also facilitators) in order to understand how they are experienced by disabled people in the current physical access in/to the city centre that affects their inclusion. However, the majority of previous researchers used accessibility checklists to assess the (in)accessibility of buildings and public spaces in KL (and other Malaysian cities). No attention has been given to disabled people's lived experience or psychological and emotional perspectives in negotiating barriers while accessing KL city centre. This ignores the fact that disability and the built environment are strongly tied, as disability encompasses both structural and psycho-emotional dimensions, as described by the extended social model of disability. In bringing disability issues in the built environment into the context of disabled people's inclusion, it is hoped to develop the body of knowledge that is yet to be given sufficient consideration in human geography.

### **CHAPTER 3**

#### RESEARCH METHODOLOGY

This research aims to investigate the physical accessibility of Kuala Lumpur (KL) city centre, as an example of a city in transition, and its effects on the inclusion of disabled people. Three research questions (RQ) driving this research as presented in Chapter 1 are as follows:

- RQ1 What is the state of the regulatory frameworks surrounding the provision of physical access for disabled people to KL city centre?
- RQ2 What are the barriers and facilitators experienced by disabled people in accessing KL city centre and how do they affect the inclusion of disabled people?
- RQ3 How effective are measures taken by professional stakeholders in providing physical access for disabled people's inclusion in KL city centre and what are the possible reasons behind any physical access implementation gap?

In addressing the research questions, several methods and approaches were employed. This chapter presents and discusses the key methods and approaches used in conducting this research. The discussions are divided into five sections: (1) research philosophy, (2) research approach, (3) data collection method, (4) data analysis, and (5) positionality and reflections. In addition, the challenges in the process of completing this research and limitations that the methods entailed are also explained throughout the chapter.

## 3.1 Research philosophy

Prior to the growth of disability studies in the 1980s, most disability research studies were in medical-related disciplines (Abdullah, 2013) that generally embraced a positivist paradigm. Positivists secure objective knowledge with a rigid structural framework (Edirisingha, 2012) such as found in experiments (Creswell, 2014) often conducted in a laboratory. Positivists strive to remain detached from the participants to keep emotionally neutral, and distinguish between science and personal experience and fact and value judgement (Edirisingha, 2012). In disability studies, positivism is associated with the medical model of disability, and positivists focus on the impairment of an individual due to the model's ontological assumptions (Abdullah, 2013). Arguably, this could increase oppression towards disabled people because it positions them as research objects (Turmusani, 2004). Hence, this thesis argues that positivism is not helpful in bringing change for positive policy outcomes for disabled people (Oliver, 1997) as it does not consider disabled people's personal views and experiences in facing everyday life as part of society.

In contrast, interpretivist epistemology considers that researchers must understand the meanings that represent the particular social action through interpretation (Schwandt, 2000), by understanding the way in which the world is understood by individuals (Tobi, 2014). Interpretivists share the view with social constructivists that individuals look for understanding of the world they live and work in (Creswell, 2014). Hence, research relies on the participants' views of the situation studied with more open-ended questions and addresses the process of interaction among individuals (*ibid.*).

This research focuses on the participants' views and experience of the situation being studied. It employs interpretivist epistemology with social constructivism as its ontological position (social constructivist interpretivist stance) and links to a transformative approach (Creswell, 2014) to research. I have scrutinised the complexity of the participants' views to investigate and understand how and why things happen, in order to provide recommendations to various stakeholders on how to improve physical access to enable disabled people's inclusion. Since this research seeks to understand issues through gaining insights into the lived experiences of disabled people in accessing the city centre, the characteristics of the philosophy discussed are considered as an appropriate choice in undertaking this project. The complexity of the participants' views was scrutinised in order to investigate and understand how and why things happen.

# 3.2 Research approach

A qualitative approach was employed in this research in order to obtain richer data. Qualitative data is also known as soft data (Neuman, 2003). It is often in the form of impressions, words and images (for example) that cannot be represented by numbers. In this research, this approach involved an intensive experience between me and the participants in a natural setting 'for exploring and understanding the meaning individuals ascribe to a social or human problem' (Creswell 2014, p.4). It is useful for describing and answering questions about participants and contexts (Singh *et al.*, 2009). Furthermore, the qualitative approach can answer questions and issues that cannot be addressed by quantitative methods (*ibid.*). In contrast, the

quantitative methods generally use surveys and statistics (hard data) (Neuman, 2003) that do not offer open-ended questions for the participants to share their personal experience in depth. For instance, analysing situations that had psychoemotional effects on disabled people, such as in experiencing physical barriers in KL city centre, needed in-depth exploration to be interpreted.

One of the disadvantages of qualitative research is that the researcher is open to the danger of information overload (Adams, 2006) since qualitative researchers rely heavily on verbal description. Researchers are the main instrument of data collection, interpretation, and written narrative (Singh *et al.*, 2009). Therefore, data needs to be managed systematically.

## 3.2.1 Case study approach

This research investigates physical accessibility for disabled people's inclusion in KL – a city that has gone through a massive expansion in a country of a low-income to an upper-middle-income as a specific case. It adopts a case study approach with a holistic single case study. A single case study is chosen as it allows for an in-depth understanding of a specific issue, problem, or concern (Creswell, 2013).

The common criticism of a single case study is that it cannot produce generalisable conclusions due to its reliance on a single case. In countering the issue, Flyvbjerg (2006) highlights that generalisation is only one of the ways to acquire knowledge. Though, a purely descriptive, phenomenological case study can be extremely useful, and has frequently led to scientific breakthroughs (*ibid.*). For Tellis (1997), a single case study is relevant as long as it meets the established objectives. In order

to gain an in-depth understanding of an issue under research, the establishment of parameters and the setting of objectives are far more important than a large sample size (Yin, 2003).

In terms of architecture, urban design development and economic growth, KL city center is distinct from other newer cities in Malaysia. As an old city, KL seems to have more challenges in providing physical access to the citizen. However, as the capital city of Malaysia, KL is always an early implementer of any new policies imposed by the government related to accessibility in the built environment (see Chapter 4). Meanwhile, as a transition city in the Global South, KL is arguably facing challenges comparable to those faced by cities of upper-middle-income countries more generally, as they transition to more developed models of development and planning.

A case study is 'an empirical inquiry that investigates a contemporary phenomenon within its real-life context' (Yin, 2003, p.13). Past research revealed that there are issues related to physical access for disabled people in the built environment in KL (see for example in Kamarudin *et al.*, 2014; Hashim *et al.*, 2012). Disability and the built environment however have a dynamic relationship, as disability encompasses both structural and psycho-emotional aspects (Reeve, 2014). This research gave the opportunity for disabled participants as the users of the physical access to express their thoughts and testify from their experience in using the facilities within the real-life context.

A case study also facilitates the exploration of a phenomenon through a variety of lenses (Baxter & Jack, 2008) that can include the perspectives of the case's 'actors'

(Tellis, 1997). This thesis employs multi-perspectival analyses and multiple sources of information by interviewing and observing disabled users and interviewing various other stakeholders to investigate the research topic. Yin (2003) suggests that researchers place boundaries on a case to avoid answering too broad a question. This can be done by bounding a case by time and place, and time and activity (Creswell, 2003; Stake, 1995 cited in Baxter & Jack, 2008).

# 3.2.2 The procedures for primary data collection

The fieldwork for this research took place during four months from the 5<sup>th</sup> of January 2017 to the 5<sup>th</sup> of May 2017. This section elaborates on the methods that were employed for this research: (1) semi-structured interviews with professionals, and (2) go-along interviews with disabled participants. Altogether, there were 59 interview sessions conducted: 39 semi-structured professional interviews and 20 go-along interviews.

## 3.2.2.1 Semi-structured interviews with professionals

#### Sampling and interviewee recruitment

A non-probability sampling with a purposive approach was used for selecting participants. It aimed to cover the main categories of relevant professionals and representatives of disabled people from various related organisations: government bodies, private agencies and non-governmental organisations involved in the facilitation of physical access for disabled people. 39 informants were identified as

the representatives of the population within the boundary of KL Federal Territory administration. There were four categories of interviewees: (1) regulatory bodies, (2) implementers/service providers, (3) collaborators/other stakeholders, and (4) disabled people's representatives. It should be noted that an architect or engineer in KLCH could be designated either as a regulator or implementer, depending on which department they were assigned.

# a) Regulatory bodies

Nine professional interviewees were from the background of planners, architects, building control officers, access officers and administrators. Seven of them were from the Planning Sector of KLCH i.e. the City Planning Department, Infrastructure Planning Department, and Building Control Department. These departments are involved directly with the issuance of the planning permission and the building plan approval (discussed in 4.4.2.1). In addition, interviews were conducted with a representative from the Land Public Transport Commission (SPAD) (responsible for buses, taxis, trains, and public transportation terminals) and a representative from the Ministry of Urban Wellbeing, Housing and Local Government.

## b) Implementers/service providers

Fourteen interviews were conducted with implementers/service providers including (1) architects and engineers from KLCH responsible for the design of KLCH inhouse projects, and (2) professional architects and engineers (the Principal Submitting Person (PSP)) responsible for submitting plans for planning permission and building plan approval, and (3) transport operators. To be a PSP, one must be professionally accredited by a professional body, for example, an architect with Part

III LAM (accredited by the Board of Architect Malaysia) is similar to architects with Part III RIBA in the UK. Meanwhile, KLCH architects/engineers/planners could be anyone passing their Bachelor's degree in the particular field.

Interviews included seven professionals from the implementing departments under the KLCH Project Management Sector i.e. the Project Implementation and Building Maintenance Department, and Civil Engineering and Urban Transportation Department. These departments handle and manage projects undertaken by KLCH. However, it was not possible to interview a representative from the Landscape and Recreational Development Department of the same sector as several interview dates proposed did not match with the availability of the officer.

Apart from interviewing the public institution implementers/service providers in the local authority (KLCH), other implementers/service providers in providing an accessible environment for disabled people were interviewed, i.e. the representatives from the submitting architects (PSP) (five PSP from five different architect firms). A representative from Prasarana – a government-owned public transport operator, and a KLCH planner temporarily seconded to another government agency in an implementer position were also interviewed.

# c) Collaborators/other stakeholders

Nine interviews were also conducted with representatives from the Department of Social Welfare, Department of Standards Malaysia, the Ministry of Women, Family and Community Development, educators, researcher, access audit trainers, and access audit consultant. All have some influence in the development and implementation of access policies for disabled people in KL.

Four of the interviewees held multiple portfolios, e.g. one of the interviewees was an educator cum researcher cum access audit consultant. The interviewees with multiple portfolios were advised of the role that they were being interviewed about. Nonetheless, they tended to answer the interview questions as themselves based on their experience in the multiple roles. However, since all their roles were relevant to this research, they were not stopped from sharing their experiences. Yet, in this thesis, I do not quote their statements other than the particular role agreed since other interviewees from different categories had covered the issues discussed with similar views.

# d) Disabled people's representatives

Seven individuals identified as experts representing the disabled people community from various organisations were interviewed. This group of informants is unique as they have two roles in the data collection. The first role was to supplement the overall perspectives gained from the go-along participants, and the second role was as the professionals involved in promoting physical access for disabled people, representing their organisation. The interviewees were two representatives from the National Council for Persons with Disabilities from different portfolios (i.e. Committee of Universal Design and the Built Environment, and Committee of Transportation), one representative each from the Malaysian Spinal Injuries Association, and the Society of the Orthopaedically Handicapped, two independent disabled activists, and a member of Senate who represents disabled people in parliament. The interviewees also highlighted their organisational role and their personal role in promoting physical access for disabled people's inclusion.

Table 3-1 in the next page summarises the professional interviewee categories, organisations that they represented, their position, and total number interviewed in each category.

Categories	Interviewees	Department/Ministry/Institution	Position	Total	
	RG1	Building Control Department	Architect		
	RG2	Infrastructure Planning	Architect		
		Department	cum		
			planner		
Danulatami	RG3, RG6,	Building Control Department	Building		
Regulatory	RG8		control	9	
bodies	DOLDO O'' BL : D		officer	-	
	RG4, RG9 City Planning Department		Planner		
	RG5 Ministry of Urban Wellbeing,		Engineer		
	RG7	Housing and Local Government G7 Land Public Transport			
	KG/	Commission	Engineer		
	IM1, IM3,	Civil Engineering and Urban	Engineer		
	IM5	Transportation Department	cum		
		Transportation Dopartment	pedestrian		
			designer		
	IM2, IM4	Project Implementation and	Architect		
	,	Building Maintenance Department	cum urban		
			designer		
Implementers	IM6, IM9,	Architect firm	Architect	14	
and service	IM10, IM11,		(PSP)		
providers	IM13		, ,		
	IM7 Project Implementation and		Architect		
		Building Maintenance Department			
	IM8	Prasarana	Transport		
			operator		
	IM12	A government agency	Planner		
	IM14 Civil Engineering and Urban		Urban		
		Transportation Department	transport		
	01.4	D: 4	engineer		
	CL1	Private consultant	Access		
			audit		
	CL 0. CL 7	KLCH	consultant		
Collaborators	CL2, CL7	KLCH	Access		
and other	CL3	Ministry of Women, Family and	audit trainer Officer	9	
stakeholders	CLS	Community Development	Officei	3	
olanonola olo	CL4, CL6	Higher education institutions	Educator		
	CL5	Department of Standards	Standards		
	020	Malaysia	officer		
	CL8	Higher education institution	Researcher		
	CL9	Department of Social Welfare	Officer		
	R1	Parliament Malaysia	Senator		
	R2	Society of the Orthopaedically			
Disabled		Handicapped	tive		
people's	R3, R4	Not representing any institution	Independen		
representatives			t disabled	7	
			activist		
	Disabilities		Representa		
			tive		
	R7	Malaysian Spinal Injuries	Representa		
		Association	tive		
		Total		39	

Table 3-1 Professional interviewees details

# Interview procedures

The interviewees were approached personally through emails or telephone. The purpose of the research was explained to the potential research participants when they were contacted in order to invite them to take part. Out of the 40 professionals contacted, only one person was unable to be interviewed (from the Landscape and Recreational Development Department – the implementer category).

The interviews took place in the interviewee's office except for the interviews with two independent disabled activists which were conducted in their houses. Each interview session took approximately 60-75 minutes. The information sheet was given to the interviewees and consent was obtained from them before the interview started. Then the purpose of the research was re-explained to the interviewee. The interview started with an introductory question (e.g. interviewee's background), followed with the main interview questions, and ended by asking concluding questions (see Appendix 1 for interview schedules - Section A-E). The whole interview session was audio recorded with the interviewee's consent. Yet, since the questions were semi-structured, I had to listen to the answers carefully and get ready with the following question related to the answer if the question was not in the interview schedule. Probes were also used, which Neuman (2003, p.295) defines as 'a neutral request to clarify an ambiguous answer, to complete an incomplete answer, or to obtain a relevant response'. Some of the videos and photographs taken in the fieldwork were shown to the professional interviewees for discussion (issues on transcribing and coding are explained in 3.4).

# 3.2.2.2 Go-along interviews with disabled participants

The go-along interview employed in this research involved me spending time with each participant in KL city centre for a walk-along in the pedestrian environment and a ride-along via the participant's chosen mode of transportation. The purpose was in enabling me as the researcher to experience walking together with the participant in the public realm, riding buses, taxis and trains, and also riding in cars driven by the participants while going to destinations. In addition, the accessibility of buildings was assessed in the go-along journey. It was designed so that the participant was able to share their daily life spatial experience, perception, satisfaction and expectation towards the access facilities provided.

Even though the case study is the KL city centre, the go-along journey started from the participants' residence or any convenient meeting place near their residence in various neighbourhoods in Klang Valley. The purpose of having this meeting place was that it acted as the starting point where data started to be gathered in order to identify the barriers and facilitators experienced by disabled people in accessing the city centre. Hence, it is important to capture the journey from the participant's house or neighbourhood to the city centre.

# Sampling and participant recruitment

Twenty go-along participants were involved in this research. To be eligible, the person had to be an adult and voluntarily willing to participate in the study, requiring them to travel to KL city centre with me and spend some time there. The participant could be either a regular or non-regular city centre visitor and not necessarily from

KL but based around the Klang Valley area (KL and its conurbation – see Figure 4-2). Persons with mobility difficulties (either with or without a walking aid) were chosen as the participants for this research as those disabled people are seen to be more severely impacted by any physical accessibility issues.

Participants for the go-along interviews were recruited by the snowballing technique. This technique is used when the participants are difficult to locate (Singh et al., 2009), as a participant can lead the way to more participants. However, since the participants introduced me to their colleagues, the result was that 95% of the goalong participants were Malays, thus, limiting the data to this majority ethnicity. Klang Valley population is multi-ethnic and hence, an ideal situation would be for data to include other ethnicities according to ratio of the population, for representativeness of the sample. However, this would require a larger sample size and more resources for recruitment, as identifying people with mobility disabilities across the ethnic spectrum is not straightforward. In KL itself, from 1.79 million population, 40.4% of the population are Malays, 36.5% Chinese, 8.4% Indians, 1% others and 13.7% are non-Malaysian citizen (Department of Statistics Malaysia, 2017b). Without more resources, I was limited to working through my own networks. Nonetheless, I acknowledge that the sample ethnicity limitation meant that the findings do not reflect the overall multi-ethnic case study, with diversity of culture and religion.

The first people were approached from my own contact list from past involvement in volunteering work. Participants were approached through telephone conversations in order to obtain their initial agreement to participate in the research

and set the appointment for handing out the participant information sheet and obtaining the consent form before the go-along interview started. These participants were asked if they had contacts who may be willing to participate in the research and who could be contacted for the purpose of participating in this research. The majority of the go-along interview candidates agreed to participate in the research. Two of the candidates contacted declined to participate from the initial stage while another two of the potential participants cancelled their willingness to participate after appointments were made.

The Department of Social Welfare Malaysia (DSWM) recognises a person with mobility difficulties as 'disabled person' if the impairment lasts for at least 12 months. However, this research followed the International Classification of Functioning (ICF) definition of disability that establishes that disability is an umbrella term encompassing impairments, activity limitation, and participation restrictions. Therefore, it was not deemed necessary for the participant to have impairment for at least a year. Nonetheless, it so happened that all the go-along participants were registered as disabled people with the DSWM during the period the fieldwork was undertaken.

Out of the twenty go-along participants with mobility difficulties, ten of them were using manual wheelchairs (participants affected by polio, unidentified spinal cord disorder, spinal cord injury and spina bifida), three used powered wheelchairs (those affected by cerebral palsy and congenital amputation), two used crutches (affected by cerebral palsy and single amputee), one each used a skateboard (polio survivor) and a prosthetic leg (single amputee), and three participants were unaided (affected

by acquired brain injury and clubfoot). Even though I did not specify any criteria regarding the mobility aid or any disability attributes in order to participate in the research, the diversity of different physical mobility limitations gave me more understanding of the participants' needs in accessing the city. Even when the participants' mobility aid and impairment were similar, they had unique abilities, needs, and ways of negotiating with barriers based on their individual biography. However, I acknowledge that the findings from this small sample of people with mobility difficulties do not represent the entire population of disabled people who accessed KL. Other types of disabilities are suggested to be studied in the future.

Table 3-2 on the next page summarises the go-along participants' attributes.

Table 3-2 Go-along participants' attributes

Participant	Sex	Age	Health condition	Impairment	Walking aid
P1	Female	18-27	Spina bifida	Paralysis from waist down	Manual wheelchair
P2	Female	18-27	Clubfoot	Walking difficulties	Unaided
P3	Male	28-37	Spina bifida	Paralysis from waist down	Manual wheelchair
P4	Male	18-27	Polio	Upper and lower limbs weakness	Skateboard
P5	Male	28-37	Spinal cord injury	Paralysis from waist down	Manual wheelchair
P6	Female	18-27	Spinal cord injury	Paralysis from the waist and upper limbs weakness	Manual wheelchair
P7	Male	38-47	Spinal cord injury	Paralysis from waist down	Manual wheelchair
P8	Female	28-37	Spina bifida	Paralysis from waist down	Manual wheelchair
P9	Female	38-47	Acquired brain injury	Walking difficulties	Unaided
P10	Male	28-37	Spinal cord injury	Paralysis from waist down	Manual wheelchair
P11	Male	18-27	Unidentified spinal cord disorder	Paralysis from the waist down and upper limbs weakness	Manual wheelchair
P12	Male	28-37	Spinal cord injury	Paralysis from the waist down and upper limbs weakness	Manual wheelchair
P13	Male	18-27	Polio	Paralysis from waist down	Manual wheelchair
P14	Male	38-47	Cerebral palsy	Paralysis from the waist down and upper limbs weakness	Powered wheelchair
P15	Male	38-47	Congenital amputation	Walking difficulties	Powered wheelchair
P16	Male	18-27	Single amputee	Walking difficulties	Single crutch
P17	Male	28-37	Acquired brain injury	Walking difficulties	Unaided
P18	Male	28-37	Cerebral palsy	Paralysis from the waist down and upper limbs weakness	Powered wheelchair
P19	Male	28-37	Single amputee	Walking difficulties	Prosthetic leg
P20	Female	18-27	Spina bifida	Lower limbs weakness	Crutches

# Setting-up

Participants were invited to choose a few destinations (or a single destination) in the KL city centre of places that they either currently go to, or would like to be able to go to; these could relate to their current and aspirational activity for business, recreation, culture, and administrative necessities. The participants were given a list of categories of places/activities as examples from which they could determine the go-along journey's route and destination as in Table 3-3. However, the list of options of destinations was intended just as guidance for the participants for sparking ideas of destinations to which they would decide to go. They were not required to choose one from each category but were free to decide any places they wanted to go, from on or off the list.

Table 3-3 Options of destinations

Activities	Examples of destination	
Daily	Public transport terminal	
	Employment	
	Supermarket and wet market	
	Healthcare related (pharmacy/clinic/hospital/rehabilitation	
	centre)	
	Bank	
	Institution	
	Restaurant	
	Nursery	
Cultural and	Mosque	
religious	Wedding venue	
	Ritual ceremony venue	
	Community centre	
	Tourist attraction	
Recreational and	Park, playground, green space	
entertainment	Z00	
	Adventurous activity venue	
	Game and sports place	
	Picnic venue	
	Club and pub	
	Movie theatre	
	Karaoke venue	
	Outdoor cafeteria	
Others	Any specific area with physical access issues	

Participants were provided with a lapel microphone for audio recording along the journey. It was vital to have a good recording device with a noise resistant or wind guard microphone since the journey passed by noisy areas such as streets with noisy vehicles in the background.

In the briefing for the go-along interviews, participants were informed about traffic hazards and risks in the journey and also reminded to cross the road using a zebra crossing or any appropriate way with safety precautions. However, a few participants disregarded traffic hazards since they found that the street was the best way to have a smooth journey rather than using pedestrian walkways.

## The journey

Some of the participants led the journey if they wanted to show evidence of barriers (or facilitators) of their past experiences with physical access. There were also participants who determined the destination but did not lead the journey nor determine the route. They decided to explore the journey together with me especially if it was the first time that they attempted to visit any chosen site. Furthermore, many of the participants who decided to explore a new area had thought that the go-along journey was the best time for them to experience new routes and places since they were accompanied.

Data gathered in the go-along interview took place before the journey started, during the journey, including in a sit-down environment, and after the journey was completed. Since the participants were provided with a lapel microphone for audio recording, while taking a break for toileting for example (either myself or the participants), some of the participants continued expressing their views and

experience in the audio recording. Therefore, little data was missed even when I was not standing by the participant.

While conducting the go-along interview, observations of the participant while in contact with the surrounding environment and the case study area were noted in order to evaluate the current physical access provided and countercheck with the participant's responses. This procedure included some videos recorded, and photographs taken to demonstrate evidence, taken with the participant's permission.

The go-along journey conducted for this research usually took around eight hours while some journeys took up to 10 hours, including the initial discussion, consent process and choosing the route. However, the time and duration of the journeys were flexible and depended on the participant's condition as some might need more time for breaks than others. Some participants had multiple impairments that affected their health, which might cause some discomfort while on the move. Therefore, the participants were allowed to finish the go-along interview at any time they felt appropriate. Table 5-1 in Chapter 5 indicates the distance, estimated travel duration to the first destination, the full duration, and methods of mobility in the go-along journey.

# Participant companion

The go-along interview also involved the disabled participant's safety, such as the possibility of the participant falling or becoming impeded by any physical barriers. Hence, precautions were taken. It was decided through telephone discussion with the participant at the time of arranging the interview whether they preferred to be escorted in the journey.

Out of the twenty go-along journeys, eleven sessions were accompanied. Five of the participants brought their own companion. Four of the participants asked if I could bring a male assistant as they felt that I might not have the capacity to assist them in overcoming physical barriers especially when they needed to be transferred from the wheelchair or needed to be assisted in going up or down a kerb. My fieldwork assistants were drawn from my contacts with volunteers in the social work field who were familiar in walking with a person with mobility difficulties.

Nine journeys were only me and the participants, where seven of them had mentioned earlier that they can access the city independently while two of them needed my assistance; one to push the wheelchair and another one needed assistance in climbing steps. However, I myself felt the difficulties to assist the wheelchair user while reaching our destination. We had the experience of not being able to continue the journey while facing an obstruction and only managed to continue our journey with the help of a passer-by. Therefore, for the two last journeys with wheelchair users, I purposely asked for a research assistant to accompany us with the participant's consent. None of the participant's companions or my fieldwork assistants contributed any perspectives to the interviews.

#### Compensation

Each of the go-along participants received cash of RM70 (approximately GBP14) per person as compensation for their time and effort in being interviewed. The cost of living in KL is relatively high so this amount is not large in that context, considering several hours of time spent. It is acknowledged however that it is unusual to give cash for ethics reasons. However, since there was no assurance that most shopping

areas are accessible to disabled people, it was preferred that cash be given rather than vouchers that can only be used in certain shopping malls. I also covered the meals and transportation expenses for the participants and their companion (if any) during the journey to and from KL city centre. The compensation was given after each session of the go-along interviews. Upon receiving the compensation, the participants were required to sign a receipt.

#### 3.2.3 Ethical considerations

Most qualitative researchers address the importance of ethical considerations with the obligation 'to respect the rights, needs, values, and desires of the informant(s)' (Creswell 2014, p.208). This research received full ethical clearance from the University of Birmingham's Ethical Review committee. Consent was obtained from all go-along interview participants and the professional interviewees. All research participants were provided with a participant information sheet (see Appendix 2 for different set of the sheets) and asked to complete a consent form (see Appendix 3). It was made clear that participation was voluntary, and they could withdraw and ask for all or part of their data to be withdrawn for up to three months.

In addition to this, the purpose of the research was explained orally to research participants at the beginning of the project, and any questions from the participants were discussed. Instead of the participant's real names, generic identifiers were used in writing, so that participants cannot be identified from the data. Photographs have been used in the write-up with all faces pixelated to maintain the anonymity of those captured. Yet, the majority of the go-along participants verbally declared that

they do not mind if their identity was exposed. As a Malaysian, I noticed that there is little concern about anonymity. In fact, a few of the participants wanted me to disseminate (or as Malaysians popularly call it to 'viral') their photographs while facing physical barriers in our journey to KL city centre as they believed that 'viral' issues will get a faster response from the responsible bodies.

#### 3.3 Data collection methods

Data used for this research were both secondary data and primary data.

# 3.3.1 Secondary data

Documents as a form of secondary data include public documents and private documents (Creswell, 2014). The main documents used for this study were the Malaysian Standards related to accessibility in the built environment, related acts, design guidelines and policies for Kuala Lumpur City Hall (KLCH) development, and plans submitted to the Building Department of KLCH for building plan approval. These documents were collected and compiled for the purpose of understanding the legislative context (see 4.4.2 on policies and regulations for OKU access in KL for example). Some of the documents were available online (e.g. the Person with Disabilities Act 2008), some were loaned from KLCH (e.g. Urban Design Guidelines for Kuala Lumpur City Centre), and some were bought (e.g. Malaysian Standard 1184:2014 Universal Design and Accessibility in the Built Environment). In addition, there were also private documents referred to, such as the building plans submitted

to KLCH for applying for approval. The private and confidential documents can only be viewed in KLCH office with the officer's presence.

# 3.3.2 Primary data

For the primary data collection, the research adopted a combination of qualitative semi-structured interviews and go-along interview methods. Both methods involved in-depth interviews that were intended to elicit views and opinions from the participants (Creswell, 2014). The purpose of conducting semi-structured interviews with professional informants was to obtain specific accurate information (Neuman, 2003) and gain a deep understanding of the state of physical access for disabled people and their inclusion from the providers' point of view (i.e. the regulators and implementers). The providers also include parties with indirect involvement with the physical access provided (e.g. educators and researchers as part of the collaborators category).

Meanwhile, a go-along interview is a type of a walking interview usually used in ethnography research. A walking interview is where the researcher walks alongside the participant while the interview is conducted in a given location (Zahari *et al.*, 2018). Evans and Jones (2011, p.849) argue that 'walking interviews generate richer data because interviewees are prompted by meanings and connections to the surrounding environment and are less likely to try and give the 'right' answer'. According to Kusenbach (2003, p.455), the go-along interview method has the potential 'to access some of the transcendent and reflexive aspects of lived

experience in situ'. Data gathered in the go-along interview method was a hybrid between participant observation and conversation (ibid.).

Learning 'with' disabled participants is different from learning through research that is 'about' disabled people's experiences (Sawadsri, 2010). Experiences of disabled people can be learnt and known through listening to their voices directly (Wakiya, 2011). Sharing activities with disabled people could bring a closer involvement with the participant's experience (Sawadsri, 2010). The go-along interview was where I took the opportunity to learn 'with' disabled participants.

# 3.4 Data analysis

Data collected within the four months of fieldwork were analysed independently and then combined following the four steps of analysis by transcribing, coding, developing themes and writing the narrative (Creswell, 2007).

# 3.4.1 Transcribing and translating

Transcribing an interview requires the transcriber to study the interview by listening to the audio carefully. Ideas and concepts emerging during the lengthy and in-depth process helped to build and create a more profound analysis than if the audio had been transcribed by someone else (Adams, 2006). Even though the transcribing process was time-consuming, it presents the opportunity to use the data in a physical dimension as it could be printed as a hard copy, that is tangible and easier to refer to for analysing.

Altogether, there were 59 interviews transcribed for this research; 39 professional interviews and 20 go-along interviews. I purposely transcribed all the 20 go-along interviews since each interview duration was lengthy and some of the conversations were not that clear for others to listen to. However, since I was directly involved with the conversations, I managed to capture them correctly. All go-along interviews were conducted in Malay and transcribed verbatim. Only quotations to be inserted in the thesis were translated into English at a later stage. However, the translation needs to be done carefully since it is an interpretive act and the validity may also be questioned (Squires, 2009; Van Nes *et al.*, 2010). It is conceivable that concepts from one language could be understood differently in another language resulted in changing the original meaning (Squires, 2009). Fortunately, I am a Malay native speaker and had lived in the UK for several years. Hence, I have a strong command of the academic and idiomatic English as well. However, it should be noted that there is no single correct translation of a language (Temple & Young, 2004) and I acknowledge that a perfect correspondence is hard to achieve.

As the go-along journey was informal, some participants tended to have a chat and asked questions unrelated to this research. For example, they asked about my hometown and my experience living with family in the UK while we were taking a break. However, there were also participants that asked about access facilities in the UK to confirm to what they had heard. Although these conversations were recorded, they were not transcribed.

Meanwhile, for the professional interviews, half of the transcribing work was done by a professional transcriber. I was not worried about giving the work to the transcriber; all the audio recordings were clear since the professional interviews were conducted indoors. However, I still verified all the transcripts against each audio to ensure the accuracy of the information. Since the professional interview responses were in mixed languages (Malay and English), a Malaysian professional transcriber was hired to transcribe verbatim. It is usual for Malaysians to speak mixed languages, especially those with tertiary education. Hence, in quoting them in the empirical chapters, some of the quotations were inserted verbatim while some were translated into English. While transcribing myself (and verifying the transcriber's transcripts), the ideas that emerged for writing the narrative were jotted down.

# 3.4.2 Coding and developing themes

Qualitative research generates large data sets that must be managed. Computer software was helpful in taking over the task of managing data through the coding process, which is the main phase in the whole process of qualitative data analysis (Bryman, 2008). ATLAS.ti, a qualitative data analysis software was used to code the data quickly and systematically. Otherwise, the coding process would have been difficult to do through note cards and word processing (see Appendix 4 for the coding frame).

The recorded videos and photographs were not involved in the coding process. However, some of those were shown to a few professional interviewees to get comments and further clarification on the issues discussed. Data related to these discussed visuals were voice recorded, transcribed and coded. Only one video was

shown to the interviewee IM12 (implementer, KLCH planner seconded to another government agency) regarding an OKU gate that turned out to be a barrier to P18 (male, powered wheelchair user) while maneuvering his mobility aid (discussed in 7.2.2). Images were selected purposively, to show a selection of physical barriers faced by the go-along participants (see Appendix 6).

The first stage of the hermeneutical keyword coding could be done just after the interview transcript was imported. The coding was in English on Malay (and mixed English-Malay) transcripts. It was not an issue for me to code in English as I can work easily in both languages. The transcripts were not translated into English, due to the risk that the context could be lost in the translation process (Squires, 2009; Van Nes *et al.*, 2010). It is recommended that to avoid shortcomings in research, the original language is to be retained as long and as much as possible (Van Nes *et al.*, 2010). However, as mentioned earlier, selected quotations to be inserted in the thesis were translated into English, so that the target readers would understand what was meant.

I did the coding one transcript at a time by a combination of emerging and predetermined codes. The predetermined codes were developed separately for the professional interviews and the go-along interviews. These predetermined codes were selected deductively based on literature reviewed, with the expectation to get several numbers of inductive codes. However, more inductive codes were produced, especially related to the go-along participants' emotions, either verbally told or visually expressed when they encountered physical (and attitudinal) barriers and sharing their experiences. The relative balance of the inductive codes is about

half of the overall codes where the majority of predetermined codes found to associate with the participants' emotions as well (e.g. feeling frustrated, discriminated, angry, unsafe, unfair etc.)

Next, similar data were categorised together after examining and re-examining the coded data that led to the creation of the themes. I found that the ATLAS.ti query tool was very helpful as I could easily organise, sort, and search for information and get the query report of the coded data from different stakeholders, for example from the 'providers' group and the 'users' group.

Within the study, three embedded units of analysis emerged; on transportation, buildings/architectural design, and the street level environment that affect the ability of disabled people to access KL city centre. These three physical aspects were significant to interrogate since one would face barriers or facilitators while experiencing these three aspects along the journey to the city centre.

# 3.5 Positionality and reflections

At the point that this thesis is produced, I am on my study leave from my job as a lecturer at the Universiti Teknologi MARA, Malaysia (MARA University of Technology). While joining academia, the Kuala Lumpur City Hall (KLCH) once invited me as a moderator for a dialogue session between the KL Mayor and disabled people. KLCH also called for my inputs as an academic in their programmes related to accessibility and disability. Just before pursuing my PhD studies, I was also invited by a research group from another university in KL to be a moderator for a focus group conducted among disabled people with different

impairments regarding the accessibility of a neighbourhood. Therefore, due to this experience, contacts and rapport building were easier in terms of getting cooperation for data collection and in the process of participant recruitment, especially for professional interviews.

It needs to be acknowledged that, before joining academic career, I was attached to KLCH for eight years (from 2001 to 2009) as an assistant architect in the Urban Design and Heritage Unit which involved checking plans for building plan submission for approval and building inspection for the recommendation of Certificate of Fitness for Occupation prior to joining academia. Most of the professional interviewees I was not meeting for the first time; only nine out of the 39 professional interviewees were new to me. The other 30 interviewees I had met before either while I was working in KLCH, or while in academia in Malaysia where the relationships were professionally built from my formal position in both industries. This opened the opportunity for me to contact and recruit professional interview informants easily. However, I still needed to get permission from the Corporate Unit of each government's office to conduct interviews with their staff.

Personally, I was actively involved in volunteering work related to disability in KL prior to undertaking this doctoral research. I did the volunteering work as my hobby. Generally, most of the volunteering work was with the visually impaired community where I recorded my voice for the 'talking books' for the Malaysian Association for the Blind, located in KL.

For the go-along participants, the only person I knew prior to this research was the first person I contacted as my potential participant. He is a wheelchair user who I

got to know in the KLCH programme on disability awareness I participated in while in academia. The further 19 participants were met through the snowballing technique and the go-along session undertaken was our first meeting. These 19 go-along participants know me as a researcher from a university in the UK, without knowing that I was previously working with KLCH and attached to Malaysian academia while the fieldwork was undertaken. They apparently easily expressed themselves and complained openly about accessibility issues in KL city centre.

As a woman conducting this research, some of the participants purposely asked me to bring a male companion to assist them in the journey if needed (as explained in the go-along method procedure). In many ways, I would appreciate if all of the journeys were accompanied (either by the participant's companion or by my fieldwork assistant) as this arrangement really made our journey easier. Journeys were too tiring for me and the participant without a companion. Yet, I noticed that I learned more about disability and accessibility when there was no assistant present, but only me and the participant.

Ultimately, the go-along interview method can do more than merely gather data for this research. Based on my experience in the go-along interview, I believe that learning 'with' disabled participants is more effective in understanding the disability-environment context compared to learning through research that is 'about' disabled people's experiences or by only conducting traditional interviews with them. There were so many precious experiences that I would not be able to achieve through reading or listening, but I gathered through the go-along journey. As a researcher conducting this method, I not only observed the participant but was involved with

empathy in what the participant experienced in the journey as I was directly faced the challenges with them, especially when we could not find any help from others (or help was offered late). Hence, other knowledge was also gained while conducting this method that could also contribute to an inclusive environment. For instance, on disabled people's emotions (and the caretaker or companion as well) within human-environment interactions. Besides gaining data for the purpose of this research topic on physical access, I observed social behaviour while in contact with disabled people. I witnessed the negative attitude among the wider public while interacting with disabled people or not interacting with them despite their presence. In addition, I gained soft skills such as on teamwork, communication, and adaptability, to name a few.

After the fieldwork finished, my relationship with the go-along participants continues and they seem attached to me. However, this does not mean that my research is biased to them. In order to have an understanding of physical accessibility in KL city centre that affects the inclusion of disabled people, I considered other data collected from various stakeholders' perspectives are also important. Eventually, I could see that the participants show their interest in my research as this research is directly related to their life and their future. Some participants were eager to 'check' on my research progress as they hope the findings could be forwarded to the responsible bodies related in providing physical access. Meanwhile, some of them contacted me just to ask if we can go for another go-along journey. I was also contacted by one of the disabled people's representatives (one of the professional interviewees) who invited me to join their organisation to advocate on behalf of people with spinal cord injuries. In addition, an interviewee from KLCH also contacted me to ask if I could

table the research findings to them. This indicates that this research is valued by both the stakeholders either from the 'provider' and 'user' side. Looking into how this research could contribute to disabled people's inclusion and how the participants hope that it could change the landscape of accessibility has motivated me to complete my PhD soonest.

# 3.6 Summary and conclusion of the research methodology

This chapter has provided definitions and justification of the various techniques and approaches in conducting this research. A qualitative research design with a case study approach was adopted. The interpretivist epistemology with social constructivism ontology and transformative worldview were followed to guide the research. The primary data were collected through the go-along interview with disabled participants, recruited through the snowball technique. Meanwhile, qualitative semi-structured interviews involved regulators. implementers. collaborators, and representatives of disabled people. A non-probability sampling with a purposive approach was used to recruit the interviewees. Ethical issues were considered while undertaking this research that investigated disabled people's life. The data collected were then analysed by transcribing, coding, developing themes and finally writing the thesis.

In conducting this research, I also faced some challenges especially in employing the go-along methods as part of the primary data collection. However, I can say that this method is the 'heart' of my research methodology where I learned a lot about the relationship between access and disabled people's inclusion; the importance of

having access for them and how 'disabled' they were in an inaccessible environment. This method has exposed me to the lived experience of disabled people in accessing the city centre, in a way that I could not 'learn' this much elsewhere.

Before we go further on this thesis's findings and analysis, the next chapter details the various policies, regulations, and legislation related to disabled people's access in the Malaysia and KL context.

#### **CHAPTER 4**

# DISABILITY AND ACCESSIBILITY IN MALAYSIA AND KUALA LUMPUR CONTEXT

This chapter aims to contextualised disability and accessibility in Kuala Lumpur (KL) as the chosen case study. There is a need to understand Malaysian national policies first since KL is Malaysia's capital city where most of the national policies and standards formulated are first adopted by KL, followed by other states. For instance, KL was the first local authority in Malaysia to implement Malaysian Standard 1184:2014 (Universal Design and Accessibility in the Built Environment) (further discussed in 4.4.2.1) as part of Kuala Lumpur City Hall (KLCH) building control mechanisms. An understanding of specific policies and regulations for access of disabled people or *orang kurang upaya* (OKU in Malay) is thus provided here.

As such, this chapter is divided into four sections: (1) the country profiles, (2) the evolution of social inclusion in Malaysian urban development policies, (3) disability services and key policies related to OKU's wellbeing in Malaysia, and (4) KL access policies relating to the built environment and transportation.

# 4.1 The country profiles

Malaysia is located in South East Asia, with Thailand in the North, Singapore in the South and Indonesia in the East and the West. Divided into Peninsular Malaysia and East Malaysia, the country comprises 13 states and three federal territories (Kuala

Lumpur, Putrajaya and Labuan). Each of the states is either governed by a Governor (appointed by the King), a *Raja* or a *Sultan* (who are hereditary royal rulers in nine states), while the King rules the Federal Territories. The Ruler Conference elects *Raja* and *Sultan* to sit on the national throne as a King for five years (Majlis Raja-raja, 2010). The differences between a Governor and a *Raja* or a *Sultan* has origins in British colonialism.

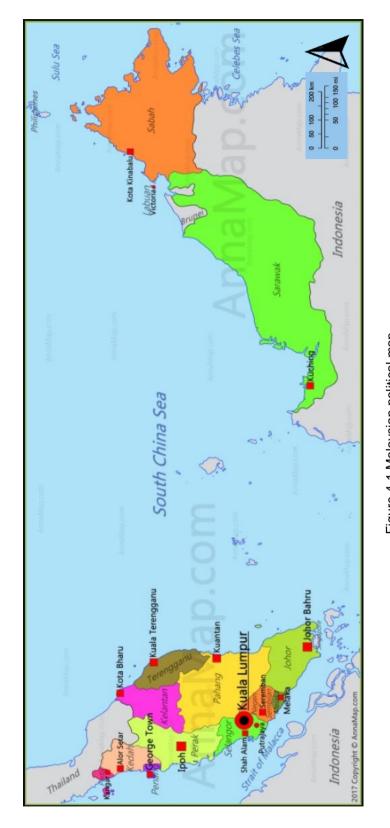


Figure 4-1 Malaysian political map Source: AnnaMap (2018)

Malaysia gained independence from Britain in 1957 (it was then the Federation of Malaya). Its structure plan and local plan system as embodied in the Town and Country Planning Act of 1976 is an adaptation from the structured system introduced in England (Rani, 2012). Malaysia's government structure is divided into three levels: (1) the federal government, (2) state governments (the 13 states), and (3) local governments. Hence, various ministries, departments, and agencies share the responsibility for implementing policy at different levels (Abidin, 2016).

Malaysia is a multi-religious country with the majority of its population (approx. 60%) practising Islam with other religions including Buddhism, Christianity and Hinduism also practised by the people. Hence, the Muslims' religious buildings can be found throughout Malaysian cities and residential areas (further explained in 4.4.2.1).

In 2017, Malaysia's estimated population was 32 million, with 28.7 million Malaysian citizens and 3.3 million non-citizens (Department of Statistics Malaysia, 2017a). Malaysia is a multi-ethnic country with an estimated population percentage of Malays and Bumiputera (or 'son-of-the-soil') of 68.8%, Chinese 23.2%, Indian 7% and others 1% (*ibid.*). In comparison to the Global North, this multi-ethnic country with a multi-cultural and multi-religious society has different influences on its policymaking.

The multi-ethnic and multi-religious society in Malaysia is a result of the colonial period (Amin *et al.*, 2020) when Chinese and Indians migrants arrived during the colonial period to work in tin minings (Chinese miners) and rubber estates (Indians workers). The cities and major towns of Peninsular Malaysia were also established

during the colonial and post-colonial times and are primarily scattered over the tin and rubber belts on the western side of the peninsula.

In terms of economy, Malaysia was previously considered a low-income country since its independence, but since 1992 is regarded as an upper-middle-income country (Economic Planning Unit, 2015a; Amin et al., 2020). As of 2020, Malaysia is a developing country and in the Development Assistance Committee (DAC) list of official development assistance (ODA) recipients under the Organisation for Economic Co-operation and Development (OECD) (OECD, no date). Malaysia has been transforming its economic model from agriculture-based in the 1970s into diversified (Aziz & Azmi 2017) and third wealthiest nation in South East Asia after Singapore and Brunei (Salikha, 2016). Malaysia's national per capita income expanded from US\$402 in 1970 to US\$10,796 in 2014 (Economic Planning Unit 2015). The mean household monthly income increased more than 20-fold from 1970 to RM6141 (approximately GBP1117) in 2014 (*ibid.*). The Malaysia Economic Planning Unit (2015) projected that the country would be on track to surpass the US\$15,000 threshold of a high-income economy by 2020 if the GDP growth continued at 5-6% per annum as predicted. However, at the end of 2019, the Prime Minister announced that this target was not achieved. Nonetheless, the government has been implementing various policies (discussed in the next section) with the aim to be a developed nation by 2020.

# The Federal Territory of Kuala Lumpur

KL is the national capital of Malaysia and was the federal administrative centre before relocated to Putrajaya in 1999. However, KL remains Malaysia's capital city since it was made the Federated Malay States' capital during British rule. KL became the capital of the independent Federation of Malaya in 1957 and of Malaysia in 1963 (with the inclusion of Sabah and Sarawak: East Malaysia). KL was previously part of Selangor state and in 1974 KL was removed from the jurisdiction of Selangor to form Malaysia's capital under the Federal Government as a Federal Territory (Gullick, 1994).

KL is located at the junction of two rivers and gained its name from the location: *Kuala* is a Malay word for junction or estuary, while *Lumpur* means mud or muddy (*ibid.*). KL was originally a small village that turned into a Chinese mining town. After a massive fire in 1881, Frank Swettenham, the British Resident of Selangor, required that the traditional attap (thatch) and wooden buildings to be replaced with bricks and tiles as a precaution against fire. These early permanent buildings are mixed with British colonial buildings with some vernacular and Islamic influences to form KL architecture (Rani, 2012).

Figure 4-2 on the next page shows KL Federal Territory in the middle, surrounded by its conurbation (Klang Valley area) which includes the Federal Territory of Putrajaya (Sepang District), Selangor District of Petaling, Selangor District of Klang, Selangor District of Gombak, and Selangor District of Hulu Langat.

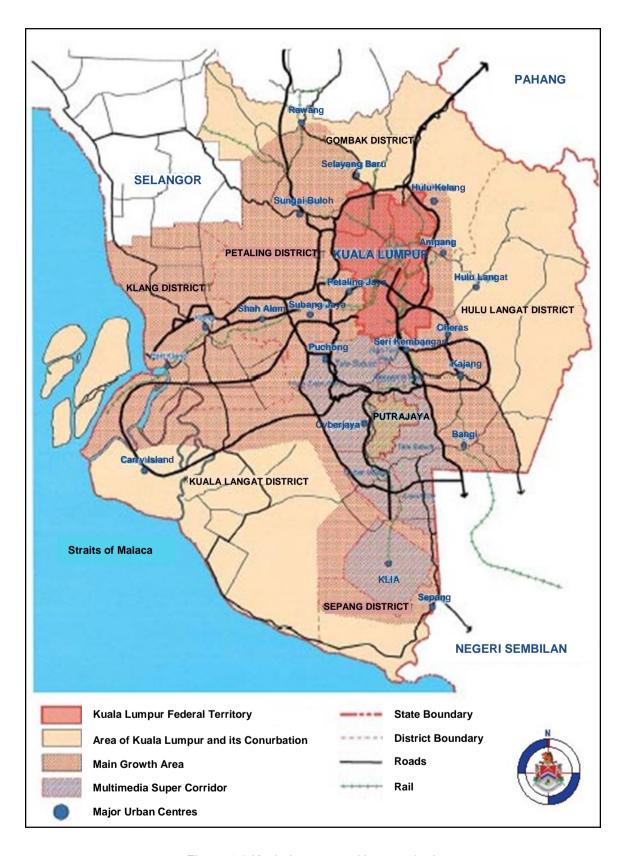


Figure 4-2 Kuala Lumpur and its conurbation

Source: DBKL 2014

KL has the largest urban region and is among the fastest growing economies of the country (Abidin, 2016). KL is also the international commercial and financial centre (Rani, 2012). Based on the projection of the Malaysian decennial census in 2010, the estimated population of KL in 2018 was approximately 1.8 million, with the highest density among the states in Malaysia (Department of Statistics Malaysia, 2017).

From the 1990s onwards, the city has expanded very quickly. Many new post-modern architect-designed buildings were built in the city centre with the ambition of positioning KL as an international and aspiring world city (Abidin, 2016). The Kuala Lumpur City Centre (KLCC) project - a city within a city development, included the Petronas Twin Towers, the world's tallest building in 1998. KL aspires to a world-class city governance, working environment, living environment, and business environment (*ibid.*) by the year 2020. This international ambition has moved KL city centre to be a very international environment that is not very typical of the rest of Malaysian cities. However, as a city in the Global South, KL's ambition to become a global city is hampered by financial constraints.

In terms of accessibility, as discussed in Chapter 2, KL city centre faces issues related to physical barriers in the built environment (see Kamarudin *et al.*, 2014; Kadir & Jamaludin, 2012; Hashim *et al.*, 2012; Soltani *et al.*, 2012; Rahim *et al.*, 2010). Past researches have been looking at (in)accessibility of buildings and public spaces by using accessibility checklists, similar to access audit focusing on the ease of access (access audit is further elaborated in 4.4.2.3). Yet, no attention has been paid to OKU's lived experience in negotiating barriers in accessing the city centre,

and the reasons for the lack of implementation of policies related to the accessibility for OKU inclusion in this transition city.

# 4.2 The evolution of social inclusion in Malaysian urban development policies

Various policies, plans and programmes have been introduced throughout Malaysia's development since its formation in 1963 (with the inclusion of Sabah and Sarawak in East Malaysia). A five-yearly development plan to achieve the long-term national plan for Malaysia started in 1963 and still continues. This section will present significant policies that show the evolution of social inclusion in Malaysian national development.

#### 4.2.1 The New Economic Plan

The first long-term national plan, the New Economic Plan (1970–1990), had the objectives of fighting poverty and eliminating economic disparities among various ethnic groups within the geographical area of Malaysia. Although not specifically mentioning inclusion, it is mentioned here to show the evolution of inclusion considerations in Malaysian long-term policies.

#### 4.2.2 Vision 2020

The next long-term strategy was Vision 2020 (1991–2020) with the aim to modernise and develop Malaysia economically, politically, socially, spiritually, psychologically

and culturally towards becoming a developed nation by 2020 (Abidin, 2016). One of the nine challenges of Vision 2020 is establishing a caring society and a caring culture in the social system (Mohamed, 1991). The five-yearly development plans (the current is the Eleventh Malaysian Plan at the time of writing in 2020) continue to monitor and establish an efficient, equitable and sustainable national framework towards achieving the goal of a developed nation. Vision 2020 does not explicitly mention or plan for OKU per se, but the Malaysian development plan does.

## 4.2.3 The Eleventh Malaysian Plan

The Eleventh Malaysian Plan (2016–2020) with the theme of 'anchoring growth on people' is the final five-year Malaysian plan towards realising Vision 2020 and it comes with Six Strategic Thrusts. The first Strategic Thrust is 'enhancing inclusiveness towards an equitable society' (Economic Planning Unit 2015b, p.23). This Strategic Thrust aims to be achieved by empowering communities, including OKU, for a productive and prosperous society (Economic Planning Unit, 2015a). One way of achieving this aim is by strengthening the enforcement of the Uniform Building By-Laws for universal access 'to ensure compliance to universal design and creating a disabled-friendly physical environment' (Economic Planning Unit 2015a, p.3–27). The Economic Planning Unit (2015b, p.23) refers to 'empowering persons with disabilities' as one of the six target segments in empowering communities as shown in Figure 4-3 in the Eleventh Malaysian Plan Executive Summary.



Figure 4-3 Strategic Thrust 1: Enhancing inclusiveness towards an equitable society

Source: Economic Planning Unit (2015b)

#### 4.2.4 Economic Transformation Plan

The Economic Transformation Plan (ETP) (2010–2020) aims to boost the Malaysian economy towards becoming a high-income developed nation at the end of the plan duration. The ETP consists of twelve National Key Economic Areas (NKEA) that comprise Entry Points Projects (EPP), and the six Strategic Reforms Initiatives

which enable policy reforms to ensure competitiveness in the global arena. One of the NKEAs is the Greater KL/Klang Valley project that includes creating a comprehensive pedestrian network and upgrading identified urban areas in KL.

#### 4.2.5 Government Transformation Programme

Additional to the development and economic plans and programmes, the Government Transformation Programme (GTP) was introduced in April 2009 by the 6<sup>th</sup> Prime Minister. The objectives of the GTP are, first, to transform the government to be more effective in its delivery of services and accountable for outcomes that matter most to the citizen; and second, to move Malaysia forward to become an advanced, united, and just society with high standards of living for all. This is in line with the aim of Vision 2020 – for Malaysia to become a fully developed nation. The six National Key Result Areas identified as a driving force in the GTP are: reducing crime; fighting corruption; improving student outcomes; raising living standards of low-income households; improving rural basic infrastructure; and improving urban public transport (Economic Planning Unit, 2015b).

The various national policies implemented during Malaysia's development are summarised in Table 4-1 with remarks on their provision for the inclusion of OKU. Based on Table 4-1, it appears that there is positive progress made towards inclusion and forming an equitable society. For example, in the early years of the Malaysian development plan (1970–1990), the policy was to eradicate poverty and eliminate economic disparities between the ethnic groups, but it did not touch on social inclusion. However, from 1991 onwards, the policies started to enhance social

and equity measures to achieve inclusivity and a just and equitable society. Table 4-1 summarises the plans and policies from 1970 to 2020. Specific policies regarding disability in Malaysia are presented in the next section.

Table 4-1 Summary of plans and policies on Malaysia development

Period	National policy	Description	Relation to OKU's inclusion
1970– 1990	The New Economic Plan	Objectives: i) poverty eradication ii) eliminate economic disparities between the various ethnic groups and geographical areas.	This first Malaysian long-term plan did not touch on inclusion or disability issues in society.
1991– 2020	Vision 2020	The aim – to modernise and develop Malaysia economically, politically, socially, spiritually, psychologically and culturally.  Five-yearly Malaysian development plans to monitor and establish an efficient, equitable and sustainable national framework towards becoming a developed nation by 2020.	The policy starts to include social and equity measures which could consider OKU in the development. However, OKU are not mentioned explicitly.
2009	Government Transformational Programme (GTP)	To transform the government to be more effective in delivering services and accountable for outcomes that matter most to the citizen.  To move Malaysia forward to become an advanced, united, and just society with high living standards for all.	Improving urban public transport is one of the National Key Result Areas that could promote OKU's inclusion in urban areas.
2010– 2020	Economic Transformation Programme (ETP)	The policy aims to push Malaysia towards becoming a high-income developed nation by 2020.  The ETP consists of two parts: i) the twelve National Key Economic Areas (NKEA) that comprise Entry Points Projects (EPP) ii) The six Strategic Reforms Initiatives	EPP under NKEA of the Greater KL/Klang Valley could promote accessibility in KL city centre which includes:  EPP8 Creating a comprehensive pedestrian network.
2016– 2020	The Five-Year Malaysian Plan (Eleventh Malaysian Plan)	Based on the theme 'anchoring growth on people'.  The final Malaysia plan towards realising Vision 2020 with Six Strategic Thrusts (STs).  ST1 Enhancing inclusiveness towards an equitable society	Could be achieved by empowering communities including OKU for a productive and prosperous society.

Source: Adapted from Abidin (2016)

# 4.3 Disability services and key policies related to OKU's wellbeing in Malaysia

As of 2017, there are 453,258 OKU in Malaysia registered with the Department of Social Welfare Malaysia (DSWM) (Department of Statistics Malaysia, 2018), about 1.41% of Malaysia population. The majority of OKU in Malaysian cities come from rural areas but migrated due to multiple factors, i.e. accessibility, education and training, employment and marriage (Amin & Manap, 2015). Nonetheless, there are still challenges in cities, especially on the physical accessibility and transportation that are also not OKU-friendly, as discussed in Chapter 2.

Together with other governments in the Asian and Pacific region, Malaysia adopted the Biwako Millennium Framework (BMF) to foster an inclusive, barrier-free and rights-based society for disabled people in October 2002 (Abdullah, 2013). Access to the built environment and public transportation is one of the BMF areas of interest where efforts are directed towards including disability concerns in national policies and programmes regarding disabled people's access (*ibid.*). Malaysia has also made a commitment under the United Nations Convention on the Rights of People with Disabilities (UNCRPD) in 2008 and agreed to adopt and enact laws so that OKU would have equal rights in society. Malaysia's ratification of the UNCRPD in 2010 has strengthened the country's standing in ensuring that the access needs of OKU to the built environment and other necessities of life are envisaged in developing the country's policies (Omar *et al.*, 2011).

This section presents the overview of disability in the Malaysian context that includes (1) disability services and welfare, and (2) key policies and regulations concerning disability and inclusion. The information in this section is generally applicable to KL as well, but policies related to KL specifically will be further described in the next section.

## 4.3.1 Disability services and welfare

As a post-colonial developing country, Malaysia has experienced substantial improvements and transformations in disability welfare (Amin & Manap, 2015). Since the 1940s, most support services in Malaysia have been influenced by the medical model of disability and a charitable approach, such as the rehabilitation service and institutional care offered by both government and non-government organisations (Abdullah, 2013). Since the post-independence period, OKU gradually enjoyed better opportunities in terms of access to basic social needs and services (Amin *et al.*, 2020). The idea of the social model of disability can be seen to have had some impact later in the 1980s, with the emergence of better awareness of disability, by focusing on the physical and social obstacles limiting people living with disabilities (Jayasooria & Ooi, 1994 in Abdullah, 2013).

The Department of Social Welfare Malaysia (DSWM), an agency under the Ministry of Women, Family and Community Development Malaysia (MWFCD) is responsible for the wellbeing and administration of OKU's registration in Malaysia. The DSWM's vision is to function as the leading provider of welfare services in the development and wellbeing of the community with the mission of 'empowering the community in

need towards social wellbeing' (DSWM, 2016b). Other agencies involved in promoting the registration of OKU are the Ministry of Health and Ministry of Education.

There are seven categories of OKU which can be considered for the purpose of registration of OKU by the DSWM as shown in Table 4-2 (DSWM, 2016b).

Table 4-2 Categories of OKU

Categories	Description	
Hearing Disability	Unable to hear clearly in both ears without the use of hearing aid or unable to hear at all, even with the use of hearing aid.	
Visually Disability	Blind in both eyes or blind in one eye or limited vision in both eyes or any other permanent visual impairment.	
Speech Disability	Permanent inability to speak that impairs proper communication and cannot be understood by those who interact with them.	
Physical Disability	Permanent inability of the parts of the body that affect their functions in carrying out basic activities (i.e. self-care, movement and changing the position of the body) such as (a) limb defects (congenital/acquired), including loss of thumb; (b) spinal cord injury [only if there is no return of functions after six months]; (c) stroke [only if there is no return of functions after six months]; (d) traumatic brain injury; (e) dwarf (achondroplasia) that is < 142 cm for male and; < 138 cm for female; (f) cerebral palsy.	
Learning Disabilities	Intellectual capabilities that do not conform with biological age (e.g. Late Global Development, Down's Syndrome, and intellectual disabilities. Also includes conditions affect the learning ability e.g. Autistic Spectrum Disorder, Attention Deficit Hyperactivity Disorder (ADHD) and specific learning difficulties (e.g. dyslexia, dyscalculia and dysgraphia).	
Mental Disability	Severe mental illness that causes an inability to function in persons whether partly or fully in matters related to one's relationship within the community (e.g. Organic Mental Disorder, Schizophrenia, Paranoia, Mood Disorder (depression, bipolar) and Psychotic Disorder and Schizoaffective Disorder such as Persistent Delusional Disorders.	
Multiple Disabilities	Having more than one type of disability.	

Source: Adapted from DSWM (2016)

Figure 4-4 shows the percentage of OKU registration by category of disabilities in Malaysia.

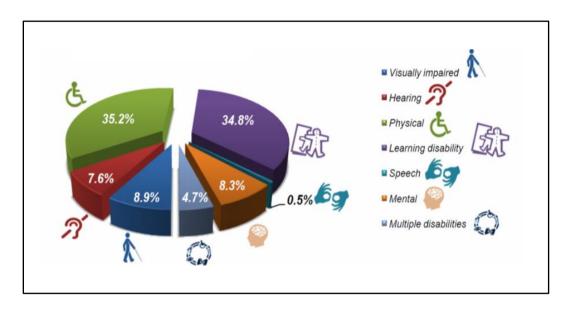


Figure 4-4 Percentage of registration of OKU by category of disabilities in Malaysia, 2017

Source: Department of Statistics Malaysia (2018)

The registration is voluntary. The objective of registration is to update statistics on the number of OKU and types of disabilities for programme planning and provision of services (DSWM, 2016b). For registration eligibility, the person must be a citizen residing Malaysia and the disability condition verified by a registered Medical Officer or Medical Specialist (*ibid.*). In 2011, an Information Management System for Persons with Disabilities (SMOKU) was introduced mainly for the registration of OKU in Malaysia, also for job and training matching for OKU, and for report and statistics purposes (*ibid.*).

After the approval of OKU registration, OKU will receive *Kad OKU* (OKU card) as evidence for their eligibility to claim OKU benefits. OKU are entitled to benefits such as tax rebates, a monthly allowance, education facilities, free treatment in public

hospitals, assistive aids (such as prosthetic aids or support tools), help care if bedridden, and concessionary fares in riding public transportation. In a recent development, the monthly allowance for a disabled worker with income not more than RM1200 (approximately GBP218) increased from RM400 (approximately GBP73) to RM450 (approximately GBP82) to encourage OKU to work and be independent. Unemployed OKU above 16 and unable to work, receive RM300 (GBP60) monthly allowance (DSWM, 2020).

A policy on OKU employment requires every public department to employ at least 1% OKU as their workforce (Jamil & Saidin, 2018). However, as of 2020, only two ministries in Malaysia achieved this target, the MWFCD (1.8%) and the Ministry of Defence (1.3%) (Bernama, 2020). The unemployment rate among OKU is high because they have to face the negative attitude of employers (Amin & Manap, 2015). Besides, buildings and the work place environment tend not to be OKU-friendly and hence, OKU are unable to compete in the job market (*ibid.*). As a result, they have to depend on their families and government to survive. Moreover, OKU need to face the challenge of getting a job that suits their impairment due to the country's unconducive infrastructure (*ibid.*).

There are two workshops (*Daya Workshop*) under the MWFCD reserved for OKU who are not competitive in seeking jobs in the open market. In *Daya Workshop*, OKU are given hands-on skills such as sewing and baking, and get paid on their productions. However, the places are limited. There are two other institutions for OKU under the same ministry - the Industrial Training and Rehabilitation Centre, which offers OKU services through vocational training and medical rehabilitation,

and *Taman Sinar Harapan* - an institution for the care, protection and rehabilitation of OKU with learning disabilities (Mygov, 2019).

Malaysia has an OKU representative in the parliament. The most recent senator appointed in May 2020 is the third representative of OKU since the first appointed in 2007. An OKU representative's appointment as a senator in parliament is the highest government recognition for OKU in the country. Malaysia is the first Southeast Asian country to appoint an OKU representative at this level (Razak, 2007).

The national provisions to overcome issues regarding disability in Malaysia are discussed next.

# 4.3.2 Key policies and regulations concerning disability and inclusion in Malaysia

Malaysia has specific national policies and regulations related to OKU's wellbeing. There are four objectives of the Malaysia National Policy for Persons with Disabilities: (1) to give recognition as well as taking the principle that OKU has rights and equal opportunity for full participation in society, (2) to ensure that OKU possesses the same rights, opportunity and access under national laws, (3) to eliminate disability discrimination, and (4) to educate and increase society's awareness towards OKU's rights (Rahim *et al.*, 2017). This section highlights the respective provisions, policies and legislations.

### 4.3.2.1 The Persons with Disabilities Act 2008 (Act 685)

The Persons with Disabilities Act (Act 658) was introduced in 2008, in the same year Malaysia signed the UNCRPD (Amin *et al.*, 2020). The introduction of this Act provided for the registration, protection, rehabilitation, development and wellbeing of OKU in Malaysia. This Act also provides for the establishment of the National Council for OKU (discussed next).

Part IV of the 2008 Act addresses the promotion and development of the quality of life and wellbeing of OKU. Chapter 1, Part IV of the Act discusses accessibility that includes access to public facilities, amenities, services and buildings (Section 26), and access to public transport facilities (Section 27). Under the terms of the Act, OKU shall have the right to access and use those buildings and facilities provided for the public on an equal basis with the non-disabled. Meanwhile, in facilitating OKU access, universal design is to be conformed to as stated by the Act (for example, in Section 26, subsection (2)).

The Government and the providers of such public facilities, amenities, services and buildings shall give appropriate consideration and take necessary measures to ensure that such public facilities, amenities, services, and buildings and the improvement of the equipment related thereto conform to universal design in order to facilitate their access and the use by persons with disabilities.

(Malaysian Government 2008, p.24)

The 2008 Act recognises that disability results from the interaction between OKU and attitudinal and environmental barriers that hinders their full participation in society. In addition, it recognises:

The importance of accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, in enabling persons with disabilities to fully and effectively participate in society.

(Malaysian Government 2008, p.7)

In addition, this Act recognises the existing and potential contributions made by OKU, and their entitlement to equal opportunity, protection and assistance. The Persons with Disabilities Act 2008 also recognise the co-operation between government and non-governmental organisations as an important element in ensuring the full and effective participation and inclusion of OKU.

#### 4.3.2.2 The National Council for OKU

The National Council for OKU was initiated by the MWFCD in 2008 with DSWM as the secretariat. The National Council for OKU discusses issues related to OKU in terms of implementing national policy and action plans related to disability, and gives recommendations to the federal government on OKU related matters such as rehabilitation, development and wellbeing, and inclusion of OKU in society. There are six committees under the Council: the Committee for Universal Design and the Built Environment; Committee on Transportation; Committee for Quality Life Care;

Committee on Education; Committee for Employment; and Committee for OKU Registration (DSWM, 2016a).

#### 4.3.2.3 Disability Action Plan (2016–2022)

In a recent development, the Disability Action Plan (2016–2022) was launched by the MWFCD in August 2016, based on the Malaysian policy for OKU. The action plan promotes ten core strategies for the development of OKU in Malaysia which includes the improvement of access for OKU (Strategic Thrust 1), and increased OKU participation in planning and decision-making processes (Strategic Thrust 6) (DSWM, 2016b). The two objectives of Strategic Thrust 1 that are related to this research are: (1) to upgrade physical access in the urban and rural area based on universal design concepts, and (2) to improve the accessibility and usability of public transportation for OKU. Meanwhile, the objectives of Strategic Thrust 6 are: (1) to ensure OKU participation in planning and decision-making for national policies including in the political field, and (2) to create awareness among OKU on their participation in voting processes.

This action plan detailed its strategies for short-term planning (2016–2017) and long-term planning (2016–2022), together with the targeted ministry and agencies responsible for the actions (Kementerian Pembangunan Wanita Keluarga dan Masyarakat, 2016).

### 4.3.2.4 Malaysian Standards implementation related to OKU access

In addition to the introduction of the Persons with Disabilities Act 2008, regulatory instruments that specifically promote OKU access in Malaysia has existed since the 1990s with the adoption of the first Malaysian Standard (MS) related to accessibility of the built environment. Any of the MS implementations is voluntary except if it is made mandatory by the responsible regulatory agencies through regulations, local by-laws, or any other similar ways (Department of Standards Malaysia, 2014b).

The use of MS to facilitate OKU access are made mandatory by regulatory authorities with the insertion of the Uniform Building By-Law (UBBL) 34A in 1991 (see Appendix 5) that requires all new buildings to have access to enable OKU to get into, out of, and around the building as in the MS. Existing buildings have to comply with the requirements within three years since the by-law came into force.

MS 1183:1990 Code of Practice for Means of Escape for Disabled People provides fire escape requirements for OKU. Meanwhile, MS 1184:1991 Code of Practice on Access for Disabled People to Public Buildings was introduced in 1991 and had the first revision in 2002 and the second revision in 2014. The second revision, i.e. MS 1184:2014 Universal Design and Accessibility in the Built Environment, uses universal design terminology.

Before the introduction of MS 1184:2014, requirements in the UBBL stated that the design and construction of access, facilities and means of escape should comply to the following MS 1184:1991 Access for Disabled People to Public Buildings (later as MS 1184:2002 Code of Practice on Access for Disabled Persons to Public

Buildings – First Revision) and MS 1183:1990 Code of Practice for Means of Escape for Disabled People. Meanwhile, MS 1331:1993 Code of Practice for Access of Disabled Persons Outside Buildings is not included in the UBBL, though the requirement is stated in the Development Order of KLCH (further discussed in 4.4.2.1 on planning permission and building plan approval in KL).

However, the latest MS 1184:2014 combined both access requirements for inside and outside a building. This MS-related to disabled access can be purchased online from the Department of Standards Malaysia at RM240 (approximately GBP44). In 2017, a booklet of amendments to MS 1184:2014 was published and can be downloaded online free of charge. In a more recent development, the price of this MS increased to RM345 (approximately GBP63) (Department of Standards Malaysia, 2019).

Table 4-3 shows related MS on OKU access and its development towards the introduction of universal design as the most recent MS-related to accessibility in the built environment.

Table 4-3 The development of Malaysian Standard related to accessibility

Year	Malaysian Standard	Description
1990	MS 1183:1990 Code of Practice for Means of Escape for Disabled People	This code of practice is used as guidance for new building construction work and modification. It provides the planning, actions and requirements that should be applied on buildings in aspects of fire safety for OKU. The provisions include fire escapes and staircases. The insertion of UBBL 34A made this MS compulsory for the architects or other submitting person.
1991	MS 1184:1991 Code of Practice on Access for Disabled People to Public Buildings	It specifies the basic requirements of buildings and related facilities in order to permit access for OKU in public buildings. The insertion of UBBL 34A made this MS compulsory for the architects or other submitting person.
1993	MS 1331:1993 Code of Practice for Access of Disabled Outside Buildings	It specifies the basic requirements for the provision and design of outdoor facilities so that they are accessible and usable by OKU. This MS is not included in the UBBL 34A. However, the requirement to conform to this code is included in the Development Order requirements necessary for planning permission.
2002	MS 1184:2002 Code of Practice on Access for Disabled Persons to Public Buildings (First Revision)	This standard supersedes MS 1184:1991.
2003	MS 1331:2003 Code of Practice of Disabled Persons Outside Buildings	This standard supersedes MS 1331:1993.
2014	MS 1184:2014 Universal Design and Accessibility in the Built Environment (Second Revision)	This standard replaces MS1184:2002 and MS 1331:2003 and was created to meet the needs of the majority of people which are generally accepted to accommodate the diversities of age, disabilities and of human conditions.
2017	MS 1184:2014, AMD. 1:2017 Universal Design and Accessibility in the Built Environment – Code of Practice (Second revision) Amendment 1	A booklet of Amendment 1 of MS 1184:2014 published in 2017.

Source: Adapted from Kamarudin et al. (2014)

### 4.3.2.5 Transport policies and regulations

Regarding OKU's mobility in Malaysia, transportation (i.e. buses, trains, taxis and privately-owned transport) and transportation buildings are under the Ministry of Transportation (MoT) jurisdiction. SPAD (the Malay acronym for Land Public Transport Commission) has been introduced by the government as the lead agency responsible for planning, regulating and enforcing public transport-related matters and operations to encourage more people to use public transport (Prime Minister's Department, 2010). According to a SPAD officer (interviewed 7/4/2017), there is no code of practice on accessible design for transportation in Malaysia. However, the erection of transportation-related buildings requires planning permission and building plan approval from the local authority in the same way as other buildings (see 4.4.2.1 on planning permission and building plan approval in KL for example). Even though public transport buildings are under the MoT, bus stops fall under the local authority's jurisdiction.

Road tax relief is available for registered physically OKU (having *Kad OKU*) who own locally made vehicles and have a driving licence. OKU need to pay a fee of RM2 (approximately GBP11) for a car and RM1 (approximately GBP5.50) for a motorcycle instead of paying the full amount of road tax. Meanwhile, there are concessionary fares for public transport for OKU. They are given a 25% discount for express bus riding and a 50% discount for local bus services, rail services and flight tickets by showing their *Kad OKU* while purchasing the ticket (DSWM, 2016b).

### 4.3.2.6 Other regulations

Other than the relevant policies and regulations included in this research regarding physical access for OKU as discussed, matters relating to OKU concerning education are regulated by the Ministry of Education. Employment issues are the Labour Department's responsibility under the Ministry of Human Resources, and health issues are under the Ministry of Health.

Table 4-4 summarises the specific national policies, legislation and regulations for OKU in Malaysia.

Table 4-4 Summary of national policies, legislation and regulations related to OKU

Provision	Description		
Malaysia National	Objectives:		
Policy for Persons	i) to give recognition as well as taking the principle that OKU have rights and		
with Disabilities	should have equal opportunity for full participation in society		
	ii) to ensure that OKU possess the same rights, opportunity and access under		
	national laws		
	iii) to eliminate disability discrimination, and		
	iv) to educate and increase society's awareness of OKU's rights		
The Persons with	The Act provides for the registration, protection, rehabilitation, development and		
Disabilities Act	wellbeing of OKU in Malaysia. The right to access buildings and facilities provided		
2008 (Act 685)	for the public on an equal basis with the able-bodied is part of this Act's provision.		
The National	Initiated by the MWFCD in 2008 with DSWM as the secretariat. The Council gives		
Council for OKU	recommendations to the federal government on OKU related matters.		
	Six committees:		
	i) Committee for Universal Design and the Built Environment		
	ii) Committee on Transportation		
	iii) Committee for Quality Life Care		
	iv) Committee on Education v) Committee for Employment		
	vi) Committee for OKU Registration		
Disability Action	Launched by the MWFCD in August 2016. Promotes ten core strategies for the		
Plan (2016–2022)	development of OKU. Two Strategic Thrusts are related to this research topic:		
1 1411 (2010 2022)	Strategic Thrust 1 (improvement of access for OKU) objectives:		
	i) to upgrade physical access in the urban and rural area based on universal		
	design concepts		
	ii) to improve the accessibility and usability of public transportation for OKU		
	Strategic Thrust 6 (increased OKU participation in planning and decision-		
	making processes) objectives:		
	i) to ensure OKU participation in planning and decision-making for national		
	policies		
	ii) to create awareness among OKU on their participation in voting processes		
Malaysian	The use of MS to facilitate OKU access was made mandatory by regulatory		
Standards (MS)	authorities with the insertion of the Uniform Building By-Law (UBBL) 34A in 1991.		
implementation	The latest MS 1184:2014 combined both access requirements for inside and		
related to OKU	outside a building with the introduction of 'universal design' in the built		
access	environment.		
Transport policies	Transportation and transportation buildings are under the jurisdiction of the		
and regulations	Ministry of Transportation. Transportation-related buildings require planning		
	permission and building plan approval from the local authority. Road tax relief is available for registered OKU who own locally made vehicles and have a driving		
	licence. For public transport, a concessionary fare is given to OKU.		
Other national	The Ministry of Education regulates matters related to OKU's education.		
regulations	Employment issues are the Labour Department's responsibility (under the Ministry		
Togulationo	of Human Resources), and health issues are under the Ministry of Health.		
International	Biwako Millennium Framework (2002):		
commitment	For actions fostering an inclusive, barrier-free and rights-based society for		
	disabled people adopted by the Asian and Pacific region governments – towards		
	including disability concerns in national policies and programmes regarding		
	disabled people's access.		
	United Nations Convention on the Rights of People with Disabilities (UNCRPD):		
	Malaysia agreed to adopt and enact laws so that OKU would have equal rights in		
	society.		

# 4.4 Kuala Lumpur access policies relating to the built environment and transportation

The provision of physical access in KL is under the responsibility of KLCH. This section overviews the related policies and regulations conducted by KLCH concerning OKU inclusion in KL city centre since MS 1184:1991 Access for Disabled People to Public Buildings was introduced in 1991 (MS was discussed in 4.3.2.4). Meanwhile, Part III of the Persons with Disabilities Act 2008 requires that OKU be given the right to access and use public facilities, amenities, and buildings on an equal basis with non-OKU. Therefore, this section provides an overview of policies related to accessibility of public realms in KL that include the inside and outside of buildings, street level environment and transportation network.

Figure 4-5 shows that the highest OKU registration in 2017 was in the State of Selangor. As KL city centre offers many employment opportunities, education, health care and other services, many OKU residing in Klang Valley (including Selangor as part of KL conurbation) have frequent travel to KL. This reinforces why researching physical access for OKU inclusion in KL is important.



Figure 4-5 OKU registration by states as of June 2017

Source: Department of Statistics Malaysia (2018)

In order to get a clearer picture of KL as the case study relating to physical access, this fourth section is divided into three sub-sections that present (1) KLCH as the local authority, (2) policies and regulations for OKU's access in KL, and (3) KL transportation network. Part of the information provided is extended from the first section, especially on how KL translates the national policies and regulations in its planning control and building control process pertaining to OKU access.

### 4.4.1 KLCH as the local authority

As the KLCH is responsible to the Federal Territory of Kuala Lumpur (explained in the Introduction Chapter), KLCH abides by the Local Government Act 1976 (Act 171) and the Street, Drainage and Building Act 1974 (Act 133) and other national statutes as other local authorities in Malaysia. The 1976 Act makes provision with respect to local government in Malaysia, and the 1974 Act pertains to street, drainage and building in the local authorities' area. Uniform Building By-Laws under the 1974 Act specifically provides requirements for access issues for KL development (further discussed in 4.4.2.1 on planning permission and building plan approval). Meanwhile, the Federal Capital Act 1960 (Act 190) makes provision regarding KL administration and the power of the Mayor.

KLCH is responsible for town planning, environmental protection and building control, public health and sanitation, waste removal and management, social and economic development, and the general maintenance functions of urban infrastructure. The KLCH vision is to be 'the leading local authority in order to realize the aspiration for KL to be a world-class city by the year 2020' which is consistent with the Vision 2020 (see 4.2.2 for Vision 2020). Meanwhile, the mission is 'to achieve progress, peace and prosperity for KL city through programs such as physical and socio-economic development, controlled planning, urban services that are planned and consistent based on good governance' (KLCH, 2017b).

Figure 4-6 shows the boundary of the Federal Territory of Kuala Lumpur which is under the administration of KLCH. The KL city centre is located approximately in the centre of the territory.

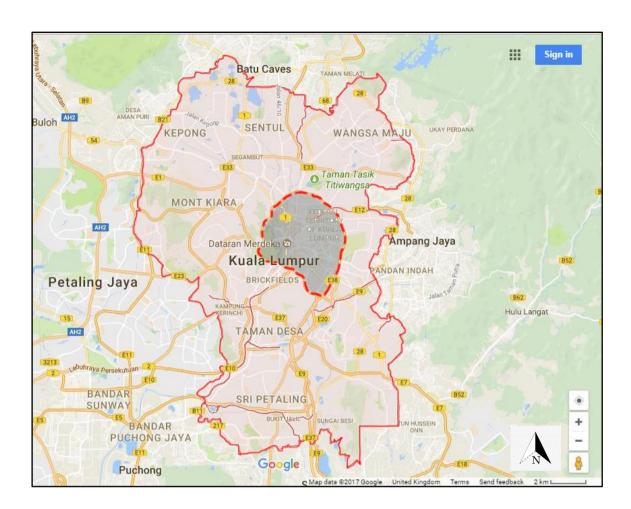


Figure 4-6 Boundary of the Federal Territory of Kuala Lumpur and Kuala Lumpur city centre in the middle

Source: Google (2017)

The Greater KL/Klang Valley project is one of the twelve areas in the National Key Economic Areas. It represents a crucial component in transforming Malaysia into a high-income nation by 2020 (refer to the Economic Transformation Programme in Table 4-1). The overall aim is to transform the region into a world-class metropolis that will boast top standards in every area from business infrastructure to liveability (Pemandu, 2011). As the biggest city and the only global city or alpha city in Malaysia that links major economic regions into the world economy (GaWC, 2012),

KL is the centre for various socio-economic activities including business, finance, administration, education, religion, culture and sports (KLCH, 2017a).

#### 4.4.2 Policies and regulations for OKU access in KL

Generally, KLCH abides by several national and local statutory requirements and policies; for instance, in conforming to national policies on OKU wellbeing as presented in 4.3.2 and abiding by the Local Government Act 1976. However, for this research, only acts and regulations related to physical access in the built environment in KL are discussed. Two specific regulations pertain to developments in KL: the Uniform Building By-Laws (Federal Territory of Kuala Lumpur) 1985 (UBBL), a by-law under the Street, Drainage and Building Act 1974, and the Planning Act 1982 (Act 267). UBBL provides the basic requirements for getting building plan approval while the 1982 Planning Act provides the basic requirements for getting planning permission (Kamarudin *et al.*, 2014).

Meanwhile, the National Heritage Act 2005 (Act 645) provides for the conservation and preservation of the Malaysian National Heritage. This Act places some limitations in providing access to buildings listed under the National Heritage lists so as to ensure the authenticity of the buildings. To date, in KL, there are 24 buildings registered as National Heritage; the first 12 buildings listed in 2007 are mainly located in KL city centre (Heritage, 2018). In 2008, the introduction of the Persons with Disabilities Act 2008 provided a legal requirement that OKU must be given the right to access and use public facilities, amenities and services, and buildings on an equal basis with a non-disabled person. This Act includes universal design as the

definition of 'access' but before 2008, 'the use of the word "access" and "accessible" is limited in that it was left for interpretation by the architect' (Yiing *et al.* 2013, p.125). However, the Persons with Disabilities Act 2008 Act does not supersede the 2005 National Heritage Act.

Table 4-5 summarises statutory requirements that KLCH abides by, that affect access provision in the territory. Generally, the erection of buildings and design of the street level environment in KL must adhere to these statutory requirements.

Table 4-5 Statutory requirements related to access

Statute	Description	Relation to OKU's inclusion
Uniform Building By-Laws (Federal Territory of Kuala Lumpur) 1985 (UBBL)	A by-law under the 1985 Act (Act 133) indicating minimum requirement for buildings for safety and comfort purposes specifically for KL. The content also explains the requirement for submission of plans for approval including the needs to conform to access requirements as in MS.	The insertion of by-law 124A specifically on accessibility issues (to include MS requirement).
Planning Act 1982 (Act 267)	This act makes provisions for the control and regulating of proper planning in KL.	The basis for urban design guidelines for KL city centre that includes the ease of movement/ connectivity, and safety and comfort for user.
National Heritage Act 2005 (Act 645)	An act to provide for the conservation and preservation of National Heritage in Malaysia.	Limits access in listed buildings.
Persons with Disabilities Act 2008 (Act 685)	Part III of the 2008 Act provides that OKU must be given the right to access and use of public facilities, amenities and services, and buildings on an equal basis with non-OKU.	Promotes equal rights and universal design.

### 4.4.2.1 Planning permission and building plan approval in KL

Planning and development control of the city (including buildings) is under the responsibility of the Planning Sector of KLCH which comprises (1) the City Planning Department, (2) the Infrastructure Planning Department, and (3) the Building Control Department, which are all directly involved in the planning of the provision of accessible infrastructures and buildings. The Planning Sector of KLCH is responsible for imposing requirements necessary for the granting of planning permission and building plan approval. The departments from the Planning Sector work closely with the consultants who submit a development plan, i.e. the architects, planners and engineers, for the purpose of approving any development application in KL. The in-house projects of KLCH are implemented by the Project Management Sector which comprises (1) the Project Implementation and Building Maintenance Department, (2) the Civil Engineering and Urban Transportation Department, and (3) the Landscape and Recreation Development Department.

Access-related requirements need to be conformed to prior to the issuance of building plan approval; these will include complying with OKU access requirements as in the MS. Building construction can only commence once building plan approval has been obtained by the applicants (the professional architects or engineers), termed as the Principal Submitting Person (PSP). Commencing April 2007, the Certificate of Completion and Compliance (CCC) came into effect. Building certifications are certified by the PSP in the effort towards a self-certification and self-regulation approach in the construction industry (The Board of Architects Malaysia, 2008).

As earlier mentioned in 4.3.2.4 on MS implementation, a Development Order is a written document given to planning applicants for planning permission from the KLCH. The Development Order lists the respective department that the development is required to comply with in order to be granted planning permission, and later the building plan approval. The Development Order also contains certain MS that the applicants should conform to (see 4.3.2.4 for details of the MS implementation related to OKU access). The building plan approval is then counterchecked against the completed building for the issuance of the Certificate of Fitness for Occupation (CFO) from the local authority (Kamarudin *et al.*, 2012). However, under the CCC, planning permission and building plan approval are still required to be submitted for approval by the local authorities but there is no requirement for a site inspection from the local authorities to check the compliance of the development since the CCC replaced the CFO.

In April 2014, KLCH signed the Memorandum of Understanding (MoU) with the Department of Standards Malaysia to encourage and promote compliance with MS 1184:2014 Universal Design and Accessibility in the Built Environment (Second Revision) (again, see 4.3.2.4 for details of MS implementation). With the MoU, KLCH has taken the initiative as the first local authority in Malaysia to implement the said MS (DSM & KLCH, 2014). As well as the compliance from the PSP, public projects run by KLCH implementation departments (in-house projects) from the Project Management Sector are expected to comply with MS 1184:2014 Universal Design and Accessibility in the Built Environment (Second Revision).

With regard to the religious context, similar to other Islamic countries, Malaysia has dedicated buildings that also required planning permission and building plan approval. Most Muslims perform prayer five times a day, twice being during the day. Hence, a room or space to perform prayer (*surau*) is usually provided in offices, institutional and commercial buildings. *Surau* is also built as a small free-standing building. For Friday prayer, the male Muslims often pray together in a bigger free-standing building called *masjid* (mosque). *Masjid* is more than just a praying hall but also serves as a community centre (Samad *et al.*, 2018). Other religions also have religious buildings, but prayer visits are usually not as frequent as for Muslims hence have less planning regulations associated with them.

### 4.4.2.2 Urban design guidelines for Kuala Lumpur city centre

Starting from 2014, application for developments in KL city centre should be made based on design principles as stated in the Urban Design Guidelines for Kuala Lumpur City Centre (UDG) and also observe the overall guidelines of nine different precincts in KL city centre as shown in Figure 4-7. The precincts are Chow Kit Precinct, Pudu Precinct, Kampung Attap Precinct, Civic Precinct, Botani Precinct, Bukit Bintang Precinct, KLCC Precinct, Kampong Bharu Precinct and River of Life (ROL) Precinct. Each precinct is divided into smaller enclaves, and new developments are defined to reflect each enclave's unique characteristics (DBKL, 2014).

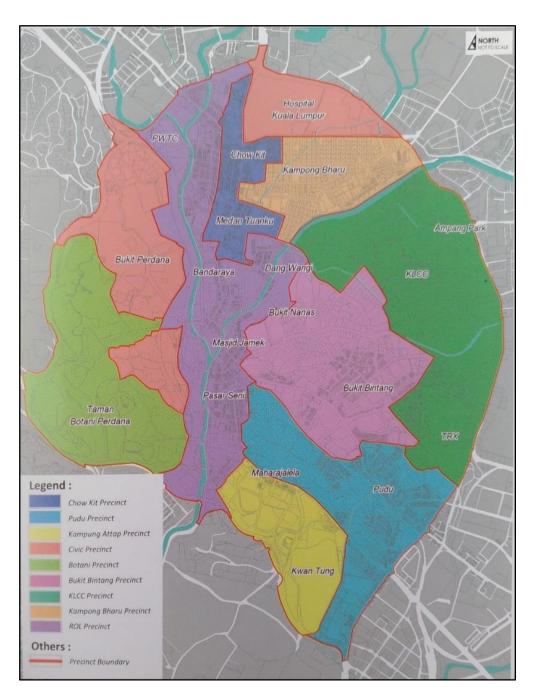


Figure 4-7 UDG's nine precincts

Source: DBKL (2014)

Eight essential principles in urban design are being implemented as the directive of UDG. The urban design principles are (1) diversity and mixed uses, (2) sustainable design in harmony and blending with nature, (3) ease of movement/connectivity, (4) visual richness, (5) enclosure and continuity, (6) safe and comfortable environment,

(7) a high-quality public realm, and (8) structure, legibility and character. OKU access would be relevant to principles 3, 5, 6 and 7. Nonetheless, there are no specific guidelines explicitly mentioning OKU access in this UDG.

Design guidelines specifically relating to OKU access, information and examples of physical access facilities (e.g. ramp design, OKU parking space, toilet facilities) have been provided in many other design guidelines for OKU such as the Guidelines for Details of Access Facilities for Disabled People (title translated to English) published by KLCH in 2013 that can be purchased for RM50 (approximately GBP10). There are also design guidelines indicated on the KLCH website that can be downloaded by the PSP and public free of charge, for example, the Design Manual for Development in Kuala Lumpur Federal Territory (title translated).

This design manual includes the statement that 'the development in KL should consider special requirements for OKU as to ensure that KL could be enjoyed by all walks of life' (DBKL 2015, p.5), and the access and pedestrian walkway must 'avoid [a] sharp turn and avoid having an abrupt gradient as according to accessible design requirements' (DBKL 2015, p.7). The last page of the manual indicates that developments in KL need to comply with the Guidelines for Details of Access Facilities for Disabled People, and Guidelines for a Barrier-free Design. Meanwhile. there is a checklist for design requirements for development in KL that has two specific statements for OKU access. Item 16 in the checklist requires 'a suitable location, design and material finishes for public facilities such as lift, surau (praying area). swimming pool. public toilet. OKU toilet. changing room and kindergarten/nursery'. Item 17 requires that all developments provide a 'location and design that is safe, comfortable and barrier-free with a suitable differential of floor levels to the lobby and all common pathways as following the Malaysian Standards'.

### 4.4.2.3 Access auditing

An Access Audit Team under the Innovation and Building Standards Unit was set up in KLCH to identify physical barriers and give recommendations for a barrier-free environment in KL. This team runs simulation sessions with OKU and conducts access audits on public facilities. Data collected using checklists based on MS-related to OKU access is used to identify and record problems while recommendations for rectification of the facilities audited are also included in the report. As of 2014, KLCH has appointed 27 audit inspectors from among OKU representatives (as the end user) and 27 staff as the audit panel (Abdullah, 2014).

In 2011, KLCH published an Access Audit Manual 1Malaysia as Guidelines for Universal Design Facilitators (title translated into English) in collaboration with the Ministry of Women, Family and Community, the National Council for OKU, and the International Islamic University Malaysia. According to one the pioneer trainers of access audits in Malaysia (interviewed 17/2/2017), access auditing is not compulsory for building owners and there is no specific body to enforce the rectification of each building audited.

### 4.4.3 Kuala Lumpur public transportation

The growing use of private transport in KL has contributed to traffic congestion, traffic accidents, limited parking space, and environmental pollution (Almselati *et al.*, 2011). The Road Transport Act 1987 (Act 333) makes provision for the regulation of motor vehicles and of traffic on roads; it also gives authorisation to the Mayor of KL to appoint traffic wardens. Among the government's goal are to improve urban public transport so that it is the people's choice of transport as in the Economic Transformation Plan (see 4.2.4) and the Government Transformation Programme (see 4.2.5) with the commencement of projects concerning public transport in KL and the Klang Valley area.

Policies and regulations regarding transportation in KL conform to the national provision as discussed in 4.3.2.5 on Malaysian transport policies and regulations. For example, there are concessionary fares for OKU passengers for rail and bus services. Meanwhile, KLCH is specifically responsible for the design of bus stops which are also connected to pedestrian pathways and kerb cuts for wheelchair access. Generally, bus stops are designed by engineers from the Civil Engineering and Urban Transportation Department of KLCH and the pedestrian pathways are either designed by engineers from the same department or by architects from the KLCH Project Implementation and Building Maintenance Department. Architecture firms design and submit plans for transportation hubs and train stations that require building plan approval from KLCH in the same way as other buildings, as discussed in 4.4.2.1.

In addition to using privately owned vehicles, commuters to and within KL city can use rail, bus and taxi services to reach KL city centre. The alternative modes of public transportation (i.e. the rail, bus and taxi services) are discussed next.

#### 4.4.3.1 Rail services

The rail service is one of the major transportation systems connecting people from around the Klang Valley to KL city centre through the Light Rail Transit (LRT), KTM Komuter (commuter) and the Express Rail Link. The KL Monorail operates only within KL city centre and transports over 5,000 people per hour daily (Wonderfulmalaysia, 2017). Prasarana is a government owned company operated by Rapid Rail. According to a Prasarana officer (interviewed 4/4/2017), in 2007, Prasarana took over the KL Monorail business to improve the urban public transport sector since the previous company had some financial difficulties. LRT is another rail service owned by Prasarana. LRT has three rail lines (1) Ampang Line (started 1995), (2) Sri Petaling Line (started 1998), and (3) Kelana Jaya Line (started 1998). Sri Petaling Line and Kelana Jaya Line have extended the track. The new extended service was fully operational in 2016, with another 11 new stations for Sri Petaling Line and 13 new stations for Kelana Jaya Line (Prasarana officer, interviewed 4/4/2017).

Meanwhile, KTM has been the main rail operator in Peninsular Malaysia since the British colonial era, previously known as the Federated Malay States Railways. KTM was corporatised in 1992 but still owned by the Malaysian government. According

to the SPAD officer (interviewed 7/4/2017), the KTM Komuter line (started in 1994) was built from the existing rail lines with some alterations.

For the Express Rail Link (ERL), there are two services provided by ERL: a rail service to the Kuala Lumpur International Airport (KLIA Ekspres) and KLIA Transit. KLIA Ekspres is a direct rail service from KLIA to KL Sentral while KLIA Transit has three stops, i.e. Bandar Tasik Selatan Station, Putrajaya & Cyberjaya Station and Salak Tinggi Station (KLIA2, n.d.). From other rail services to the KL Monorail, one can transit from LRT or KTM Komuter at KL Sentral. KL Sentral is the main transportation hub in KL and the KL Monorail station is connected indoors, located in NU Station adjacent to KL Sentral. Table 4-6 summarises the rail services in KL and Klang Valley.

Table 4-6 Train services in KL and Klang Valley

Rail line	Provider	Description
Light Rail Transit (LRT) - Ampang Line (started 1995) - Sri Petaling Line (started 1998) - Kelana Jaya Line (started 1998)	Owned by Prasarana. Operated by Rapid Rail	Train services on stilts and underground. Connects passengers from around Klang Valley to KL city centre.
KTM Komuter (started 1995) - Port Klang Line - Seremban Line	Keretapi Tanah Melayu (KTM) or Malayan Railway	KTM is the main rail operator in Peninsular Malaysia since the British colonial era. KTM Komuter connects passengers from around Klang Valley to KL city centre.
Express Rail Link (ERL) (started 2002)	Operated by Express Rail Link Private Limited	The fastest airport transfer that connects Kuala Lumpur International Airport (KLIA) with KL Sentral transportation hub (in the city centre).
KL Monorail (started 2003)	Owned by Prasarana. Operated by Rapid Rail	The route mainly serves major commercial areas in KL city centre.

Figure 4-8 shows the Klang Valley integrated transit map with KL Sentral as the main hub for train transit. However, the recently completed Klang Valley Mass Rapid Transit project that Prasarana Malaysia Berhad managed is not included as part of this research observation since it was launched in July 2017, two months after the research fieldwork was completed.

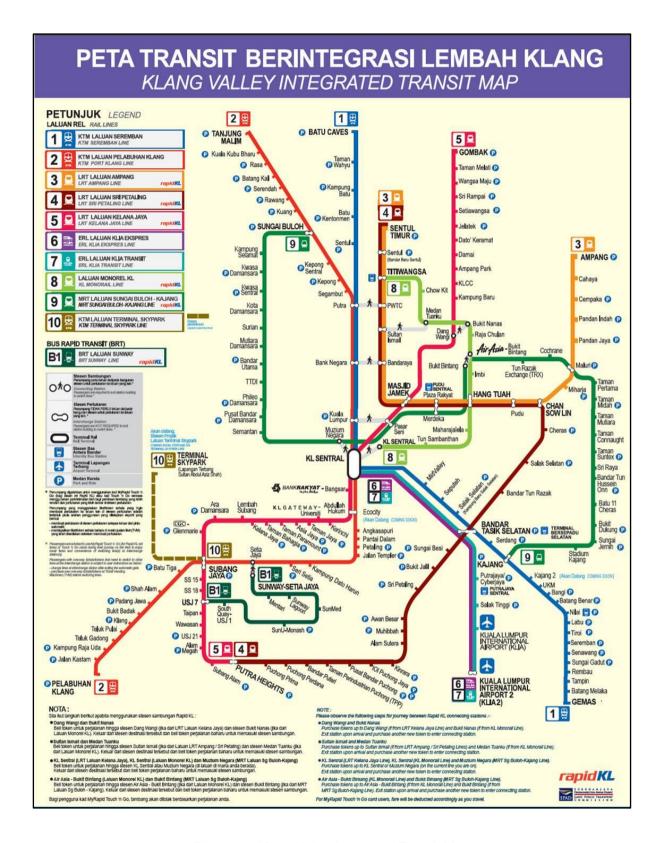


Figure 4-8 Klang Valley Integrated Transit Map

Source: Prasarana Malaysia Berhad (2017)

### 4.4.3.2 Bus services

Buses play an important role in providing mobility for public transport commuters in KL/Klang Valley. RapidKL, the major bus operator in KL, has taken the initiative of providing disabled-friendly buses by purchasing 100 accessible buses in 2007 (Saad, 2013). RapidKL bus routes connect the local area to link with other transport modes such as the rail services, transporting passengers directly from the suburban area in Klang Valley to KL transportation hubs, and provide the city shuttles. In addition to the RapidKL bus service, there are also accessible buses known as the Smart Selangor provided free of charge by the Selangor government in certain Klang Valley areas, mainly to transport passengers to a rail station where passengers can travel to KL city centre.

Meanwhile, within KL city centre, passengers can take either the RapidKL bus or a free GoKL bus service initiated by the Land Public Transport Commission (SPAD) in 2012. GoKL buses are equipped with free Wi-Fi and are disabled-friendly and eco-friendly (SPAD, no date). The service provides access to major shopping areas and cultural attractions in the city centre as shown in the route map in Figure 4-9.

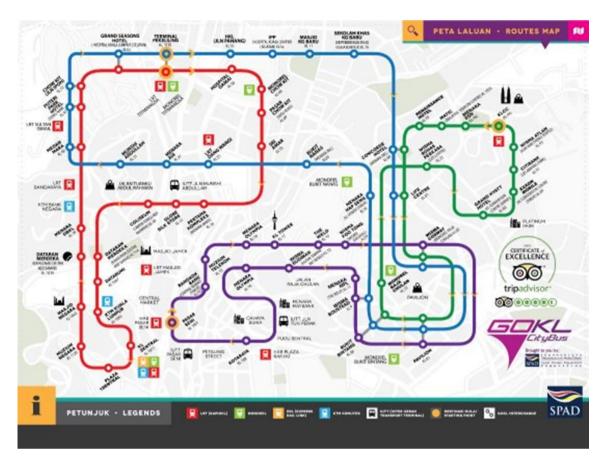


Figure 4-9 Four different GoKL routes within KL city centre

Source: SPAD (no date)

# 4.4.3.3 Taxi services

Travel by taxi is an alternative means of transportation available to transport passengers to and within KL city centre. The taxi fare is calculated either according to the meter reading or by using coupons according to zones (SPAD, 2013). Conventional taxis in Klang Valley commonly consume natural gas for vehicles (NGV) since NGV-powered vehicles are the most cost-effective solution than a regular petrol-powered engine that costs more than twice the amount to achieve the same range (Aaron, 2015). The national cars used for taxis are sold already

equipped with an NGV cylinder in the boot. As a result, mobility aids such as a wheelchair or walking frame cannot be easily placed in the car boot.

Meanwhile, the e-hailing of a taxi through smartphone applications such as GrabCar was introduced in 2012. This service has become more popular after the introduction of Uber in 2014. For Uber, the car commonly used is the driver's personal car, and NGV is rarely installed. Hence, mobility aids can be more easily placed in the car boot.

# 4.5 Conclusion

This chapter provided an overview of the Malaysian and KL contexts prior to zooming towards OKU policies and regulations. While Malaysia is indeed still part of the OECD DAC List of ODA Recipients, it has been transitioning quickly towards prompt development but nevertheless is not proposed as yet for graduation. Its aspiring global city KL is characterised by a mixed urban built environment both displaying developed and developing features; this is reflected upon the measures already in place regarding OKU access and inclusivity. Now, while every city and country are different, KL offers the opportunity to unwrap the issues of physical accessibility for the inclusion of disabled people in a transitioning city. This resonates with similar challenges faced by other studies in cities at similar transitions (see Sawadsri, 2010; Chiwandire & Vincent, 2017 as discussed in 2.2.3.2 for example), which reinforced this study's relevance beyond the national level.

Malaysian policy for OKU has laid specific objectives for OKU's wellbeing that have led to the formulation of other policies and regulations for OKU's recognition and

empowerment in Malaysia, such as the setup of the National Council for OKU, and the Disability Action Plan (2016-2022). This chapter has detailed the various policies, regulations and legislation related to OKU's access for buildings and the street level environment, including transport facilities in Malaysia and KL. KL not only follows national level policies and legislation but has its own access requirements for OKU inclusion. Those provisions are supposed to be the tools for achieving an accessible KL. However, based on the evidence in the literature reviewed in Chapter 2 (see 2.1.3), it appears that there is inconsistency between the policies and reality of access provided in KL as discussed by several researchers (see for example, Mothiravally et al., 2014; Kamarudin et al., 2015; Isa et al., 2016). Although the Malaysian government has developed significant disability provisions, OKU still encounters physical barriers in the built environment. Those barriers hinder them in seeking physical access for employment, education, health care, etc. Yet, the reasons for the lack of implementation of policies related to accessibility of buildings and spaces for OKU inclusion in KL has not received any research attention. Again, this has relevance for other transitioning cities, facing similar challenges.

There is a need to understand both the perspective of OKU in accessing KL, and the stakeholders' measures and challenges in shaping physical access for OKU inclusion in KL city centre. Therefore, this thesis investigates the barriers in the built environment by employing the go-along interviews with OKU participants and examines the possible reasons for the insufficient provision of physical access for OKU inclusion as highlighted in the literature. The next three empirical chapters will deliberate (1) the accessibility of transportation modes and transport-related

facilities for OKU, (2) the accessibility of buildings and the street level environment for OKU, and (3) the effectiveness of measures being taken by professional stakeholders in providing physical access for OKU.

### **CHAPTER 5**

# THE ACCESSIBILITY OF TRANSPORTATION MODES AND TRANSPORT-RELATED FACILITIES FOR DISABLED PEOPLE TO ACCESS KL CITY CENTRE

Accessibility is vital for everyone since it enables individuals to access places in the city centre for whatever reason. One of the mobility tools to access the city centre is by using modes of transportation. The availability of choice in accessible transportation and its related facilities provides more freedom for OKU to enjoy life and valuable social activities. However, a lack of facilities in transportation might restrict a person's mobility, and hence, restrict their participation in society.

This chapter aims to analyse access for OKU's inclusion in using the available ranges of transportation that was observed from their place of residence to KL city centre including transportation-related-facilities i.e. taxi/bus stops and facilities in transportation hubs. Observation on the inclusion of OKU through transportation also considers numerous policies, guidelines and projects on transportation that could contribute to their inclusion (see Chapter 4 for details). These include the Government Transformation Programme (GTP) launched in 2009 with one of the National Key Result Areas (NKEA) having the aim to improve urban public transportation, together with the Eleventh Malaysian Plan (2016–2020) with one of the Strategic Thrusts being to enhance inclusiveness towards an equitable society. In the meantime, some of the guidelines are still in the drafting and planning stage

(e.g. guidelines drafted by the Universal Design Committee under the National Council for OKU on transportation and accessibility). The implementation and enforcement issues are discussed in Chapter 7.

This chapter is divided into four sections according to the type of transportation used by OKU to access KL city centre i.e. (1) taxi services, (2) rail services, (3) bus services, and (4) private and other types of transportation. Deliberations are based on the data concerning the experiences of the OKU, together with my observations. Attention was focused on barriers and facilitators that OKU faced on the go-along journey to KL city centre. Conclusions are correspondingly made at the end of this chapter.

It should be noted that to reach KL city centre from around Klang Valley, a person might have to use more than one type of transport from their house, except for those who drive their car straight to their destination. Table 5-1 shows the distance from participants' houses to the first destination in KL city centre, estimated car travelling duration based on Google Maps (taken before the go-along journey starts), the real duration taken, and methods of mobility in the go-along journeys. However, in the real journey observed during fieldwork, the journey time was more than the time estimated by Google Maps due to the interaction of individual factors and the environmental factors.

Table 5-1 Distance, estimated travel duration and methods of mobility in the go-along journey

Participant	Walking aid	Distance from house to KL city centre (first destination)	Estimated car travelling duration to KL city centre (first destination) based on Google Maps	Real duration to KL city centre (first destination) by using participant's chosen transport mode	Methods of mobility to KL city centre
P1	Wheelchair	2.3 km	10 min	10 min	Interviewer's car
P2	Unaided	42 km	1 hr	2 hrs	Bus, KTM and LRT
P3	Wheelchair	6.3 km	18 min	45 min	Motorcycle and LRT
P4	Skateboard	10 km	30 min	1 hr	Friend's motorcycle and LRT
P5	Wheelchair	9 km	30 min	1 hr 15 min	Motorcycle and LRT
P6	Wheelchair	41 km	1 hr 5 min	2 hr 45 min	Uber, KTM, KL Monorail and LRT
P7	Wheelchair	32 km	30 min	30 min	Car
P8	Wheelchair	37 km	1 hr	2 hr 30 min	Uber, KTM and LRT
P9	Unaided	11 km	20 min	1 hr 5 min	Uber and LRT
P10	Wheelchair	32 km	30 min	1 hr 30 min	Car, ERL and hop-on-hop- off bus
P11	Wheelchair	16 km	30 min	1 hr 30 min	Bus, LRT and hop-on-hop- off bus
P12	Wheelchair	10 km	25 min	1 hr 35 min	Uber, LRT and KL Monorail
P13	Wheelchair	4 km	15 min	20 min	Car
P14	Powered wheelchair	4 km	20 min	30 min	Bus and Uber
P15	Powered wheelchair	1.5 km	8 min	25 min	Walking
P16	Single crutch	15.5 km	20 min	1 hr	Bus, LRT and Uber
P17	Unaided	7 km	15 min	15 min	Car
P18	Powered wheelchair	48 km	1 hr 5 min	2 hrs 30 min	Bus and car
P19	Prosthetic leg	29 km	45 min	1 hr 10 min	Car and LRT
P20	Crutches	5.7 km	20 min	45 min	Uber and LRT

## 5.1 The use of taxi services

Both conventional taxis and e-hailing taxis are commonly used by OKU participants, if there is no bus stop near their house, to get to the nearest rail station for a trip to KL city centre. A taxi is commonly used as a mobility tool for the first miles that connects the OKU to other transportation linkages to access the city. The research participants distinguished between conventional taxis and e-hailing taxis as 'taxi' and 'Uber'. The advantages and disadvantages in using both services are considered as part of the transportation barriers and facilitators for OKU's inclusion as discussed in this section.

# 5.1.1 Wheelchair storage space and passenger seats

Despite providing ease of mobility, there are also some drawbacks faced by OKU in using taxis. The lack of storage space for a wheelchair is a physical barrier in transportation since the natural gas for vehicles (NGV) cylinder is stored inside the taxi boot (see 4.4.3.3 on taxi services). P8 (female, wheelchair user, living with other OKUs accommodated by the employer) shared the following comments:

Taxi has a gas cylinder in the boot. My wheelchair won't fit in the boot or otherwise, the boot can't be shut properly. [Hence] my wheelchair is usually placed in the back seat.

If the wheelchair is placed in the back seat, in consequence, it limits the number of passengers for one taxi, despite the allowable passengers for a sedan being stated

to be up to five persons including the driver (SPAD, 2017). In this case, for example, more taxis are needed to transport a group of three to four persons for an outing. The situation faced by P8 contributed to negative feelings that led to discomfort (Iwasaki & Mactavish, 2005) as for example when P8 further added, "I can't go for an outing with more friends in one go since there's only two passengers that can fit in the taxi". P8 sounded upset about only being able to go on an excursion with one friend when she would have liked to have fun enjoying the city centre in a group. One of the ways to fight disappointment in dealing with access issues is by establishing relationships with other disabled people (Watson, 2002), but in P8's situation, her opportunity to share interests and experience outings with colleagues were limited. Meanwhile, some other OKU really need a one-to-one companion to assist them in their everyday life. Therefore, the person could go with the assistant but not with other friends if the taxi's condition is as above.

Having wider options than that offered by the conventional taxi would open up more opportunities for OKU inclusion in KL city centre. With Uber, customers have the option to choose the size of the car required with the number of passengers to fit in the car i.e. UberX (low-cost, typically 4-seater), UberXL (the low-cost ride for large group, typically 7-seater), and UberBlack (premium Uber service, could be high-end 4-seater and high-end multi-purpose vehicle) (Uber Technologies Inc., 2017). Moreover, Uber generally run without NGV, hence, the problem regarding the limited space to store mobility aid is not a problem since there is no NGV cylinder stored in the car boot. When more opportunities are given for OKU for their social inclusion, such as the availability of seating space and options of car sizes to enable OKU

mobility to access the city centre, there are more chances for urban social sustainability as highlighted by Dempsey *et al.* (2011).

### 5.1.2 Fare and financial issues

Financial issues contribute to the choice of transportation used by OKU to access KL city centre or the choice of not participating in activities offered in the city centre. In general, disability is associated with poverty (Häyry & Vehmas, 2015). Presumably, some would need to reserve money for their medical expenses especially for those who require sustained medical care. When denied the chance to save their money through maximising taxi pooling by socialising in a larger group, P8 exclaimed, "Some might decide not to go for an outing, definitely it incurs cost!" P8 was glad that the Uber service was introduced and offered a cheaper fare compared to taxis.

Based on my four months' observation during the fieldwork, Uber's fares are cheaper than taxis with meter readings and Uber regularly offers special promotions, especially for festive seasons or any special occasions. P6 (female, wheelchair user) commented, "Now we never call for a taxi, just Uber. Taxi is expensive". In contrast, P4 (male, skateboard user) hardly spends money on either a taxi or Uber because he considered both fares expensive, and he would prefer using his skateboard within KL city centre rather than riding any public transportation.

### 5.1.3 Driver's attitude towards OKU

Barriers faced by OKU are not just in physical transportation but also attitudinal. Attitudinal barriers can also contribute to the exclusion of disabled people (Bromley *et al.*, 2007). There is a lack of recognition among the public towards OKU that contributes to unjust situations or what Fraser (2003) termed as cultural injustice. Other than facing barriers in transportation, 'disability' of OKU is caused by social exclusion such as negative support from society, and stereotypes and ignorance of OKU's rights and abilities as highlighted by the social model of disability (Oliver, 2004; Kadir & Jamaludin, 2012a).

There are cases of disabled people being discriminated against by some taxi drivers. P18 (male, powered wheelchair user) expressed his anger when he related, "Could you just imagine, once I stopped a taxi, the driver asked me if I have any money to pay the taxi!" It was a humiliation to P18 when he was questioned about his ability to pay. This situation experienced by P18 indicates that OKU are often stigmatised as the recipients of charity (Wilson, 2004) that they cannot own money. This experience of psycho-emotional dimensions of disability could affect disabled people's mood when they are being hurt by the reaction of others (Reeve, 2010), thus, indirectly restricting them from enjoying social life.

Meanwhile, in the fieldwork, one taxi driver when asked to go to the National Mosque from the Central Market, fixed the fare as RM20 (approximately GBP3.60) for a three-kilometre distance ride, although it was a metered taxi. P8 promptly responded to me, "I knew it, I knew it! It's because I'm OKU, he wants extra [money]". P8 further complained, "Some taxi drivers just refused to take a wheelchair user especially

[OKU] with a powered wheelchair because it's heavy to lift". Even though P8 is not using a powered wheelchair, it is apparent from what she voiced that attitudinal issues occur among taxi drivers while dealing with OKU, and these are being discussed in OKU circles. It seems that there may be more possibility for people with invisible impairment to avoid being exposed to similar misrecognition.

Whether the taxi driver is charging for the fact that it causes him additional work to fold and lift the wheelchair into his taxi or whether he is just taking advantage of an OKU customer, both are signs of discrimination against OKU. However, since we have another option, we opted for an Uber and only spent RM4 (approximately GBP0.70) for the journey with a pleasant driver's attitude. Moreover, after every ride with Uber, the customer will get a notification in the Uber application (app) to rate their satisfaction of the service provided, which is part of the monitoring system by the Uber company to ensure a good quality service. This reviewing facility is an advantage to OKU passengers as it helps to ensure that OKUs are treated in a better way, without double standards, or else, the Uber driver will be penalised for not providing a satisfactory service to disabled passengers.

Taxis are required to exhibit the Land Public Transport Commission (SPAD) contact number so that complaints can be made for any misconduct by taxi drivers. However, with regard to taxi drivers' attitudinal issues, RG7 (transportation regulator) admitted, "There were complaints from the public, but not regarding OKU discrimination". Yet, in the go-along interviews, the majority of the participants complained of taxi drivers' attitudes towards them, but none lodged complaints to

the responsible body (more on OKU complaints are discussed in 7.3.2 on the OKU voice and participation).

# 5.1.4 Convenience and safety assurance

Generally, OKU passengers preferred a transportation service that is more convenient to book and enables them to have a better control over their life, including safety issues.

Uber simplifies the transportation booking method through its app by using a smartphone, for example, as shared by P1 (female, wheelchair user):

If I were to get a taxi [from the house], my mom or my sibling needs to stop the taxi from up there [pointing to the street level]. But now, with Uber, it's more convenient since I can book through my smartphone and it comes straight in front of my door.

Considering that P1 needs to get help from others to call for a taxi since the location of the taxi stop requires her to wheel her wheelchair through a hilly area to the street level, with Uber, she feels more independent and has more control of her mobility with reduced help from others. The Uber service seems in line with the Convention on the Rights of Persons with Disabilities (UNCRPD) in enabling disabled people to live independently and participate fully in life by taking appropriate measures to ensure disabled people's access (UN, 2006). Even though access for everyone is highly achievable with intervention from others (Barnes, 2011) such as assistance

from family members, P1 appears more satisfied when she has more power over her mobility.

For taxis, there is an extra charge for telephone booking where customers can also request a specific location for pick up. With the Uber app, customers can be picked up at a required location without the need to explain the location. In addition, the driver's name, photograph, telephone number, car registration number and driver's rating are also available in the app. Furthermore, customers can track the car arrival from the map in the app without having a long wait. These are advantages for those who have more concern for safety and the OKU gets more safety assurance by having those details in hand. Moreover, safety is one of the non-physical factors that contributes to urban social sustainability (Dempsey *et al.*, 2011) and the effort in making people feel safe is valued by the OKU.

# 5.1.5 Inconvenience of transferring from wheelchair to the car seat

Although there are many examples of advantages in using Uber compared to a taxi, both services need wheelchair users to be transferred from the wheelchair to the car seat. P6 (female wheelchair user) shared the following comments:

From monorail [Raja Chulan Station] to get to the shuttle van service in KL Tower gate is quite a distance for me [approximately 650 m walking] but if we were to ride Uber, it's troubling to be transferred in and out of the car. I would rather walk provided someone is willing to push [her wheelchair].

Research participant P14 (male, powered wheelchair user) preferred to manoeuvre his powered wheelchair in KL city centre rather than using transportation that needs him to be transferred from wheelchair to car seat since the powered wheelchair is heavy to lift and not easy to fold. However, it was raining while we were about to start our walking journey back from Kuala Lumpur City Centre (KLCC) to Berjaya Time Square to catch an accessible bus to P14's house. In addition, since the wheelchair motor is sensitive to water and dampness, we decided to get an Uber straight from KLCC to P14's house.

From experiencing the Uber ride with P14, it was observed that even though a bigger Uber car (UberXL) had been ordered to allow space for the bulky powered wheelchair, still, it was necessary to transfer P14 from the wheelchair to the car (refer to Figure 5-1a). In fact, the seat was even higher than in ordinary sedan cars and this made the transfer more difficult with a higher risk of falling for the OKU even with the help of the go-along assistant and the Uber driver.



Figure 5-1 Transferring those unable for self-transfer (a) transferring P14 to a bigger and higher car (UberXL) that can accommodate his powered wheelchair (b) transferring P6 to UberX for KTM Komuter (Klang Station) from her house

Source: Author (2017)

From my observation, while being carried either from the wheelchair to the car or vice versa, I could hear sighing from my participants that might indicate that they were not comfortable or were experiencing pain while being transferred. The experiences in dealing with taxis and Uber with the go-along participants appear to highlight the importance of having a vehicle with a wheelchair ramp or hydraulic powered lift to allow easy access for wheelchair users.

# 5.1.6 Summary of taxi and Uber issues

Participants that have tried both taxis and Uber services preferred the latter service in terms of the availability of the car options and size, booking convenience, the fares, and drivers' attitude and service. The car options and size could also determine the number of passengers to be included without having to surrender space for a wheelchair. OKU have more control over their pick-up point through the booking method. OKU also receive a competitive and predictable fare, and better service from Uber drivers compared to taxi drivers as there is a review facility service by the Uber operator in an Uber app that helps to reduce discrimination against OKU. In addition, the driver and car information in the Uber app made OKU feel safer when using the service.

Nonetheless, wheelchair users still need to be transferred from their wheelchair to get into the car. Issues arise for those who do not have the ability to transfer to the car seat on their own and prefer direct access to the vehicle without the need to be transferred; this consideration seems important and not to be ignored. Being lifted

to be transferred to/from the car seat makes OKU feel physically uncomfortable and being watched by others while being carried affects them psycho-emotionally.

Even though taxis are required to exhibit the SPAD contact number, SPAD did not get any complaints on misconduct by the taxi drivers against OKU. Meanwhile, the reviewing service through the Uber app is part of measures taken to provide better access and a better service for OKU inclusion in the city centre. Table 5-2 summarises the criteria of taxis and Uber as barriers and facilitators in transporting OKU for inclusion in KL city centre.

Table 5-2 Comparison of taxi and Uber in terms of barriers and facilitators

Criteria	Taxi	Uber	
Car options	Limited to whatever taxi is passing by or can be ordered by a telephone call (with extra charge)	Car options and size can be chosen from Uber app	
Boot space for wheelchair	Limited since NGV takes up space	Convenient, rarely shared with NGV cylinder	
Number of passengers	Less passengers since wheelchair usually placed in the back seat (disadvantage for wheelchair users)	As maximum passengers allowed	
Booking method	Conventional through stopping in-situ or by telephone call (with extra charge)	Through smartphone but need to have internet connection	
Fares	Unpredicted, using meter reading on top of the minimum charge	Predictable through the app, without minimum charge, often with promotion fare/discounted rate	
Driver's attitude/service towards OKU	Some were complained about as taking advantage in charging extra or refusing to transport OKU	Friendlier and willing to help	
Service monitoring	None, unless complaints are made to SPAD	Satisfaction rating in the app	
Driver and car information	Exhibited in the taxi	Included in the app	
The need to transfer from wheelchair to car seat	Yes	Yes	

Next, the discussion moves to access issues faced by OKU while using rail lines to access KL city centre.

# 5.2 Rail lines and facilities in the stations

In the go-along journey, it was observed that in general, the rail services facilitate OKU mobility to KL city centre more than they provide barriers. Concessionary fares were available for disabled people with a different colour of chip coin from the chip coin for the non-OKU. The introduction of reduced fare policies has advantages in encouraging disabled people to travel where they might not otherwise have done so (Frye, 2011).

Good examples of facilities for OKU with mobility difficulties related to trains and stations in the Light Rail Transit (LRT), KTM Komuter (KTM), Express Rail Link (ERL) and KL Monorail include priority seats for OKU, priority at the ticket counter, gates for OKU access with a wider opening to allow wheelchair access, lifts, escalators, ramps, railings and OKU toilets. Some of the examples are shown in Figure 5-2. However, for KTM and KL Monorail, not all stations are equipped with those facilities mentioned.





Figure 5-2 Examples of facilities in rail stations (a) special gate for OKU with a wider opening for wheelchair access (b) station renovated to provide lift

Source: Author (2017)

For KTM, other than upgrading certain stations with OKU access facilities, they had changed the interior of the rail coaches to a more wheelchair-friendly layout (refer to Figure 5-3). According to P6 (female, wheelchair user), the previous train seating layout was similar to that of express buses that are too narrow for wheelchair manoeuvring as she has previously experienced.



Figure 5-3 New KTM Komuter layout of seating with dedicated area for wheelchair parking

Source: Author (2017)

Nevertheless, based on the fieldwork carried out, barriers to OKU mobility have been identified in the rail-related-facilities as follows: the gap in-between the train platform and the train door, issues on vertical transportation, insufficient public display signs indicating OKU facilities, inappropriate materials used for seating and flooring, the lack of staff for assistance, high ticket counters, and issues on toilet facilities. The barriers highlighted, especially regarding facilities in the rail stations, are commonly faced by OKU in other buildings as well, such as the issues with vertical transportation, high ticket counters and issues on toilet facilities. Issues with vertical transportation (i.e. lifts, escalators, stair lifts and staircases) are discussed in this section since they are directly related to enabling OKU access to the rail

services. However, issues with toilet facilities and ticket counters are more relevant to Chapter 6 as building barriers are discussed there (6.2.1 for counters and display area and 6.2.2 for toilet and sanitary facilities).

As well as the barriers identified, there were also negative perceptions and impressions of the transportation system among OKU themselves. Some are caused by the lack of public transportation exposure in terms of information readily available to the public. For example, after the go-along journey, P2 (female, walking unaided) confessed that, "All this while I thought that only KTM Komuter could go to KL but now I know a better option". Before the journey, P2 was not aware of other train services than KTM and not confident if she were to lead me to KL city centre. At the end of the go-along journey, P2 thanked me for the opportunity to have a walk-along session with her. She told me with a big smile, "Thank you very much, I'm very grateful, you gave me the chance to explore places I had never been, [and for the] new experience with the LRT!". She further added, "I hardly go out, but it's not as difficult as I think".

Meanwhile, P17 (male, walking unaided) had a perception that there was no lift provided in all old LRT stations. He did not realise that all existing LRT stations have been upgraded and equipped with lifts for OKU access. This perception came from his past experience commuting on the Sri Petaling Line some five years ago. More public notifications when upgrading is undertaken would possibly alert the public about the current facilities provided. This prevent disabled people (and the non-disabled) from having a bad perception of transport facilities.

# 5.2.1 Gap in-between train platform and the train door

Being able to access the city centre independently was the wish of the majority of the research participants e.g. as voiced by P1, P6, P8 (female, wheelchair users) and P3, P5, P7 (male, wheelchair users). However, wheelchair users often need assistance in passing across the gap between the platform and the train door in all rail services as the front wheels tend to slot in the gap. Figure 5-4 shows different sizes of gap and Figure 5-5 (a) shows an example of a wide gap and Figure 5-5 (b) shows a gap with level changes.



Figure 5-4 Different gap size in different LRT stations (a) a wide gap in Kelana Jaya Station (b) a small gap in Dang Wangi Station (underground)

Source: Author (2017)





Figure 5-5 Entering trains (a) a wide gap in ERL (Putrajaya & Cyberjaya Station) (b) a gap with level changes from the platform to the train in KL Monorail (KL Sentral Station)

Source: Author (2017)

Other than wheelchair users who faced difficulties in crossing the gap, a person using crutches, P20 (female) reported that she had on one occasion fallen when one of her crutches slipped into the gap, but she was fortunate that other passengers helped her. It is a positive sign that the public care enough to provide assistance, however, disabled people do not wish for 'care' but rather that their rights as citizens are recognised (Power, 2013) by having a seamless journey in using transportation services.

Regarding the gap between the train platform and train, IM8 (transportation operator) explained:

For KTM, the track is not only for passengers but for cargo as well.

The two different types of trains are sharing the same track. That's

why KTM can't reduce the gap [from train to the platform] because the cargo size is bigger. Komuter buggy size is small.

Therefore, massive upgrading work is needed to overcome the gap issue in KTM Komuter services which requires resources. Hence, access facilities upgrading in KTM stations are undertaken in stages, such as providing lifts and ramps but not including work to remedy the gap. In contrast, Prasarana (operator for LRT services) have monetary power since the company is owned by the government. IM8 comments, "We are 100% owned by MOF [Ministry of Finance]. That's our strength". In the meantime, the operator is working to minimise the gap between the platform and the train door in LRT Ampang Line by introducing a rubber fender. According to IM8, the current gap is between 50 to 115 mm (approximately 2 to 4.5 inches); however, a certain platform is on a curvature which does not allow further work to narrow the gap between the train doors and the platform. When the fieldwork was conducted, Prasarana and SPAD were initiating Railway Standard Malaysia for the first time and this is a positive development towards accessibility.

In the go-along journeys, it was observed that barriers as perceived by some OKU might not be experienced as barriers by other OKU even though they are using the same walking aid. For example, a 100 mm gap between the platform and the train door is a barrier to P10 (male, wheelchair user) where he needs assistance to get in or out of the train, but not a problem for P3 (male, wheelchair user) who is able to jump the front wheel of the wheelchair over the gap. The given example shows that whether an obstacle is considered as a barrier depends on the individual's abilities. Based on real-life experience with the research participants, it appears that disability

is experienced differently based on individual biological factors (e.g. age, bodily function, impairment) or personal biography, psychological factors (e.g. determination) and social factors (e.g. access facilities) (Reeve, 2004; WHO and World Bank, 2011; Meyers, 2014). It appears that impairment has a role to play in causing disability (Thomas, 2004) and not only the external factors as viewed by the social model of disability. The examples above illustrate how the interaction of individual bodies and social environments acts to produce disability (Watson, 2002).

Some OKU might need a travel companion all the way to the city or at least to get someone to provide assistance when required but some of them can access the city centre independently. It was also evidenced that even when the participant's companion does not physically assist the participant (in the case that a wheelchair user accompanied P11, a male, wheelchair participant), the moral support given by the companion while P11 faced barriers made him persist to find ways to continue the journey. Thus, moral support affected disabled people to overcome barriers psychologically. Frankly, I was at first hesitant when P11 informed me that he wanted to be accompanied by a wheelchair user. I was sceptical of how his companion would be able to assist P11 in overcoming physical barriers as they are both wheelchair users. However, the experience in the go-along journey with them illustrated that disability is also affected by psychological factors, as expressed by the bio-psycho-social model of disability. The companion often gave encouragement with positive words such as "you can do it" and "come on...just a little bit more" when P11 faced physical barriers. Moreover, it was observed that the companion had more experience in negotiating barriers and often gave P11 tips to overcome them.

In some stations, Security Police are placed to assist passengers in need. With a previous experience being assisted to cross the gap in ERL station, P7 (male, wheelchair user) complained:

The Security Police officer that assisted me to get in the ERL doesn't know the technique to provide assistance. He pushed my wheelchair and the castor [front wheel] slotted in-between the gap. He tried harder to push, and I almost fell from my wheelchair!

P7 urged that the Security Police be given training on how to assist OKU. The training to provide assistance would be beneficial for the general public as well and not merely for a specific assigned group (for the Security Police in this case). Therefore, anyone would confidently interact and assist OKU. Furthermore, all citizens are encouraged to interact as peers in social life and ideally support each other (Fraser, 2003). Yet, many of the non-OKU show ignorance, lack of awareness and fear of difference (Grewal *et al.*, 2002) and they feel awkward to interact and assist OKU, which leads to prejudicial actions and discrimination against OKU (*ibid.*).

### 5.2.2 Barriers in vertical access

Some physical barriers or structural barriers (as termed by Reeve, 2004) could make participation impossible for OKU. These barriers, or architectural disability (Goldsmith, 1997 in Hanson, 2004) include barriers in vertical access in the train stations (more barriers in building/architectural design are discussed in the next chapter). The right to freedom of access has been denied when OKU needed to

cancel his/her journey to a destination due to these physical access issues during travelling. Even though facilities such as lifts and escalators were provided in every LRT station after renovations were carried out in the old stations, not all the stations enable OKU to easily access their destination. For example, P10 (male, wheelchair user) once experienced a situation where a lift was under maintenance in one of the LRT stations and there was only a staircase to get down from the platform. He needed to choose whether to continue the journey by getting help from others to lift him on his wheelchair down the staircase or change his route and plan. After taking into consideration that the staircase is high and dangerous for him to be carried down, P10 decided to take the next train and stop at another station. Meanwhile, for P14 (male, powered wheelchair user), if the lift in the LRT station near his house cannot be used, he will just return home without continuing his journey as he considers that his powered wheelchair is too heavy to be lifted manually. He complained that there were a few times that the lift was unusable. Accordingly, P14 preferred to access KL city centre by accessible bus and manoeuvre his powered wheelchair within the city centre.

Freedom includes the ability to get what someone would choose (Alkire, 2005) without having to compromise safety. For example, by providing a stair lift (refer to Figure 5-6 in the next page) as well as a lift in all rail stations, P10 and P14 would have a better chance to proceed with their planned activities without being affected if the lift is malfunctioning or under routine maintenance. The proposed addition of a stair lift for vertical access options in the rail stations is not to burden the service provider but a recommended measure for granting freedom of movement for all. Hence, society needs to provide additional resources to meet the needs and

overcome the disadvantage that results from impairment (Bickenbach *et al.*, 1999 in Shakespeare & Watson, 2016). Therefore, enabling access will offer disabled people more capability. More capability means more opportunities for OKU to achieve the things that they value (Sen, 2011). On the other hand, P14 has more capability when he had the opportunity to take another option to access KL city centre from his house with an accessible bus. More issues on buses as a mobility tool are discussed in section 5.3.

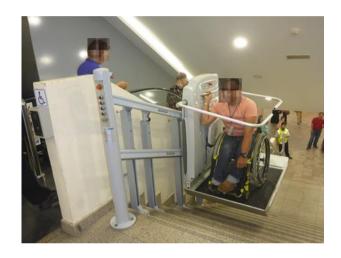


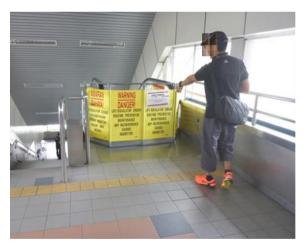
Figure 5-6 Stair lift provided to access Suria KLCC from the KLCC Station (subway)

Source: Author (2017)

From KLCC LRT Station to Suria KLCC which is located at the base of KLCC Twin Tower, a stair lift is provided attached to the staircase which is adjacent to an escalator (also refer to Figure 5-6). Having used the stair lift a few times, P3 (male, wheelchair user) claimed that the stair lift was moving too slowly and normally passers-by would stare at him until he reached the destination floor. P3 accepted the need for slow movement for the stair lift when he cautioned that, "If faster [the stair lift speed], a passenger is prone to fall". This example indicates that the problem is not of the stair lift (or technology) but a problem of social attitude. The feeling of

being stared at leads to discomfort in OKU (Bromley *et al.*, 2007) that hurt them psycho-emotionally (Reeve, 2004). However, the action of the non-OKU might be unintentional associated with 'expression of difference' (Grewal *et al.*, 2002, p.81). Nonetheless, this discomforting situation for P3 had made him prefer to use the escalator as he managed to conduct his wheelchair onto the escalator. However, he complained that a baluster recently installed in front of that escalator prevented him from using it further, but he admitted that, "It's for safety purposes".

In some circumstances, lifts, stair lifts and escalators are not valued as that important to people with impaired mobility as long as a staircase is provided. In the go-along journey with P19 (male, prosthetic leg), the escalator at Masjid Jamek Station was under maintenance (refer to Figure 5-7). As P19 was able to use the staircase, he just climbed down the staircase without searching for any lift.



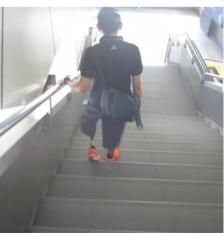


Figure 5-7 Vertical access in LRT station (a) escalator under maintenance (b) participant has the ability to use staircase

Source: Author (2017)

Likewise, P16 (male, amputee using single crutch) also did not have any problems climbing the staircase in the LRT station. He did not even bother to use the railing

provided at the staircase as shown in Figure 5-8 (a). By looking at P16, I realised that different people have different abilities and cannot be homogenised. P9 (female, walking unaided) also did not feel that climbing a staircase in LRT station was a burden for her. In fact, she preferred to use the staircase in our journey during fieldwork and even expressed her thoughts as, "Let the people more in need use the lift". Furthermore, railings were provided in every staircase at the rail stations that facilitated her movement in climbing the staircase as shown in Figure 5-8 (b).





Figure 5-8 OKU with mobility difficulties climbing staircase (a) the ability to climb staircase with one leg and a crutch without the need for railing (b) P9 climbing staircase provided with railing

Source: Author (2017)

These examples of 'not needing' to use a lift and escalator are because those facilities might not have a valuable 'characteristic' for the participants' mobility. The lift for example, does not have a significant characteristic for the participants who are able to use the staircase without any assistance. On the other hand, a lift or elevator is significantly valued by wheelchair users as a vertical mode of transportation. As discussed in 5.2.1, people evidently have different abilities and needs, depending on the individual's biological and psychological features, as well

as the environmental factors. Even if they have the same impairment, they might need different facilities or accommodations for their access solution (Shakespeare & Watson, 2016). A more advanced assistive technology (Meyers *et al.*, 2002) might be needed by other people that have similar impairments to P19, P16 and P9.

For KTM Komuter however, some of the stations are inaccessible, especially for wheelchair users, where no lifts or escalators are provided at all. In the go-along journey with P8 (female, wheelchair user), we booked an Uber to Bukit Badak Komuter Station, purposely to experience access from a different station other than Klang Komuter Station (previously experienced with P2) and Port Klang Komuter Station (previously experienced with P6). However, the station is not accessible for wheelchair users as passengers need to climb a pedestrian bridge to get to the opposite platform as shown in Figure 5-9.





Figure 5-9 Bukit Badak KTM Station (a) passengers need to climb the bridge to get to the opposite platform (b) inaccessible station entrance

Source: KLIA2 (no date a)

Bukit Badak Komuter Station is the next station after Klang Komuter Station. Therefore, we booked another Uber for Klang Komuter Station where P8 usually starts her KTM Komuter journey to KL city centre (see Figure 5-10 – Klang Komuter Station and Bukit Badak Komuter Station are marked with black dots).

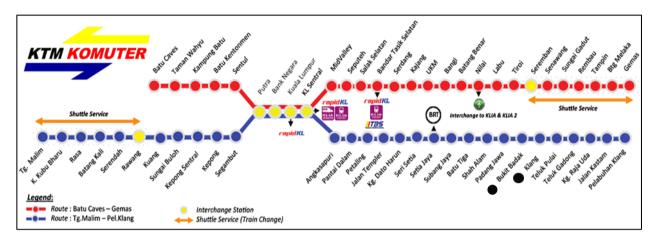


Figure 5-10 KTM Komuter route map

Source: KLIA2 (no date b)

Expecting that all KTM stations are accessible, P8 was shocked with what we observed in Bukit Badak. "I can't believe there's still an inaccessible station! What if OKU staying nearby needs a ride?" An inaccessible station appears to be a structural barrier that also affects OKU psycho-emotionally (Reeve, 2004) since it could make OKU lose their confidence in going for outings and exploring the city centre and other areas independently. That the inaccessible Bukit Badak Komuter Station did not allow disabled people to fully enjoy the services and facilities provided is contrary to the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) that promotes access without discrimination (UN, 2007).

The reason why Bukit Badak Station is not accessible was explained by the authority body as caused by budgetary constraints that are part of the challenges faced by

access providers. Financial constraints were the biggest problem highlighted by the transportation service providers, design implementers and the regulatory bodies in upgrading the existing access for OKU inclusion (further discussed in 7.1.3.1 on resources). For example, as explained by RG7 (transportation regulator):

The problem with KTM, the track existed ages ago...since the British colonial era. Bigger allocation [is needed] to upgrade for accessibility. When you want to renovate something, it's costly compared to designing something new with the facilities.

Huge investment is needed to make each line and station accessible to wheelchair users but practical and resource limitations make barriers difficult to resolve (Shakespeare & Watson, 2016). Providing facilities to include OKU access from the planning and design stage is more economical than renovating existing buildings or facilities. It is more cost-effective if the design provides a friendly environment for the greatest extent of users as proposed in the universal design concept (Mace *et al.*, 1991; Imrie, 2012).

According to one of the members of the National Council for OKU (male, prosthetic leg), while he was in the Transportation Committee of the Council, in 2010, KTM promised to upgrade all the stations by stages with the target of five stations to be upgraded per year. RG7 (transportation regulator) explained that the upgrading of KTM stations is based on priority where KTM prioritised stations with higher numbers of users and higher demands for facilities. However, he added that all KTM stations in urban areas have been upgraded and are accessible to OKU but Bukit

Badak Station is considered a small station with a small demand from commuters for that station.

Meanwhile, in most of the KL Monorail stations in KL city centre, it is disappointing for many OKU to see that facilities (stair lift, lift and escalator) are provided but that those facilities can be used only in certain stations. Most of the KL Monorail stations are multi-level and a few stations have direct access with shopping malls such as in the Imbi Station that has a covered link to Berjaya Times Square. It was observed that only stations linked to a shopping mall were accessible for wheelchair users. The most common issue complained about by the research participants was the inadequate vertical transportation from the train platform to the ground or street level. They claimed that they were not able to use the lifts, escalators and stair lifts as they were not functioning (P6, P8, female, wheelchair users). Some others viewed the facilities as abandoned and not being maintained (P5, P11, P12, male, wheelchair users). P8 claimed:

There was no lift and stair lift provided in 2013. Not at all. But now, all there [the facilities] but can't be used, [hence] it's better not to have it. If the facilities are there but we can't use, it's more frustrating!

P5 (male, wheelchair user) insisted on showing the evidence that the stair lift in KL Monorail station had been abandoned and was no longer operational (Figure 5-11). It was observed during the fieldwork that he preferred to wheel his wheelchair on the roadside and faced a longer journey to his destination (from Hang Tuah LRT Station to Berjaya Time Square) rather than being lifted by others to get into KL

Monorail train adjacent to Hang Tuah LRT Station. P5 felt that his body size would burden others who assisted him, after once experiencing being lifted by others. Nonetheless, the roadside journey invites other dangers since P5 was not able to get onto the pedestrian walkway as the kerb was too high.





Figure 5-11 P5 comparing ease of access (a) stairlift cannot be operated in KL Monorail station (b) P5 using road side for easier access

Source: Author (2017)

However, according to IM8 (transportation operator), the facilities are not damaged but have yet to be handed over by the contractor for a reason he cannot reveal. Therefore, KL Monorail is not authorised to operate them. Notification on the condition of these facilities (e.g. board notifications) with the predicted date of when those facilities will be open to the public might help to ease the frustration of OKU as the users. At least, the information may reduce the feelings of anxiety and uncertainty (Marston, 2002) for OKU in riding public transportation.

The time being taken by OKU to reach their destination on a journey is extended when they face obstacles to get down from the train to the ground level, particularly in the multi-level KL Monorail stations i.e. from the train platform to the concourse

area where ticket counters are located, and from concourse area to the ground or street level. P12 (male, wheelchair user), needed to be lifted to the concourse area with the help of staff and other passengers before one of the staff tried to operate the escalator from the concourse to the street level but failed to run it. Therefore, more waiting time was needed to get assistance from other incoming train passengers to lift the wheelchair. This isn't specific only to KL. Typically, the travel time for wheelchair users in London are longer compared to those who are able to walk, partly due to vertical access issues, particularly in the old stations (Ferrari *et al.*, 2014). Having said this, pamphlets are readily available in London containing information for an accessible journey (Transportforall, 2018) and hence facilitating the journey. However, there is no similar information readily available in KL.

Marston (2002) acknowledged that public transportation is all about anxiety, uncertainty, and waiting. However, the lack of facilities to enable OKU passengers to get up and down certain station levels had increased the time taken for a return journey to KL city centre, but not due to waiting for the transportation itself. Only part of the journey planned by P12 earlier was accomplished on the go-along journey, we only managed to go to one destination and cancelled other destinations due to the lengthy time taken in enabling P12 to access Low Yat Plaza, a famous IT gadget centre in KL. The most time-consuming activity was to enable P12 to reach the street level from Imbi Monorail Station platform. Other time-consuming activities were while facing barriers on the street level (discussed in Chapter 6).



Figure 5-12 Staff and passengers assisted in lifting wheelchair user in Imbi Monorail station

However, in a different KL Monorail station, the KL Monorail staff managed to operate the 'unauthorised' escalator to enable access for the wheelchair user (Figure 5-13). In allowing access for P6 (female, wheelchair user), the KL Monorail staff had negotiated the discretion to operate the escalator even though it was not authorised to be used. It was an advantage for P6; however, she had also compromised her safety by using the unauthorised facility for the sake of continuing the journey. Whatever the reason for the delay in handing over the facilities for vertical transportation in KL Monorail, it seems important that the responsible body expedite any process to enable access for all.





Figure 5-13 Effort to allow access for P6 (a) KL Monorail staff trying to operate the escalator (b) a staff escorting P6 and her husband going down through the escalator

In another case, the lift connecting KL Sentral to the NU Sentral concourse level that connects to the KL Monorail station was under maintenance. A Security Police officer assisted P12 in using the escalator to the next floor even though there were signs prohibiting wheelchair users from using the service (Figure 5-14). The act of the Security Police in assisting P12 indicates a positive attitude in allowing access for OKU. Yet, both were exposed to danger. In fact, if any accident happens, it will affect others using the escalator. However, safety risks could be reduced, and access could be granted for P12 if a stair lift is provided at the staircase as well, as extra means of access will provide options for OKU inclusion.



Figure 5-14 Wheelchair on escalator (a) Security Police assisting P12 on escalator (b) signs prohibiting wheelchair from using the escalator for safety reason

# 5.2.3 Lack of clear signs for facilities

Clear signage on OKU facilities appears to help OKU to access KL city centre with more confidence. However, some of the rail-related-facilities are not clearly visible to the users. For example, there is a lack of clear signage to emphasise the availability of accessible coaches in ERL stations, and lack of signage providing directions to the OKU toilet in the transportation hub, in KL Sentral. The lack of legible signs for those facilities could make OKU think that the facilities are not provided. I experienced the go-along journey with OKU from Putrajaya, P10 (male, wheelchair user) who was escorted by his wife. P10 drove his car and parked at Putrajaya & Cyberjaya Station. While in the train, it was observed that there was no specific sign for wheelchair users or OKU seats, however, there was a place for P10 to park his wheelchair even though it was without the safety belt that is usually

provided for the wheelchair user's safety (refer to Figure 5-15). After exiting the train, P10 said:

Sometimes there's a sort of plate to bridge the gap [between the train door and the platform] but not in the coach we have just ridden in. If I am not mistaken, the next coach to ours has it.



Figure 5-15 ERL experienced (a) coach without dedicated area for wheelchair (b) gap between the train door and the platform without the 'bridge'

Source: Author (2017)

Only then was it realised that the coach entered by the participants was not meant for OKU and that was why there was no OKU seat, no dedicated area to park wheelchair and no 'bridge' as mentioned by P10.

Likewise, P7 (male, wheelchair user) shared his experience entering ERL. He claimed that, "I faced a gap between the train door and the platform of about 6 inches [150 mm]". From these two cases, it is observed that there was a lack of clear signage showing the availability of OKU coaches in the ERL. However, if all the ERL coaches have a 'bridge' as mentioned by P10, it can also ease the journey of older people with sticks, parents with baby prams and visitors or tourists with luggage, considering that ERL is the most convenient means of transport to and from KL city centre and Kuala Lumpur International Airport (KLIA) in terms of journey duration.

Moreover, if all coaches are made accessible and safe for the users, it will support universal design proposals (Mace *et al.*, 1991; Barnes, 2011). By understanding the universal design concept, the misconception that universal design exclusively caters for the needs of OKU can be corrected (Kadir, Jamaludin & Rahim, 2012; Yusof & Jones, 2014). Regarding the gap issue discussed with IM8 (transportation operator), he was aware of the gap in the ERL and stated that, "Once the [ERL] door is opened, the extended platform will automatically extend". This explained about the 'bridge' that was mentioned by P10, but signage was lacking or maybe it was there but not adequate to inform passengers that only certain coaches are OKU-friendly.

Meanwhile, at the LRT stations, it was observed that the non-OKU passengers can also pass through the concessionary gate (Malaysian termed it as OKU gate) with an ordinary chip coin. Anyone with a concessionary fare is required to use the dedicated gate but the chip coin used specifically by OKU is not accepted if slotted into any other gates. This was not a problem for wheelchair users since they certainly need a wider gate and will straight away pass through the OKU gate. However, P2 (female, walking unaided) panicked when her chip coin was not accepted after being slotted a few times into the ordinary gate until I suggested her to slot the chip coin at the OKU gate. This experience shows the importance of having a notice informing users that concessionary chip coins could only be used in a dedicated gate(s). With this information, OKU could get directions to access the

correct gate. In fact, the staff in the ticket counter could disseminate the information directly to OKU as the concessionary fare can only be purchased at the ticket counter but not at ticketing machines. Thus, the incident of having unnecessary panic among OKU as happened to P2 could be avoided.

Another barrier in the LRT station observed was the lack of a ramp or kerb cut for wheelchair access provided at the drop-off/pick-up point in Alam Megah LRT Station as shown in Figure 5-16. P8 (female, wheelchair user) and I surveyed the station building and we managed to find access for wheelchair users near the OKU parking, but the location is far from the pick-up point. Providing signage to show the ramp location from the station building would benefit OKU passengers. Yet, signage was only provided to show OKU parking for people driving in and out of the station. Nevertheless, having OKU parking with a ramp adjacent to the station would facilitate OKU drivers. More parking issues will be discussed in section 5.4.1.





Figure 5-16 Drop-off and pick-up point in Alam Megah Station (a) high level of kerb without ramp or kerb cut (b) ramp provided near OKU parking but away from the pick-up point

Source: Author (2017)

Besides physical access, access to information and communication such as the clarity of information on the service provided could enable OKU to fully enjoy all human rights and fundamental freedoms as recognised by UNCRPD (UN, 2006). As this section discusses rail lines issues and the accessibility of the facilities in the stations, more discussion on the clarity of signage in other buildings will be discussed in the next chapter.

# 5.2.4 Material used for seating and flooring

It is important for the service providers to carefully select suitable material to be used in transport-related facilities for users' comfort and safety. P9 (female, walking unaided) felt that the surface of the seats in LRT Ampang Line was slippery (refer to Figure 5-17). With her weak muscles on the right side of her body, P9 easily slid from the seat when the train was cornering. The material used for the LRT seat is expected to be chosen for easy maintenance and to be designed to cater universally for diversity of users with different abilities other than focusing on maintenance aspects. Universal design aims to improve the physical and social environment, where Barnes (2011) refers to it as a design for all approach, to address social inclusion and human diversity.



Figure 5-17 Different kinds of materials used in different rail services (a) slippery material as claimed by P9 in LRT Ampang Line (b) seat in LRT Kelana Jaya Line (c) cushioned seat in KTM Komuter

Meanwhile, P20 (female, crutches user) had more concern about the flooring finishes in the rail stations. P20 shared that her crutches slipped a few times in LRT stations especially when the floor was wet and slippery. She walked with extra care on a wet surface as shown in Figure 5-18. On a positive note, the readiness of cleaning staff in mopping surfaces to avoid slippery floors indicates that preventative measures to avoid danger to the public had been made. However, extra workers might not have been needed if the choice of floor material had been more carefully made while in the design stage.



Figure 5-18 Wet and slippery floor that invites danger to those with mobility difficulties

#### 5.2.5 Lack of staff

The lack of staff in rail services may affect the smoothness of a journey for OKU especially if they are travelling alone. When P12 (male, wheelchair user) was denied easy access from the monorail platform to the ground level in Imbi Station, he needed to be carried down the staircase to the concourse area. For this, it was necessary to wait to get assistance from the staff since at the time the KL Monorail staff was limited (only two), and one of them could not leave the ticket counter. Having dedicated staff or Security Police in all stations to give assistance for OKU in need might better promote OKU's inclusion in KL city centre.

Any facilities in the rail services that are supposed to encourage OKU inclusion would not provide benefits if they cannot be enjoyed by OKU users in practice. In KL Monorail there was a special low counter for OKU signposted as the Priority Counter located next to the ordinary counter in KL Sentral (Figure 5-19). As a first timer to KL Monorail service in our go-along journey, P12 needed some information from the counter. However, there was only one member of staff serving customers (at the ordinary counter, next to the Priority Counter) while nobody was available to serve P12. P12 just waited at the Priority Counter without being prioritised, and when no other customer remained to be served at the ordinary counter, he went to the ordinary counter to get the information.



Figure 5-19 KL Monorail Customer Service Counter in KL Sentral (low counter)

Source: Author (2017)

It is undeniable that there might have been some constraints in providing staff at the Priority Counter for some reason on that particular day. However, courtesy from the staff to acknowledge P12 at least with eye contact or a smile while serving other customers might reduce P12's feeling of being ignored. P12 did not mention that he felt ignored but his facial expression while looking at me waiting (and observing)

was explicit: he was not satisfied with something. More issues on the height of information and ticket counters will be discussed in building design barriers in Chapter 6.

### 5.2.6 Summary of the rail-related services

In brief, from the go-along journeys, it was observed that the rail services facilitate OKU's mobility to KL city centre more than they create barriers. Many facilities have been provided and benefit OKU passengers in trains and stations i.e. the concessionary fares for OKU, priority seats, priority ticket counters, special gates, lifts, escalators, stair lifts, ramps, staircases with railing and the OKU toilets. However, not all stations provide all facilities while some stations are not accessible at all. Meanwhile, the mechanical facilities provided i.e. lifts and escalators were often claimed to be under maintenance and could not be used by OKU. The gap between the platform and the train door is a hazard for OKU especially for wheelchair users and those with sticks and crutches. The condition of the rail-related facilities that support OKU's inclusion in KL city centre are summarised according to different rail services as in Table 5-3 (on the next page).

There are service providers upgrading the existing rail stations for better accessibility that benefit OKU passengers. However, for upgrading the existing facilities, lack of finance is the biggest constraint faced by the non-governmental provider i.e. for KTM Komuter. Therefore, stations with higher demands and stations in urban areas are given prioritisation for upgrading.

After discussing issues related to the rail lines and facilities in the train stations, the next section will move on to discussion of access issues that OKU faced in using buses, bus stops and the bus terminals.

Table 5-3 Condition of the rail-related-facilities for OKU inclusion

Facilities	Light Rail Transit (LRT)	KTM Komuter	Express Rail Link (ERL)	KL Monorail
Priority seats for OKU	Claimed to be slippery in LRT Ampang Line	Provided	Not observed since research participants were not in the accessible coach	Provided
Low ticket counter	Not provided	Not provided	Not provided	Provided, but no staff in KL Sentral Station
Priority counter/ concession counter	Provided	Provided	Provided	Provided
Gate for OKU access	Provided	Provided	Provided	Provided
Lift	Often claimed to be under maintenance by the participants	Provided, but only in upgraded stations	Provided	Provided, yet to be operated
Escalator	Often claimed to be under maintenance by the participants	Provided, but only in upgraded stations	Provided	Provided, yet to be operated in certain stations
Stair lift	Not necessary since lift and escalator are provided	Not provided	Not necessary since lift and escalator are provided	Provided, yet to be operated
Ramp	Provided	Provided, but only in upgraded stations	Not necessary	Not provided
Staircase with railing	Provided	Provided	Provided	Provided
OKU toilets (discussed in Chapter 7 on building design barriers)	Provided	Provided	Provided	No specific OKU toilet signage. Wheelchair user cannot access the toilet door at biggest cubicle
Extended platform to bridge the gap between platform and train door	Not provided	Not provided	Provided at certain coaches	Not provided
Concessionary fares	Provided	Provided	Provided	Provided

# 5.3 Access issues in buses, bus stops and bus terminals

Accessible buses are a significant mobility tool for OKU's inclusion in KL city centre. In this introduction of the related bus services, this section starts with highlighting the facilitators offer for OKU prior to discussing the barriers. One of the criteria for an accessible bus is that it has a mechanism to allow access by wheelchair users, without the necessity for the person to be manually transferred to the bus seat, either by using a manually flip out ramp or with a hydraulic lifter. In KL and Klang Valley area, however, only accessible buses with manual flip out ramps are offered. The bus driver will extend out the ramp and assist the wheelchair user to access the bus (refer to Figure 5-20).





Figure 5-20 Example of accessible bus with manual flip out ramp (a) accessible Smart Selangor bus (b) accessible hop-on-hop-off bus

Source: Author (2017)

In an accessible bus, there is a dedicated area to park a wheelchair, usually supplied with a seat belt and/or grab rail. The stop button is also provided within the wheelchair user's reach. When the wheelchair area is not in use, the area provides additional space for standing passengers. Meanwhile, for those without wheelchairs, a few seats are provided for passengers with reduced mobility as shown in Figure 5-21 (b).



Figure 5-21 Facilities in an accessible bus (a) dedicated area to park wheelchair with a grab rail provided (b) priority seating for passengers with 'reduced mobility'

Source: Author (2017)

A low and flat bus floor (Figure 5-22) not only makes access easier for OKU passengers but for those pushing baby prams and older people as well. The low floor bus is an example of a bus that is designed universally. Meanwhile, in the conventional high deck bus, wheelchair users need to be assisted by more than one person to transfer them to the bus seat.





Figure 5-22 Low floor bus (a) no other steps as barrier as OKU entered the bus (b) the ramp is folded in when not in use

To support OKU mobility, the main bus service covering KL and Klang Valley has provided accessible buses with a 50% discounted fare for OKU passengers. RG7 (transportation regulator) explained that:

An operator like RapidKL, they had already applied [the concessionary fare]. For buses, our Act [the Land Public Transport Act] has the provision that OKU, older people and school children get 50% discounts.

RG7 added, "There's a special card for OKU discounts, but the OKU needs to register with the operator to avoid misuse of the discount". In order to register with the transportation operators, OKU are required to show their OKU card issued by the Department of Social Welfare Malaysia for discount eligibility.

The introduction of public transport concessionary fares and other best practice in promoting inclusive and accessible transportation reflects the providers'

commitment to the social model of disability. The social model of disability takes the view that it is the society and environment that create barriers to disabled people but not their impairment per se (M.Oliver, 1990; Barnes & Mercer, 2004). Positive support from society for OKU access could lower environmental and social barriers for OKU inclusion. Still, it appears to be that the medical model is used in determining who qualifies as disabled (Zhuang, 2016).

#### 5.3.1 Limited number of accessible buses

The introduction of accessible buses to transport OKU to KL city centre is a huge relief for OKU, especially for wheelchair users. Other than the main bus operator, there are a few other bus services, but they do not provide access facilities for wheelchair users. Accessible bus services are limited to certain routes as claimed by P18 (male, powered wheelchair user). He depended very much on an accessible bus that enabled him to get in and out of the bus with his powered wheelchair without the need for being lifted by others. For this reason, P18 chose to rent a house near the accessible bus route that enabled him to be independently mobile. However, according to an individual activist, R4 (male, wheelchair user), the provider changed the route for accessible buses without notice. The statement from P14 (male, powered wheelchair user) also provided support on this issue as he claimed, "Last time it was there [nearby his house] but now it's gone and changed to a different company...not accessible".

The limited supply of accessible buses causes long waiting times for OKU who commute to KL city centre. P14 (male, powered wheelchair user) complained, "Last

time, I only waited for about 15 to 20 minutes for an OKU bus but now I have to wait for about one hour...really tiring". Meanwhile, R4 (male, powered wheelchair user, individual activist) shared, "I have experienced waiting for an OKU bus from morning to noon...until exhausted, I just went home and slept". The bus service was denying OKU access to activities they wanted to participate in when R4 felt exhausted by waiting. Indirectly, OKU discrimination took place by preventing inclusion in the city centre.

Limited numbers of accessible buses and the lack of accessible bus routes could potentially make OKU refuse to use the service. Some of them might have little confidence in the bus service because they either had a bad experience themselves or heard bad reports from what others had experienced. R6 (female, powered wheelchair user, OKU representative) revealed that she was not confident with the bus service when she shared the following comments:

If I were to do a spot check on bus services, most likely I'll be abandoned [laugh]. I'll make sure that the van [mobility van provided by her office] is on standby for me. If not, I might be stranded [laugh].

Another bus service in KL is provided by the hop-on-hop-off buses that stop at 23 different places covering the main tourist attractions as shown in Figure 5-23.



Figure 5-23 KL hop-on-hop-off route and bus stop indication

Source: Myhoponhopoff (2018)

The hop-on-hop-off buses stop near the specific attractions but other buses in KL stop at the bus stop on the roadside. This service mainly caters for tourists. Hence, the fares are much more expensive compared to the RapidKL city shuttle service. The standard fare for 24 hours is RM55 for adults (approximately GBP10) and RM30 for children (approximately GBP5.50) while for Malaysian citizens, the fare for adults is RM25 (approximately GBP4.50) and RM15 for children (approximately GBP2.70) (Myhoponhopoff, 2018). The fare is considered expensive for the locals even at the citizen rate. P10 and P11 (male, wheelchair users) expressed their willingness to pay if the service is proven to facilitate access to KL attractions. Their willingness to pay an expensive amount to access such service indicates that OKU appreciate and

enjoy visiting places and significant attractions. Nonetheless, access limitations stunted their excitement to explore attractions in KL.

During two days of experiencing the hop-on-hop-off service with different research participants, it was observed that there were four buses operating but only two of them were accessible. It was necessary to wait for the arrival of one of the two accessible hop-on-hop-off bus to convey us to the next destination (bus 1 and 2 were accessible, bus 3 and 4 were not). Since a bus was scheduled every 30 minutes, if the second bus was missed, it would be necessary to wait for at least an hour to re-ride the first bus. P10 (male, wheelchair user) commented that, "We came with that bus, after a long time waiting for an accessible bus, the same bus fetched us".

The lack of accessible buses led to restriction of opportunities for OKU to enjoy the city centre to fullest, whereas many other places can be reached within a limited time with accessible bus services. The above examples experienced by the goalong participants and OKU representatives demonstrate that the current bus services do not efficiently serve OKU mobility in travelling to the city centre.

From a different perspective, providing OKU access was seen as "a waste of resources" by RG7 (transportation regulator) when OKU, especially wheelchair users, were hardly seen using bus service. When interviewed on the limited number of accessible buses, RG7 claimed that there is low demand from wheelchair users for bus services as he claimed that:

Based on my observation, the visually impaired are the highest number of OKU that ride public transport. A wheelchair user is hardly seen at one in a month. [...] The most vocal are the wheelchair users, [claiming that they] can't access the bus, can't access the train, [...] but in terms of using, they are the lowest numbers.

However, the low numbers of wheelchair users taking the bus or train does not indicate that there is low demand for the service. The question of 'why' they are not riding the bus seems important to be given attention. Furthermore, the lack of visibility of wheelchair users in the urban environment could indicate the level of accessibility (Frye, 2011). Fewer wheelchair users in the urban area suggests that there is a greater probability that the area is not accessible. Moreover, it was noticed during the fieldwork that the lack of wheelchair visibility was not merely caused by the buses but related to the connectivity of the street level environment which will be further discussed in Chapter 6.

Based on RG7 observations, there is a possibility that awareness of the importance for a seamless journey in using transportation for OKU inclusion is still low among the regulator bodies and access providers. There is also a possibility that these parties are not aware and do not recognise the importance of OKU having mobility to trigger a wider range of resources and efforts. OKU, especially wheelchair users, are not often visible in using public transportation, hence, access facilities provided are seen as underutilised such as claimed by RG7. However, other than disabled people with physical impairments, there are also disabled people with invisible disabilities or hidden disabilities such as those with sensory disability (e.g. imbalance). Hence, accessible transport helps to ease their journey as well.

OKU might want to avoid trouble if they know or believe that any facilities or places are not accessible. Hence, they are not visible because of accessibility problems, and so their needs are overlooked by the responsible bodies; this situation indicates a vicious circle. On the other hand, being visible frequently in public could increase public awareness of what is lacking in the transportation system by witnessing the barriers that OKU are struggling to face, and more recognition of OKU's needs could be worked out. For instance, in designing suitable choices of material for the facilities to be usable by all, to the greatest extent possible, as proposed in the universal design concept. Frequent appearance in public might also help to reduce the stigma that OKU are 'abnormal'. However, in trying to be visible in public, there is a question of who will take the responsibility if the inaccessible environment poses danger that harms them. Nonetheless, for P12, sacrifice is needed for raising awareness and for access improvement as:

I don't mind if people carry me on my wheelchair to access places I wanted to go. Yes, it's dangerous [but] I don't mind. When people see me being carried, then only they know that many places and facilities are not useable...not accessible by OKU...then only they are aware [that] proper access needs to be provided.

# 5.3.2 Lack of access facilities maintenance in accessible buses

In the limited number of available accessible buses, it was also observed that there was a lack of maintenance of the access facilities i.e. the bus door for wheelchair access and the flip out ramp. Experienced with the hop-on-hop-off bus, the first bus

was accessible, but the driver and the ticket inspector needed to work out how to flip the ramp using a lever as shown in Figure 5-24 (a).



Figure 5-24 Maintenance issue in accessible buses (a) the driver trying to flip out the ramp using a lever (b) bus driver explaining the damaged door for wheelchair access to OKU passengers

Source: Author (2017)

When we wanted to go to the next destination from the stop for the first attraction, the next bus came but it was not accessible since the bus was not provided with a ramp for OKU access. After waiting for about half an hour, the next bus came but the accessible entrance (back door) was not in order. The driver was keen to get down from the bus and explain to OKU passengers the condition of his bus, as shown in Figure 5-24 (b). It was revealed that the door malfunction had lasted for about four months without any action being taken by the operator despite it being reported. Then P11 (male, wheelchair user) and me continued to wait for the arrival of another accessible bus, but at last P11 suggested to get an Uber to the next destination, Tugu Negara (National Monument), since we had waited for about 70 minutes and there was no guarantee that the next bus would be accessible.

Physical access for OKU's inclusion in KL city centre does not seem to be given as high a priority as it should. Hence, budget allocation for OKU inclusion was also not a priority, including finance for maintenance purposes on transportation-related facilities which is another significant allocation neglected by service providers. It is deduced that in terms of distribution, the allocation for accessibility was not effectively budgeted. This might be the reason that OKU faced transportation barriers such as a defective door in a supposedly accessible bus.

### 5.3.3 Inaccessible bus stops

It is advantageous that detailed consideration be given from the planning and design stage in providing transportation facilities, for example, in the issue of the high kerb without a kerb cut at bus stops. Extra costs could be avoided if the awareness to provide access for all users had been in mind from the initial stage of design (Kose, 1998).

Inaccessible bus stops are a common problem in KL city centre. The kerb height is considered too high for a wheelchair user to independently push the wheelchair to or from the street level (see Figure 5-25). Generally, in KL, the pavement and a bus stop are usually flush/same level. The average height from the street level is 7–9 inches (180–230 mm). However, it was observed that most of the bus stops were not provided with kerb cuts or kerb ramps, or if provided, they were at the end of a stretch of pedestrian walkway (pavement) reaching to a driveway.

# According to CL2 (KLCH architect, access audit trainer):

A kerb cut is supposed to be somewhere there [near the bus stop]. Or else, they [wheelchair user] need to get to the end...near the driveway, get down [to the street level] and turn back [to the bus stop]. That's the way they can do it for now.



Figure 5-25 Example of bus stop without kerb cut in KL city centre (a) hop-on-hop-off bus stop at KL Tower (b) general bus stop in front of KLCH

Source: Author (2017)

CL2 further added that one of the ideas for KLCH was to have a certain height of kerb so that the ramp from the bus can be laid direct to the bus stop level. The ramp is ideally to be flipped out to the bus stop, so that OKU who are wheelchair users can wheel in and out independently since the gradient is gentler or even flush with the kerb as shown in Figure 5-26 (example from European country).



Figure 5-26 Ramp landed on bus stop get a gentle gradient

Source: Peat (2015)

CL2 also explained that Malaysians used to park their vehicles on the pedestrian pavements. The high kerb is also to prevent cars from parking there but made it difficult for OKU to climb the kerb. RG7 (transportation regulator) claimed that:

There's no standard kerb height from the local authority at the moment. There's even one feet height! Some kerb heights are the same level as the bus floor, some [height] as if you need to climb one step up or down.

It was common to see that the area where buses are supposed to stop to take up passengers were occupied by vehicles parked at the bus stop as in Figure 5-27. Consequently, bus drivers need to stop where possible to take up passengers. The attitude of the drivers who parked their cars in front of a bus stop shows that there is a lack of awareness among the public on the importance of accessibility, especially for OKU using wheelchairs to access a bus.



Figure 5-28 Bus stop abused with cars parked in front of the bus stop

In another experience with a different participant, a bus driver needed to stop earlier before reaching the bus stop since there were two cars parking at the bus stop. Since the road is narrow, he stopped without allowing adequate space for the ramp to be flipped out. Nevertheless, he made the effort to help the wheelchair user to get into the bus without using the ramp by just pushing it up from the street level into the bus entrance as in Figure 5-28.



Figure 5-27 Example of the effect of inaccessible bus stop

Source: Author (2017)

Noticing the problem of the car drivers' attitude, RG7 (transportation regulator) agreed that there is a need to improve the bus lane access points by imposing strict enforcement on the offenders and thought of collaborating with the local authority to solve the issue:

Bus lanes are always obstructed by cars parked on them. We want to empower our enforcement power on this with collaboration between SPAD and KLCH. At the moment, we can only penalise buses but not the private vehicles.

However, in the fieldwork, it was observed that bus drivers usually stopped their bus not too close to the kerb even though there were no other vehicles parking in front of the bus stop. One of the possible reasons for their action is possibly to provide space for wheelchair access directly to/from the street level since the bus stops were rarely provided with a kerb ramp.

According to R1 (wheelchair user, OKU representative), bus stops are also being used as a drop off point for some OKU when someone gives them a lift. Therefore, she felt that it is important for a kerb ramp to be provided at bus stops to ease wheelchair users to get off at the bus and continue their journey on the pavement. R1 shared that discussion had been made with KLCH on the issue of inaccessible bus stops but had no solution yet when she commented:

There are accessible buses, but the corresponding bus stops are not ready yet. The bus stop specification comes under KLCH but to get KLCH to make all bus stops accessible is a big headache.

Based on what RI claimed, it seems that there was something blocking the initiation of accessible bus stops. However, on the positive side, this indicates that there is a room for OKU participation in the KLCH decision on improving access for OKU's inclusion. When people are given the opportunity to participate in decision-making, the decisions are more likely to be seen as just (Cohen, 1985).

Focus on OKU's feedback on issues related to accessibility helps to tackle issues on the built environment efficiently since they are the persons who experienced the barriers (Imrie & Kumar, 1998; Kadir & Jamaludin, 2012b). OKU are considered as the experts on barriers as they experience the barriers themselves (Bailey *et al.*, 2015). Being heard as a citizen also shows that OKU are being recognised in society.

Due to financial constraints faced by access or service providers, it seems important to prioritise projects to be undertaken. On the other hand, the hierarchy of the importance of certain requirements on OKU access could be detailed to achieve the second-best option, for instance, when OKU representatives demanded that all bus routes to KL city centre be accessible as all OKU have the right as a citizen to enjoy the freedom of movement. Yet, some degree of tolerance is suggested when it comes to financial limitations to provide physical access as shared by IM14 (implementer, KLCH urban transport engineer):

I told them [OKU representatives], if you want to make an access route bus possible to wheelchair, you must prioritise. You tell me, which is the most frequented or used bus route. Let's say they often go to the GH [General Hospital], we will check all bus routes to the GH and prioritise the routes to be accessible for OKU.

Yet, there is no mutual decision on the issue of accessible bus routes even though this matter has been discussed for quite some time. IM14 further complained that:

OKU representatives claimed that it's their right to go anywhere they want. [They said] we want everywhere [to be accessible], you are limiting our movement. Then they quote their OKU Act and their rights. [Hence] there's no solution until now.

Therefore, until now KL still does not have a specific accessible route. Nonetheless, more communication among the providers and the end users (OKU) in prioritising accessible bus routes seems important since financial constraints are the major challenge faced by the providers in providing comprehensive accessible services. Even Singapore, a developed country, introduced accessible bus routes by prioritising routes with a high concentration of disabled people, for instance, in front of a rehabilitation centre (Frye, 2011). Participation and engagement of other stakeholders, such as from the access consultants and academics, might help in achieving a better access for OKU inclusion to the city centre. Both the providers and users might need to compromise on certain things, otherwise, negotiations will stall, and an idea will be just an idea without any solution being implemented.

Meanwhile, a project funded by the federal government was a relief to access providers (further discussed in 7.3.1 on resources). According to IM14, KLCH was given RM16 million (GBP2.9 million) a year for three years. However, the three-year allocation ended in 2015. IM14 added that, "The area that is now OK is only those

under NKEA [National Key Economic Areas]". With regard to transportation, the upgrading of bus stop facilities, including kerbs and pavements, was included in this three-year project. Yet, the height and design of the kerb involved did not satisfy OKU. IM14 admitted that the absence of the kerb cut at bus stops was faulty and wheelchair users are the most affected group. However, at certain junctions to cross driveways (for cars entering a building lot), KLCH have provided raised crossing for the pedestrian (further elaborated in 6.3.2). Therefore, a wheelchair user could take the advantage of the raised crossing to get down to the street level (from the bus stop level).

Back to the kerb height issue, IM14 (implementer, KLCH urban transport engineer) responded to OKU dissatisfaction:

After so many years of fighting with them [OKU representatives], then only I realised what they mean by 'not suitable'. It's actually suitable. The flipped ramp can rest at the pavement. And according to the SOP [standard operating procedure] of RapidKL, it should be driver assisted [to access the bus].

However, returning to the issue of the limited number of accessible buses as discussed in 5.3.1, while the fieldwork was conducted, few buses had a ramp that can be flipped to rest at the pavement as in Figure 5-24 and Figure 5-26.

Disabled people can be independent and have choice and control over their life when barriers are removed (Oliver, 2004; Alkire, 2005). As discussed, most of the go-along participants wished to be independent. P7 (male, wheelchair user) declared that, "We want to be independent. We want to do it ourselves". The ability

to use access facilities independently makes OKU feel that their rights as citizens are recognised (Power, 2013). However, according to Barnes (2011), support and assistance from others are the primary key to independent living and access for all is only possible with society involvement. Though, a properly designed facilities with access thought could minimise OKU's need for assistance from others.

#### 5.3.4 Bus driver's attitude/service

Society's positive attitude towards OKU is one of the factors that could determine the success of OKU inclusion in the city centre. Otherwise, it can contribute to psycho-emotional disablism as mentioned by Reeve (2004). According to IM8 (transportation operator) and RG7 (transportation regulator), the SOP stated that the driver is supposed to help OKU to get in and out of the bus and should not allow other passengers to flip the ramp for OKU access. In fact, Prasarana has the Bus Academy to train the Customer Service Officer (bus driver) where they have a simulation for assisting OKU into the bus. However, in practice not all bus drivers get down from the bus to assist OKU.

In the go-along journey with P14 (male, powered wheelchair user), the bus driver stopped the bus but ignored the presence of the OKU. Considering that P14 was the one who waved for the bus as shown in Figure 5-29 (a), I was confident that the driver had noticed P14 was a wheelchair passenger. When the driver did not get down to assist P14, I told the driver that there was an OKU passenger, but he showed an angry face and still ignored P14. So, my fieldwork assistant flipped the ramp and assisted P14 into the bus. The same situation occurred when we alighted

from the bus; the driver just remained in his seat. It was assumed that the driver acted in this way because he could see P14 was accompanied by travel companions.







Figure 5-29 Bus experience in the go-along journey (a) P14 waving to stop the bus (b) fieldwork assistant flipped out the ramp (c) fieldwork assistant pushing P14 wheelchair to access the bus

Source: Author (2017)

During the fieldwork period, there were seven participants commuting on buses; however, this was the only driver who refused to assist a wheelchair passenger accessing the bus. Even though it seems an isolated case, it appears that discrimination against OKU does happen. This case could be an example that society and the environment are disabling OKU, rather than their impairment (M.Oliver, 1990).

Meanwhile, intercity OKU passengers need to be lifted by others to enable them to access the express bus that still uses a high deck with steps. According to RG7 (transport regulator), in intercity buses, a low floor bus is not suitable considering the bumpy road conditions in rural areas. Moreover, extra space under the passenger deck is needed for luggage storage.

P11 (male, wheelchair user) shared his experience that an intercity bus driver told him, "You are troubling others". Luckily, other passengers who were queuing promptly helped him to access the bus and stored his wheelchair in the baggage compartment without being asked. This indicates that there were different recognition levels among the public towards OKU. By recognising human diversity, OKU will not be humiliated for having the need to be assisted by others (Brighouse & Robeyns, 2010) and could choose the type of transportation they wished for (or the most economical for them).

### 5.3.5 Summary of the bus-related services

Overall, from the issues highlighted on bus services for OKU inclusion in the city centre, it is evident that currently there are insufficient numbers of accessible buses to cater for the needs of OKU passengers. However, the accessible low floor buses with a flip out ramp, wheelchair parking space and priority seats facilitate OKU mobility to the city centre. In addition, concessionary fares for OKU are also provided. The majority of wheelchair users choose an accessible bus service since they do not need to be transferred to the bus seat when using this transport mode. However, the numbers of accessible buses are limited, hence, they do not cover all routes to KL city centre. Meanwhile, the majority of the bus stops are placed on high kerbs without kerb ramps or kerb cuts. Inadequate financial resources constrain the acquisition of more accessible buses to supply all routes to the city centre. Participation between OKU representatives and the service providers to discuss issues on bus services and bus stops had taken place but no common solutions were provided.

From the research observations and experiences shared by the participants, the comparison of bus services facilitating OKU inclusion in KL city centre are summarised in Table 5-4. The following section discusses private transportation and other modes of transportation services used by OKU to access KL city centre.

Table 5-4 Comparison of bus service for OKU inclusion in KL city centre

Facilities/ service	RapidKL bus	Hop-on-hop-off bus	GoKL bus	Smart Selangor bus	Express bus
Ramp	Provided in accessible bus	Provided in accessible bus	Provided	Provided	Not provided
Priority seats	Provided	Not provided	Provided	Provided	Not provided
Wheelchair parking	Provided	Provided	Provided	Provided	Not provided
Low floor	Yes	Yes	Yes	Yes	No - under high deck bus is needed for luggage storage
Routes/ destination	Different routes for city shuttles, trunk shuttles and local shuttles	23 tourist attractions in and adjacent to KL city centre	Feeder bus to transportation hub within KL city centre	Feeder bus to transportation hub within Selangor state	Intercity
Signage clarity	Yes	Yes	Yes	Yes	Yes
Frequency	10-30 minutes depending on services as either local or trunk shuttles	Every 30 minutes but not all buses are accessible	5-10 minutes	15-20 minutes	Depends on destination
Operation hours	6 am-11 pm (until 12 midnight on Sunday and public holidays) for local shuttles 6 am-11.30 pm for trunk shuttles	9 am-8 pm	6 am-11 pm 7 am-11 pm on weekends and public holidays	6 am-10 pm	Not observed
Maintenance of OKU facilities	Good	Lack	Good	Good	Not observed
Fare	From RM0.50 to RM2.50 according to zones	Foreigner: RM55 for adults (approximately GBP10) and RM30 for child (approximately GBP5.50)  Malaysian: RM25 for adults (approximately GBP4.50) and RM15 for child (approximately GBP2.70)	Free	Free	Depends on destination
Driver's attitude/ service towards OKU (based on fieldwork)	One person ignored OKU in wheelchair while another passenger helped to flip out the ramp (observed in the fieldwork)	Willing to help	Willing to help	Willing to help	Some are complained about as having bad attitudes
Concessionary fare	Provided	Provided	Not applicable	Not applicable	Not provided
Bus stop facility	Majority with high kerb	Majority with high kerb	Majority with high kerb (sharing the same stop with RapidKL buses)	Some have ramp provided from street level to the bus stop	Not observed

# 5.4 Private transportation and other transportation services

In addition to using public transport, OKU mobility to KL city centre is made possible with their own (or family owned) transport or by getting a lift from others. There are also private shuttle van services, either provided by their employer or by the organisation of places OKU visited (e.g. shuttle van provided by KL Tower transporting visitors from the main gate), and mobility van services that enabled wheelchair users to access the transport without having to be manually transferred on board. Traffic congestion and the lack of OKU parking space are the barriers faced by OKU who use their own transport to KL city centre. Meanwhile, the need to be transferred from wheelchair to vehicle seat provided a barrier for those riding in other transportation services such as a shuttle service not equipped with accessible features. Finally, the scarce numbers of mobility van services will be discussed as the last point as a barrier in allowing access and mobility for OKU inclusion through a variety of transportation modes.

Generally, participants who are driving their own transport to KL city centre either have the ability to transfer from their wheelchair into the car or motorcycle on their own (see Figure 5-30), or participants have a mobility impairment but are able to walk with or without aids. However, having any of these two conditions does not mean that they possess a means of transport. It still depends on their monetary ability to own a car, and a fit bodily condition to own an OKU car licence that needs medical endorsement. However, some OKU purposely prefer to use public transport for their own reasons.







Figure 5-30 Wheelchair user (P7) getting in the car to drive (a) able to transfer from wheelchair (b) able to fold the wheelchair (c) able to lift the wheelchair to the back seat

Source: Author (2017)

# 5.4.1 Traffic congestion and the lack of parking space

Traffic congestion is one of the reasons for OKU not choosing the city centre as their social destination. For example, for P17 (male, walking unaided, car owner), even though he works in the middle of KL city centre, for socialising in the weekends he prefers to meet up friends within his local area in Bangsar to avoid traffic congestion. He hardly ever drives to work but commutes using LRT near his house. Similar to P17, P3 (male, wheelchair user) also owned a means of transport (a three-wheeled motorcycle) (Figure 5-31), but chose to ride on public transportation to KL city centre as he commented:

If I ride my motorcycle to the city centre, I have to face the traffic [congestion]. Moreover, it's hard to park. Parking for an OKU motorcycle with a wheelchair compartment [refer to Figure 5-31] is not provided at all. That's why I go for public transportation; no need

to think of the traffic and parking hassles. Just get in the LRT and you will arrive.



Figure 5-31 OKU motorcycle with wheelchair compartment

Source: Author (2017)

Parking for an OKU motorcycle with a wheelchair compartment does not have any provision either in the Malaysian Standard (MS 1184:2014 - Universal Design and Accessibility in the Built Environment) or in the Road Transportation Act (other lacking in guidelines and standards coverage are discussed in 7.1.1.2).

In contrast, parking was not a problem for P19 (male, prosthetic leg) if he rides his motorcycle since his motorcycle was modified for OKU and does not have an extra compartment and extra tyre to carry a wheelchair. Therefore, it does not require any special large parking bay and can be parked in any ordinary motorcycle parking. Also, P19 was able to drive an unmodified car and can use an ordinary car parking space.

Some OKU drive their car just to connect them to other transportation modes such as the rail services. The lack of car parking (not only OKU car parking) leads P19 to

park his car wherever possible. There are some LRT stations that provide sufficient parking space for the passengers but in some stations, parking is limited or not provided at all but only for the staff. P19 shared that he was once fined for parking his car at a prohibited area near the station.

Even though OKU parking space is for OKU drivers, P13 (male, wheelchair user) claimed that the numbers of parking spaces are limited. In the event that OKU parking is fully occupied, P13 will park in an ordinary parking area, closest to the left in the parking bay. Therefore, he still has space to transfer to his wheelchair. The car driver parked on the left may be unable to get in the car from the driver's side but P13 had no other options unless he was willing to wait until the OKU parking was available for him.

Meanwhile, for some others, driving to KL city centre is not a problem. According to P7 (male, wheelchair user), he prefers driving to KL city centre where traffic congestion is not a big problem for him since he planned his every single journey, usually for multiple destinations. Driving on his own let him move freely from one place to another. A9 (female, walking unaided) expressed that she enjoyed her friend's car ride that "can go farther apart from commuting public transport".

However, OKU parking is only for OKU drivers as long as their vehicle has the OKU sticker (an OKU sticker only given to an OKU driver). This condition was a concern to OKU passengers. For example, as shared by P8 (female, wheelchair user):

OKU parking is provided for OKU drivers. How about me? Majority of us [OKU] are passengers but we still need the OKU parking to transfer to and from the wheelchair.

A mechanism to permit special parking such as OKU parking for cars with OKU passengers needs to be developed. According to CL9 (OKU development officer), there is a plan to introduce a regular parking size with a sign for OKU passengers that do not use a wheelchair. However, it was still under discussion and needs to be agreed by the Ministry of Well-being, Housing and Local Government. Furthermore, some legislation does not have provision for OKU. For example, there is no OKU parking mentioned in the Road Transportation Act. CL7 (KLCH architect, access audit trainer) explained:

'OKU' was not mentioned in the Act since the terminology is newly introduced. Another challenge is on different interpretation on the terminology of 'special parking'. The state government refers to 'special parking' as OKU parking but in KL it refers to parking that can be leased. To amend terminology in legislation is not that simple.

There are also cases where OKU car parking is 'hijacked' by non-OKU drivers without any significant reason as claimed by P7, P10, and P13 (male, wheelchair users, car owners). This attitude indicates that society lacks consideration and recognition towards OKU. CL7 highlighted that summons cannot be issued to the non-OKU if they park in OKU parking since the provision is not spelled out under the said Act. Meanwhile, for P17 (male, walking unaided), if it happens to be that OKU parking is vacant, he will park there even though he does not have any problem using the ordinary parking bay. These two situations indicate that there is still a lack

of awareness among the public on the importance of reserving OKU parking spaces for those really in need.

In terms of providing the parking, implementers conformed to the regulation set by the authority. IM6 (implementer, professional architect) gave an example that, "For every 100 units of low-medium and low-cost apartments, we need to provide only two OKU parking spaces". He realised that the OKU parking numbers are limited but further added, "We just fulfill whatever requirements to get authority's approval". It might be high time to amend the standard since "OKU drivers are increasing with the increase of advocacy" as mentioned by R7 (wheelchair user, OKU representative). Furthermore, Cuthill (2010) suggests that distribution of infrastructure would be ideal if it is underpinned by considerations of social justice and equity.

# 5.4.2 Inconvenience of transferring from wheelchair to vehicle

The need to be assisted by others in moving from the wheelchair into a vehicle makes OKU feel uneasy, especially when the transfer is conducted in front of a crowd. In the go-along journey experienced with P6 (female, wheelchair user) to KL Tower, there was a shuttle van service to transport visitors from the main gate to the base of the tower. However, P6 needed to be lifted by her husband to access the van (refer Figure 5-32). She shared her feelings, saying that, "It [the shuttle van] should be provided with a ramp where wheelchairs can access, so I don't need to be carried in front of others". She further added, "The shuttle van should have facilities similar to the mobility van so that OKU don't need to be carried for

transferring" (mobility van is discussed next). Moreover, it was observed that transferring the OKU to the shuttle van was just as difficult and dangerous as transferring OKU to UberXL (discussed in 5.1.5) as the van is higher compared to a car.



Figure 5-32 Transferring OKU to shuttle van seat (a) P6 carried by her husband (b) the transferring process was seen by others queuing for the shuttle service

Source: Author (2017)

Similar to P6, research participant CL8 (wheelchair user, researcher, OKU activist) also does not like to be carried by others. Being watched by others while being transferred makes OKU feel uncomfortable and annoyed, a feeling that CL8 claimed as related to issues of dignity. Yet, dignity and respect are fundamental to justice (Honneth, 2004). OKU can be hurt by the reactions of others and feel embarrassed when being stared at. This situation is part of OKU responses to the social reactions of others (Reeve, 2010) watching them being transferred, for example.

# 5.4.3 The scarce numbers of mobility vans

OKU who experience difficulty in transferring their own body into and out of a vehicle usually appreciate the use of a mobility van that is equipped with a wheelchair restraint system and wheelchair ramp or hydraulic powered lift attached to the van to allow wheelchair access. In KL and around Klang Valley, this service is normally provided by charitable organisations with a charge for the OKU and caregiver. For example, RM16 (approximately GBP2.90) is charged for a hospital return trip for the OKU and RM5 (approximately GBP0.90) for the companion or caregiver. The service operates from 8.30 am to 4.00 pm on weekdays and from 8.30 am to 12.00 noon on Saturday (Mobiliti, 2014).

Travelling by a mobility van appears to be the easiest way to transport a wheelchair user especially for those who cannot make a self-transfer into the car. However, the service of the mobility van is still limited while weekend bookings are expensive and burden the user. P14 (male, powered wheelchair user) shared that:

Travelling by mobility van is the easiest but the availability is very limited. A single van might have six to seven trips per day, not easy to suit the schedule. It has extra charge for weekend booking that we need to pay up to one hundred to two hundred ringgits (approximately GBP18.20 – GBP36.40). This is not fair, we couldn't afford to pay that amount.

P14 further added, "In the past there's RapidKL mobility van, charge about RM5 but there's no service anymore." R6 (powered wheelchair user, OKU representative)

explained that RapidKL had Rapid Mobiliti vans introduced in 2011 but revealed that:

They [RapidKL] said they're not making money, out of the five [units], they said two were not functioning because they were hardly used. Then they said, there's no demand [in KL], so two were sent to Penang since there they had demand. Only one is left.

R6 concluded that Rapid Mobiliti was not well managed and claimed that many OKU in KL need the service. She took the view that Rapid Mobiliti claimed their vans were underutilised just to show that the service was not making money.-What R6 voices gives the impression that she is not satisfied with the reason provided by Rapid Mobiliti to reduce and later discontinue the mobility van service in KL. However, the Rapid Mobiliti explanation that was quoted by R6 could be referring to less demand in KL compared to Penang. As a Malaysian citizen and resident, I observed that in Penang, the OKU association seems to be more vocal compared to KL. Further discussions on advocacy on OKU access are deliberated in 7.2.3.2.

For some OKU, a mobility van is necessary for their mobility or else they would be stranded at home. For example, R4 (male, individual activist) has no ability for self-transfer and he revealed that his big body size does not permit others to assist him in being transferred into a vehicle. He claimed that, "Transportation is accessible for certain condition of OKU but not to all. OKU haven't been granted their rights even though some are taxpayers". R4 had argued that a government body should take responsibility to provide a mobility van service rather than a non-governmental organisation (NGO) as at the moment. R4 further added that, "Mobility costs for a

person like me is multiple times compared to the non-disabled". Nonetheless, R4 claimed that his voice was not being heard. Again, this issue is related to how society organises for OKU to be heard effectively in the mainstream channels.

## 5.4.4 Summary of private transportation and other transportation services

The main concern for OKU driving their own transport to KL city centre or to the train station is the lack of OKU parking. Drivers and passengers who are wheelchair users are the most affected by the lack of OKU parking spaces. Moreover, it is common for any existing OKU parking spaces to be occupied by non-OKU drivers. Meanwhile, traffic congestion is a nuisance for everybody, but for OKU, being stranded in a traffic jam might worsen their health condition (e.g. for those who require scheduled toileting). For those with limited ability for self-transfer into a vehicle, the mobility van is valued very highly but the service is currently very limited.

Only OKU drivers with an OKU card and OKU sticker are allowed to use OKU parking spaces, but this does not apply to OKU passengers. Discussion on provision of the parking space for OKU passengers and on enforcement action for those abusing OKU car parking space were still on-going while data is being collected. For mobility vans, other than those operated by charity associations, the service was also provided by a transportation operator at one time, but those units were claimed to be underutilised and that this led to malfunctions; some units were transferred to another district that had more demand.

A summary of the use of private transportation, shuttle vans and mobility vans for OKU inclusion is provided in Table 5-5. Finally, concluding remarks on OKU's

inclusion through a variety of transportation modes to access KL city centre are given before the discussion moves to accessibility of buildings and the street level environment in the next chapter.

Table 5-5 Comparison of private transportation, shuttle van and mobility van for OKU inclusion

Criteria/ facilities	Private vehicle	Private shuttle van service	Mobility van
Route/ destination	More freedom to reach destinations	Limited as route is set by the attraction provider	Limited as per booking
Parking space	Needed but OKU parking space is very limited	Not needed	Not needed
The need to transfer from wheelchair to car seat	Yes	Yes	No - appreciated by wheelchair user
Fare	Own expenses for fuel	Free	Reasonable but need to pay extra after driver's working hours and on weekends or public holidays. The extra charge is considered expensive
Availability	Always available if OKU owns the vehicle	Only provided by certain attraction companies	Limited and uncertain to get the booking. Priority for hospital appointment

# 5.5 Conclusion

This chapter has contributed to the understanding of physical access issues among OKU in using transportation and transport-related facilities in accessing KL city centre. Overall, the current transportation modes in KL do not comprehensively enable free mobility for OKU inclusion. Based on the discussions in this chapter, there are several issues pertaining to different types of transportation used by OKU to access KL city centre. Such issues act as barriers and hinder OKU's inclusion through the transportation system and can be grouped under: (1) the lack of

transportation-related facilities, (2) the lack of safety controls, (3) psycho-emotional effects from the physical transportation barriers, and (4) negative attitudes of other public.

The first factor relates to the lack of transportation-related facilities such as OKU parking spaces, and insufficient accessible buses and physical access facilities. Financial constraints are the main reason given by the service providers for insufficient physical access facilities in transportation including maintenance issues. How effectively people are able to use the transportation services is important to consider, not only in providing it. Therefore, there is a need for the transportation providers and the providers of transportation-related facilities (e.g. the local authority in providing bus stops) to be aware of the diversity of individual needs related to disability. Transport configuration needs to take diversity into account so that all can have access to primary goods. Having said this, it is noted that with respect to OKU access, subsequent efforts have been made by the providers i.e. the transportation regulatory bodies and implementers in upgrading the current access for inclusivity even though some measures are still in the planning stage (as discussed in Chapter 4). The implementation of those policies will be discussed in the final empirical chapter (Chapter 7).

Second, on the lack of safety controls, the safety issues include the threat posed by the gap between the platform and the train door, the choice of facilities' materials, and risk in using staircases and escalators in the transportation hub for those with mobility difficulties. As a result of the physical barriers, some of the OKU participants have compromised safety to get to the end of their journey. However, the majority

of the participants took more time in the journey as they were more conscious of threats posed by these barriers. The travel duration was quite dependent on individuals' capacity to pass through barriers during their journey, and this was also time-consuming for many in reaching their destination. The extra travel time was not measured in this research, but the finding seems consistent with Ferrari *et al.* (2014) finding that wheelchair users travelling hours are longer, partly because of the vertical and horizontal access problem.

Next, the psycho-emotional effects from the physical barriers. With the on-going struggle in facing transportation barriers, some OKU might just give up continuing their journey. The potential obstacles are perceived as barriers to different degrees depending on individual bodily functions, even though individuals may use the same type of walking aid and have the same kind of impairment. This demonstrates that people have different needs varying with the individual's biological and psychological characteristics, as well as the environmental factors (Reeve, 2004; Thomas, 2004; Kastenholz *et al.*, 2015; Zajadacz, 2015; Shakespeare & Watson, 2016) in line with the viewpoint of the bio-psycho-social model of disability and the geographical model. The feeling of frustration and lack of security to continue the journey for example, are part of the negative effects from the psycho-emotional dimension of disability. Both the structural disability and psycho-emotional dimension of disability indicate a form of injustice by means of a detrimental or inadequate environment that has effects and consequences in terms of social exclusion.

The final factor that hinders OKU's inclusion through the transportation system is the negative attitude of the general public and the service providers. Examples of the negative attitude towards OKU in this chapter evidenced that barriers faced by OKU are not only physical but also attitudinal (Carson, 2009); those are socially constructed as viewed by the social model of disability. The lack of recognition (Fraser, 2003) leads to negative attitudes of wider society such as discrimination and stigma against OKU. Though, it is noted that there were also positive civic awareness/attitudes among some of the public such as those willing to accompany and assist OKU in using transportation. Nonetheless, OKU's own negative perceptions and impressions of the transportation system could also deter them from exploring different modes of transportation to KL city centre, thus, limiting their mobility.

Meanwhile, the negative attitude among the providers can be seen when they give low prioritisation in providing transportation facilities for OKU's inclusion. It is noted that there were attempts from the provider to employ procedural justice in providing accessible bus stops by taking OKU's view in the decision-making process (refer to section 5.3.3). However, the provider still did not implement the accessible solution from what was discussed and highlighted by OKU representatives. This situation exemplifies that policies and people who create the built environment are major contributors to the barriers as discussed by Imrie and Hall (2001).

Evidence from the go-along journeys indicates that access facilities in transportation are not totally OKU-friendly as they still required OKU to get assistance from others to continue their journey to the city centre. The current indications of OKU inclusion

in KL city centre through accessibility of transportation appear to indicate that, among OKU with mobility difficulties, wheelchair users in particular still need more support from the implementers/service providers in terms of the physical access provision in enabling their inclusion. The following chapter continues to discuss barriers and facilitators in the built environment, focusing on the accessibility of buildings and the street level environment.

#### **CHAPTER 6**

# THE ACCESSIBILITY OF BUILDINGS AND THE STREET LEVEL ENVIRONMENT FOR DISABLED PEOPLE

Manley (2011) claimed that research studies tend to investigate the accessibility of buildings rather than the street level environment. This chapter aims to analyse OKU's inclusion by appraising accessibility in both buildings (including their surroundings) and the street level environment. In order to examine physical access and inclusion, cities are key spaces to be interrogated (Friedner, 2015). Hence, in the continuation of assessing to what extent KL city centre enables OKU's inclusion, this chapter examines access barriers and facilitators for OKU in buildings and the street environment. Similar to the previous chapter, the findings of this chapter are based on disabled participants' experiences and/or my own observations as the researcher. The findings and discussions are presented in three sections that cover (1) building entrance and circulation, (2) internal features and services, and (3) the street level environment. Conclusions on OKU's inclusion through accessibility of buildings and the street level environment are then made at the end of the chapter.

Table 6-1 shows buildings in which physical access for OKU was observed in the go-along journey. KL Sentral, the main transportation hub, and other train stations were commonly accessed for transit in-between modes of public transportation to/in KL. Buildings highlighted in bold are those that are discussed in this chapter, whereas other buildings (the non-bold) were discussed in the previous chapter (on transport-related issues). However, issues on information and ticket counters, and

toilets in the transportation stations are included in this chapter as part of architectural design issues.

Table 6-1 Category of buildings accessed in the go-along journey

Participants	Walking aid	Building	Building category
P1	Wheelchair	- Istana Budaya (Cultural Palace)	- Cultural
P2	Unaided	- KTM Klang - KL Sentral - LRT KLCC Station - Suria KLCC	- Transportation - Shopping/office
P3	Wheelchair	<ul> <li>LRT Wangsa Maju Station - LRT KLCC Station</li> <li>Masjid As-Syakirin (KLCC Mosque)</li> </ul>	- Transportation - Religious
P4	Skateboard	<ul><li>LRT Wangsa Maju Station</li><li>MARA Building</li><li>Pertama Complex</li></ul>	- Transportation - Shopping/office - Shopping/office
P5	Wheelchair	<ul> <li>LRT Wangsa Maju Station - LRT KLCC Station - LRT Hang Tuah Station - Hang Tuah Monorail Station</li> <li>Berjaya Time Square</li> </ul>	- Transportation - Shopping/office/ hotel
P6	Wheelchair	<ul> <li>KTM Pelabuhan Klang Station - KL Sentral</li> <li>Menara KL (KL Tower)</li> <li>LRT Dang Wangi Station - LRT Alam Megah Station</li> </ul>	- Transportation - Telecommunication - Transportation
P7	Wheelchair	- National Museum	- Cultural
P8	Wheelchair	<ul> <li>KTM Klang Station - LRT Subang Jaya Station - LRT Pasar Seni Station</li> <li>Central Market</li> <li>Masjid Negara (National Mosque)</li> </ul>	- Transportation - Cultural - Religious
P9	Unaided	<ul><li>LRT Cempaka Station - LRT Bandaraya Station</li><li>Sogo</li></ul>	- Transportation - Shopping mall
P10	Wheelchair	<ul> <li>ERL Putrajaya &amp; Cyberjaya Station - KL Sentral</li> <li>KL Tower</li> <li>Central Market</li> </ul>	- Transportation - Telecommunication - Cultural
P11	Wheelchair	<ul><li>LRT Bahagia Station - KL Sentral</li><li>Tugu Negara (National Monument)</li></ul>	- Transportation - Historic monument
P12	Wheelchair	<ul> <li>LRT Universiti Station - KL Sentral - Imbi Monorail Station</li> <li>Low Yat Plaza</li> </ul>	- Transportation - IT centre
P13	Wheelchair	<ul><li>Kenanga Wholesale</li><li>Anniversary Theatre</li></ul>	- Shopping mall - Cultural

Continue to the next page

Table 6-1 (continued)

Participants	Walking aid	Building	Building category
P14	Powered wheelchair	<ul> <li>Pavilion</li> <li>Ansa Hotel (main entrance)</li> <li>Lot 10</li> <li>Suria KLCC (banking and telecommunication services)</li> </ul>	- Shopping mall - Hotel - Shopping mall - Shopping/office
P15	Powered wheelchair	- KLCH Tower 3 - Quill City Mall	- Administrative - Shopping mall
P16	Single crutch	LRT Kelana Jaya Station - LRT     Masjid Jamek Station - LRT PWTC     Station     Sunway Putra Mall	- Transportation - Shopping/office/ hotel
P17	Unaided	- Masjid Kampung Baru (Kampung Baru Mosque)	- Religious
P18	Powered wheelchair	<ul><li>Masjid Kampung Baru</li><li>Kampung Baru Development Corporation</li></ul>	- Religious - Administrative
P19	Prosthetic leg	<ul> <li>LRT Puchong Prima Station - LRT Masjid Jamek Station - LRT Ampang Park Station</li> <li>Ampang Park</li> </ul>	- Transportation - Shopping mall
P20	Crutches	LRT Gombak Station - LRT     Bandaraya Station     Sogo	- Transportation - Shopping mall

# 6.1 Building entrance and circulation

A well-designed building should cater for all of the requirements needed to fulfil the purpose of the building. The spaces within the building must provide conditions that are appropriate for the activities and satisfactory for the comfort and safety of the occupants. Building design must integrate all of the requirements i.e. functional, user, performance and statutory requirements in order to achieve the design goals (Watt, 2007). The entrance to a building is the first indicator showing whether the building welcomes users with different abilities, and whether the building designer recognises the needs of OKU. The building entrance, circulation inside the building, and facilities for vertical access are strongly connected in determining an accessible

building. A universally designed building could reduce the need for human assistance and assistive technologies for disabled people (Barnes, 2011).

Generally, buildings located in a redevelopment area and those which have been refurbished in KL tourist attraction areas have better accessibility for OKU compared to older developments and non-tourist attraction areas. However, there should be no exclusionary design that hinders accessibility in society (UN, 2007), therefore, accessible buildings should not be only for certain areas. This section discusses (1) accessibility of the main entrance and alternative entrance to enter buildings, and (2) circulation and changes of levels.

# 6.1.1 The main entrance and alternative entrances to enter buildings

In the go-along journey, P14 (male, powered wheelchair user) found it easy to access the shopping centre through an inclusive main entrance at the Pavilion. A step-free entrance with a gentle slope in front of the building frontage welcomes OKU, especially wheelchair users for direct access to the building as shown in Figure 6-1.



Figure 6-1 Pavilion and its surrounding; with a gentle slope climbing to the main entrance

Source: Author (2017)

Both examples in Figure 6-2 demonstrate a disabled-friendly environment to enable OKU to access buildings without providing a separate access with a different route for OKU in an isolated location. In Figure 6-2 (a), the design is more 'universal' and 'inclusive' where OKU may comfortably access the building using the same route as other citizens with equal entry status. This indicates that a transformative solution (Fraser, 2003) was adopted in the design process, resulting in an accessible entrance to be used by the widest range of abilities (Mace *et al.*, 1991). Hence, any special adaptation is not needed to cater for the needs of human diversity.





Figure 6-2 Examples of disabled-friendly entrances to access buildings (a) seamless entrance with a gentle slope without steps (b) ramp located adjacent to the steps

Source: Author (2017)

Meanwhile, in Figure 6-2 (b), the design concerned with OKU's access is more like an affirmative approach (Fraser, 2003) where buildings are built or retrofitted with accessible facilities (Hussein & Yaacob, 2012) such as the ramp in the example shown. Even though the latter example separates people to some extent, both entrances above express recognition of OKU when the designers provide an opportunity for persons with mobility impairment to access the building from the main entrance as well.

User safety while using a building is a priority (Watt, 2007) that needs to be one of the designer's vital thoughts in providing access to buildings. At the same time, human feelings should be attended to in designing space and facilities. Inaccessible design could affect OKU negatively (Iwasaki & Mactavish, 2005) and could make them feel less confident in developing their potential (Sen, 2011; Harnacke, 2013). For example, P10 (male, wheelchair user) felt vulnerable and inadequate when faced by a ramp at the Central Market main entrance that was lacking safety measures:

There are buildings provided with access for a wheelchair, but some of the ramps are too steep and slippery. No handrail provided at the edge of the ramp. I'm not sure if I can wheel on my own [on the ramp].

P10 was then assisted by his wife to enter the building, but while coming out from the building, he independently pushed the wheelchair on his own but with caution, since he considered the ramp surface to be slippery - see Figure 6-3 (b).





Figure 6-3 OKU access at Central Market main entrance (a) a ramp is provided adjacent to the steps (b) the ramp is lacking in user safety precaution

Source: Author (2017)

However, at the same spot, P8 (female, wheelchair user) in an earlier go-along session cried, "No, no, no, no, no, no! I'm not that brave. I fell from a ramp recently. This ramp needs to have a handrail". P8's reaction to the ramp design reflects how building design and access facilities affect the emotions of OKU as well. This structural disablism appears to bring the psycho-emotional dimension of disability (Reeve, 2014) to the participant in a way that could lead to activity limitation and restriction in participation (Clarke *et al.*, 2011). OKU might choose not to use any facilities that could affect their safety and health, and instead choose to stay safe at

home. This, in general, tends to lead to their social exclusion and hence reduce the opportunity to tackle connected poverty issues (Kutesa, 2015).

Door design and the door handles also contribute to facilitate or impede OKU's access to buildings. Heavy door material and the design of the door knob or door handle can make it difficult for OKU to enter buildings (Goodall, 2010), while some OKU might not even get the chance to get out of their own dwelling because of this barrier (Salkeld, 2015). Figure 6-4 (a) shows the automatic glass door at the main entrance which enabled P15 (male, powered wheelchair user) to access a shopping mall effortlessly. Meanwhile, in Figure 6-4 (b), P15 only gets through the glass door in one of the KLCH buildings with the assistance of a Security Police officer. It is noted that physical problems could be solved by social action (Oliver, 2004) such as public's assistance, yet, not every building has Security Police or staff to standby in buildings to assist visitors.







Figure 6-4 Examples of doors at the main entrances of different buildings in KL city centre (a) automatic glass door (b) glass door (c) intricate carved solid wood door

Source: Author (2017)

Meanwhile, P1 (female, wheelchair user) experienced difficulty in opening a heavy door to access Istana Budaya (Cultural Palace). Figure 6-4 (c) shows an example of the heavy solid wood door providing access to the performance hall. However, according to the Security Police in the building, in the event of performance, doors are open to welcome spectators, and there will be staff on duty to assist visitors. Nonetheless, designs that facilitate ease of use for all users could promote independent use by OKU. Based on my observation in the go-along journey, in general, having the ability to do things independently seems to bring more satisfaction to the participants, this was apparent in the demeanour.

For entrance to shop lots inside a building, P14 observed that the newly refurbished Lot 10 (a shopping mall opened in the early 90s) has an inclusive entrance to the shop - see Figure 6-5 (a). However, there are many other shop entrances that still have a raised floor, especially in a row of old shophouses as shown in Figure 6-5 (b). Nonetheless, older buildings that were not covered by regulations for universal access need to conform to the requirement when the owner applies for building plan approval from the Building Control Department of KLCH prior undertaking a refurbishment project (further discussed in 7.1.2.1 on enforcement and regulation conformation on site).

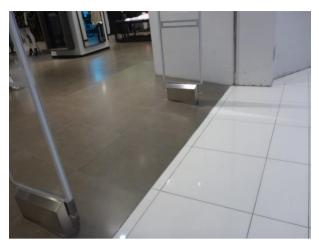




Figure 6-5 Examples of shop lot entrances (a) a gentle slope replacing raised/dropped floor (b) shop entrance with raised floor

Source: (a) Author (2017), (b) Kamarudin (2007)

IM8 (transportation operator), even though the nature of his work is not connected with access to shophouses, noticed that in KL city centre, the old shophouses are not disabled-friendly. However, he took the view that:

As a building owner, it's just about whether you want or not to include access to your building. Ampang Line [LRT service] are all old stations but we managed to upgrade the access.

Nevertheless, it is noted that the LRT service and its facilities are under a government-owned company while the old shophouses mentioned are individually owned. Therefore, budget is more of a constraint for a smaller company or individual shopowner.

Meanwhile, Figure 6-6 shows steps to enter a freestanding *surau* (praying area) that is inaccessible for wheelchair users. This 'architectural apartheid' is denying access to a certain group of people (Imrie, 2001), and thus leads to exclusion and 'architectural disability' (Hanson, 2004). This example indicates a situation where the wheelchair user is denied the opportunity to perform prayers and practise their faith once they are outside of their own house. Further discussion on ablution and praying areas is provided in 6.2.3.



Figure 6-6 Inaccessible entrance for wheelchair to access surau

Source: Author (2017)

In the event that there is no accessible facility at the main entrance, some buildings are provided with access from an alternative entrance. For example, at Masjid Negara (National Mosque) the main entrance can only be accessed by a staircase which is not accessible for wheelchair users and most other OKU with mobility difficulties as shown in Figure 6-7 (a). However, since Masjid Negara is one of the buildings that is listed under the Malaysia National Heritage buildings, there are a few constraints on OKU access as discussed in the context chapter. No alteration is allowed for a building with architectural aesthetic and of historical importance

(Harun, 2011; Foster, 2013) including this staircase. It is apparent that the heritage legislation and access regulation often conflict (Gleeson, 2001). However, for this *masjid*, an alternative entrance with a ramp is provided about 300 metres from the main entrance that enables OKU to get into the mosque easily - see Figure 6-7 (b).





Figure 6-7 Access at Masjid Negara

(a) Only staircase provided at the main entrance (b) accessible route located at alternative entrance

Source: Author (2017)

The common issue faced on accessible facilities provided as an alternative entrance is the lack of signage to direct visitors to go straight to the accessible entrance, as experienced by P8 (female, wheelchair user) in Masjid Negara. After the Uber left us at the main entrance, the Security Police of Masjid Negara told us to enter the *masjid* through an accessible route from the alternative entrance. We then faced some street level barriers along the pedestrian walkway by the road to reach the said accessible entrance (discussed in 6.3.3 on landscaping, street furniture and utilities).

Similar observations could be made when P6 (female, wheelchair user) was assisted by her husband to use the escalator to reach the ticket counter level at KL Tower (refer to Figure 6-8). There was a route to access a lift service on the left side of the tower, but no signage provided (or maybe it was there but did not catch our eyes). We only knew the existence of the alternative entrance after being shown by KL Tower staff while exiting the tower. Wheelchair users might abandon their intention to enter a building if they thought that there was no access for them as admitted by P6, "If I was alone just now, I wouldn't get in the tower".



Figure 6-8 At KL Tower entrance (a) P6 using escalator assisted by her husband (b) staircase and escalators provided at the main entrance to the ticket counters level

Source: (a) Author (2017), (b) Enidhi (2011)

Referring back to the access issue at Masjid Negara, there was an alternative route for a person with mobility difficulties to access the high staircased building (by using a different gate from the main road). However, there was no signage from the main road or at the main entrance signposting the accessible route; this omission needs attention from the responsible body as well, other than the accessibility of the building. As a wayfinding aid (Vilar *et al.*, 2014), signage should be clear,

understandable and easily visible from both sides of the road (Newton *et al.*, 2010). Furthermore, information may reduce the feelings of anxiety and uncertainty among OKU (Marston, 2002). Hence, access information (either physically or online) given on buildings and the city accessibility would further benefit disabled users. For buildings, 'complexity of floor plan configuration is a primary influence on wayfinding performance' (O'Neill 1991, p.554). However, good architectural space planning only requires minimum signage for wayfinding.

## 6.1.2 Circulation and changes of levels

Most of the common problems faced by OKU in using vertical access facilities were presented in the previous chapter as part of discussion on the barriers in transportation stations which were mainly on maintenance and technical issues. Vertical access, such as lifts and escalators, are generally provided in multi-storey buildings in KL city centre. There are also buildings provided with an accessible ramp to all floors (Figure 6-9). However, Kamarudin *et al.* (2014) and Lewis *et al.* (2005) claim that facilities such as ramps, escalators and lifts are mostly provided in the premises of the larger service providers.



Figure 6-9 Accessible ramp at Masjid Kampung Baru up to the top floor

Source: Author (2017)

In some cases, the ramps provided were too steep and it was impossible for OKU to wheel their wheelchair along the ramp without assistance. Figure 6-10 shows a steep ramp located adjacent to a staircase (on the left of the building) connecting to OKU toilet and cafeteria within the boundary of the National Museum. This demonstrates that there was an awareness of the need to provide access for OKU but a lack of technical knowledge on how to facilitate OKU access on the part of the designer (Kamarudin *et al.*, 2012) (further discussed in 7.2 on accessibility education and awareness programmes).



Figure 6-10 Steep ramp

Source: Author (2017)

Ramps and staircases provided with a handrail could ease access for people with mobility difficulties. However, according to P9 (female, walking unaided), she had experienced a few cases where the handrail was not reachable because flowerpots and other decorations were arranged under the handrail along the staircase. This situation also indicates that there is knowledge and awareness among the designers in facilitating access for OKU, yet, there can be a lack of the same among the building owners/managers.

Certain OKU, if a building is not accessible, will not let other people carry them into the building. For example, as shared by P7 (male, wheelchair user), "I would rather not enter a building and cancel my journey if I needed to be lifted by others on a staircase". As mentioned by CL8 (collaborator, wheelchair user, researcher, OKU activist) on transportation issues in the last chapter, an OKU did not like to be carried and watched by others while being transferred; she claimed that it relates to issues of dignity. In contrast, P12 (male, wheelchair user), was always willing to be lifted by others if the vertical access facilities in buildings were not disabled-friendly. And

again, their choice and willingness to be lifted by others are also based on their personal biographies (Reeve, 2004) which might arise partly from their motivation and attitude to impairment (intrinsic factor) and the condition of the physical environment (extrinsic factor) (Shakespeare & Watson, 2016). P12 however claimed that it is one of the ways to create awareness among the wider public when they see or help OKU to access another level, for example. P12 added that "people will have the thought that OKU also need to use the facilities, the same as others".

The attitude of the public is one of the barriers for OKU restricting use of vertical access facilities. For example, as shared by P5 (male, wheelchair user):

There are too many non-disabled using the lift. They don't offer. Sometimes when I see everyone is rushing into the lift without giving a chance for us, I will shout, "Hey, so many 'OKU' in the lift!" But usually, they just ignored us and didn't even look at us. We have once waited for half an hour for a lift. I don't know what they think.

P5 usually goes on outings with his other wheelchair-using friends. He added that, "A few times we used the escalator, but I've fallen once. That's it. There should be a special lift for us". On a different situation, in my go-along journey with P16 (male, amputee, single crutch user), he was impressed that there was a special lift for OKU as well as the general lifts when he said:

This is great! They have a special lift for OKU, pregnant women and elderly. I haven't seen a special lift like this in other malls. This is a good effort from the developer. I hope other developers will provide this priority service as well.

However, even though there was signage at the lift lobby indicating the lift as a priority lift as in Figure 6-11 (a), everyone rushed in when the lift door opened and left P5 behind, which made him upset. P5 felt recognised and enthusiastic when he first saw a dedicated lift for OKU which is not common in KL. He however quickly became frustrated to be treated just like in anywhere else by the non-disabled while entering the lift. In our go-along journey, normally P5 did not bother to use a lift (refer Figure 5-8 (a) for example). However, he wanted to experience being given priority as an OKU in that particular lift but the reactions of others disappointed him. Meanwhile, P4 (male, skateboard user), prefers to use the escalator as in Figure 6-11 (b) since he always experiences a similar problem as P5. For me, by using an escalator, P4 was compromising his safety but P4 just refused to wait for a lift when I asked him to do so. Waiting to enter a lift was perceived as a waste of time for him.



Figure 6-11 Example of vertical access facilities provided in buildings
(a) priority lift (b) escalator

Source: Author (2017)

In some buildings, split levels are highlighted to caution users about any changes of levels. For example, a change of level in the newly built *masjid* is marked with a caution sticker as shown in Figure 6-12 (a). Access for wheelchair users is provided next to the step by having a gentle slope in-between the two floors as in Figure 6-12 (b).





Figure 6-12 Change of floor level (a) a caution sticker is placed to warn user of the level changes (b) separate route for wheelchair is provided

Source: Author (2017)

However, the edge between the floors and the slope exposes a danger to users. The introduction of the threshold seems unnecessary when a gentle slope can be designed for the whole stretch in-between the two different floor levels. Therefore, there is no need to provide a separate route for OKU, when a safer and a more inclusive path can be provided. Moreover, the separate access drew attention to a person's impairment (Imrie, 2015).

# 6.1.3 Summary of accessibility of building entrance and circulation

Access to the main entrance could provide the first impression on accessibility in the whole building. Safety issues are particularly important to be thought through in the building circulation especially in changes of levels. Table 6-2 summarises the facilitators and barriers in enabling OKU to access buildings and circulate horizontally and vertically as observed in the go-along journeys and expressed by the participants based on their previous experiences.

Table 6-2 Access facilitators and barriers in building entrance and circulation based on the go-along interviews

Space/facilities	Facilitators	Barriers
The main entrance and alternative entrance	A step-free entrance	Entrance with steps, without any ramp provided
	Gentle slope (if needed)	Raised floor from the ground level or the veranda way to the building
	Appropriate ramp gradient with railing provided adjacent to the steps at the main entrance	Ramp provided without safety features (e.g. no railing)
	Easy access door (e.g. automatic door)	Heavy door and unfriendly door handle/knob
	Alternative accessible entrance (if not possible from the main entrance)	The absence of signage to the alternative entrance
Circulation and changes of level	Vertical access facilities are provided such as lifts and escalators	Public attitude is a barrier (not giving priority to OKU) and maintenance and technical issues
	Appropriate ramp design provided where necessary	Inappropriate gradient and design of ramp (too steep)
	Caution stickers provided to warn user for changes of floor level	Many unnecessary threshold/split levels
	Handrail is provided at staircases and ramps	Some handrails not reachable by the users in need since it they are obstructed with decorative elements (e.g. flowerpots)

Other than the physical factors, the attitude of other people is also an influence in OKU's inclusion. After assessing the building entrance and circulation, the next section will discuss the accessibility of the internal features and services inside buildings.

#### 6.2 Internal features and services

The internal features and services in buildings contribute to OKU inclusion which is not based only on the availability of access to enter a building. The findings of this section are discussed according to the spaces in buildings that the go-along participants experienced where the general public are allowed to circulate. The spaces are categorised as (1) counters and display areas, (2) toilets and sanitary facilities, and (3) ablution and praying areas.

## 6.2.1 Counters and display areas

Designing counters and display areas that can be used inclusively by a diversity of users portrays recognition towards the different heights and abilities of individuals. Therefore, OKU could be served directly at the counter without the need for an assistant to speak on their behalf. This section discusses (1) information and ticket counters, (2) shop displays and exhibition areas, and (3) food displays and ordering counters that enable OKU to have dignity in their individual abilities.

## 6.2.1.1 Information counters, ticket counters and banking facilities

The availability of a low counter for information and ticket counters could ease daily activities for people with diverse heights and conditions as shown in Figure 6-13 (a). Nonetheless, the low counter was not staffed while P12 (male, wheelchair user) wished to seek service (the lack of staff in rail stations was discussed in 5.2.5). However, in terms of design, the existence of the low counter indicates that there is an increasing awareness from the designer and the operator to provide a better service for a diversity of users.

Certain designs of the counters show some thought for OKU for example when designers play with multi-levels of the counter surface as in Figure 6-13 (a) and (b).



Figure 6-13 Examples of counter designs

(a) priority customer service with low counter provided in Monorail Station at KL Sentral(b) information counter in KL Sentral (c) concessionary counter in KLCC LRT Station

Source: Author (2017)

However, in Figure 6-13 (b), it is not clear whether the design intention comes with a thought for the different heights of users, or the design is just a design with a curved platform; the eye level of a wheelchair user is still lower than the counter

height. This indicates that the design thought for the counter was not sensitive enough for OKU inclusion. Other than the low ticket counter provided in KL Sentral Monorail Station, other information and ticket counters observed with the participants were of ordinary height. For rail services, even though OKU can only purchase concessionary tickets from the counter but not from the ticketing machines, the counters were not renovated to ease the transaction – see example in Figure 6-13 (c).

Even though there was someone, either staff (refer to 6-14b) or another member of the public, willing to help in communicating with the counter service person, P1 (female, wheelchair user) and P7 (male, wheelchair user), preferred a suitable counter height that would allow them to deal with the business themselves.



Figure 6-14 More examples of counter designs (a) ticket counter in Cultural Palace (b) ticket counter in the National Museum

Source: Author (2017)

P7 further shared that even though in banking services, officers are willing to serve OKU at the ground level without the necessity of using the counter at the upper level, he claimed, "That's not what we wanted". Counter facilities and their location should

enable OKU to have the opportunity to deal with business transactions in the same way as other citizens. Being able to conduct an action independently could increase OKU's self-esteem. One of the possible ways is to have recognition of human diversity and the different abilities of the users in designing facilities that could be inclusively used by all, without discrimination for any party.

# 6.2.1.2 Shop displays and exhibition areas

Based on the go-along journeys, generally, the display areas in shopping malls were mainly accessible to OKU where the wheelchair user can comfortably manoeuvre such as shown in Figure 6-15.



Figure 6-15 Circulation at display area (a) accessible display area in the souvenir shop at National Museum (b) ample space for wheelchair manoeuvring in a shop lot at Low Yat Plaza

Source: Author (2017)

Research participant P7 (male, wheelchair user) purposely selected the National Museum for our go-along journey since the building had just been renovated.

I think there's some challenges to access the museum since it is old. I want to see how they upgraded the building to facilitate OKU.

I wonder about the Museum Department's awareness in providing access, especially for wheelchair users.

In general, we observed that the external and internal exhibition areas at the National Museum were mainly accessible as shown in Figure 6-16. The exhibition area in the newly renovated museum indicates recognition for wheelchair access where a ramp is provided to ease access in-between two split levels.





Figure 6-16 Access to display area in the National Museum (a) ramp provided at the external exhibition area (b) internal exhibition area

Source: (a) Author (2017), (b) Low (2016)

However, some of the internal exhibition areas were displayed on platforms that are inaccessible for wheelchair users (see Figure 6-17). P7 however asked me for a favour by finding out what the exhibition was about along with the information provided on one of the platforms. Dissatisfied with the inaccessible platform with steps, P7 asserted that the design was inappropriate as it disadvantages wheelchair users from getting information equally with others.



Figure 6-17 Display on platform

Meanwhile, in the KL Tower observation deck, several fixed binoculars as part of the viewing facilities are provided without any consideration for wheelchair users. P6 (female, wheelchair user) was excited about viewing KL city from binoculars with her perception that, "We can see everything from the binoculars" but eventually regretted that "the height is not suitable for wheelchair users". Even though P6 just needed to pay half price for a concessionary ticket, it should not mean that she could only enjoy certain facilities. An adjustable height binocular would also be good for smaller people and children.



Figure 6-18 Standing binoculars provided at the KL Tower observation deck

Source: Menarakl (2016)

# 6.2.1.3 Food displays and ordering counters

Generally, food courts in the shopping complex and in the franchised restaurant are self-service and provided with a menu, either displayed on the wall or in front of the ordering counter as shown in Figure 6-19 (a); this arrangement made it easy for wheelchair users to order their food. But in a certain restaurant the menu was fixed on the countertop in a position that was inaccessible for some customers as in Figure 6-19 (b). Normally, food ordering should be self-service, but one could request the staff to deliver the food to the table.





Figure 6-19 Food ordering counters (a) menu could easily read in front of the counter (b) menu fixed on the counter top inaccessible for wheelchair user

Source: Author (2017)

In a self-service *nasi campur* or rice with mixed dishes stall, P13 (male, wheelchair user) needed to wait for a while to be served since the caterer was busy attending customers at the paying counter. The food counter was two-tiered, and the second tier quite high and far from P13's reach (Figure 6-20).



Figure 6-20 Food counter for nasi campur

Source: Author (2017)

P13 understood the busy situation but he also admitted that he felt he was being discriminated against a few times when placing food orders. He reported that he had a bad experience in a different place. "The waiter did not even acknowledge us [P13 and his disabled friend] though the stall was not busy at all, until I called [the waiter] that we wanted to order our lunch". However, in a different *nasi campur* stall, P13 experienced a good service where he was invited to have a seat while a waiter took orders from the table and served the food. Yet, he did not have the chance to view the variety of dishes himself as generally the case in a *nasi campur* stall.

# 6.2.2 Toilets and sanitary facilities

Using a toilet is a basic human right. Some OKU might need a scheduled programme of toileting, especially for those with a specific health condition. Therefore, toilets and sanitary facilities are just as important as other access facilities to be provided in buildings. This section discusses (1) toilet entrance, location and signage, (2) position of toilet interior facilities and materials used, and (3) toilet availability and usability for OKU.

## 6.2.2.1 Toilet entrance, location and signage

In Imbi Monorail Station that has issues with vertical access (discussed in 5.2.2), permission was granted for P12 (male, wheelchair user) to use a female toilet since toilets for men are located at the other side of the concourse area which also has a staircase. Even though there was no OKU toilet sign on the toilet door, we observed that there was a bigger cubicle with a grab bar provided in the toilet cubicle, supposedly to cater for OKU. Unfortunately, the toilet door was not wide enough for P12's wheelchair to pass through, as shown in Figure 6-21. Afraid his catheter bag was going to leak, P12 decided to do his business in the toilet common area, and I guarded the main toilet door.



Figure 6-21 Inaccessible toilet door opening for wheelchair

This incident demonstrated that there was a lack of technical knowledge (Kamarudin *et al.*, 2012) among the designers in providing universal design or at least accessible facilities for OKU. Designing universally has advantages for OKU as their needs are automatically included (Bringolf, 2008). However, this was the only toilet entrance that OKU could not access while on the go-along journey with the research participants. Nevertheless, even though it was an isolated case, it denied the wheelchair user from freely using the toilet facilities when needed.

Meanwhile, the location of the OKU toilet, either placed inside or outside of the main toilet, was also highlighted as an issue to OKU, especially those who need assistance in toileting as experienced by P6 (male, wheelchair user). In Dang Wangi LRT Station, one OKU toilet each is placed inside of the main toilet for males and females as shown in Figure 6-22.



Figure 6-22 OKU toilet cubicle inside the main female toilet

In the event that P6 needed her diaper changing, her husband assisted her inside the female toilet while someone stood by outside of the toilets to warn other female users about the male presence in the toilet. In this case, not only P6 was affected by the toilet location but her husband and other female toilet users were also uncomfortable with the situation of having a male in the female toilet. This experience opened my eyes that determining disabled toilet location is no less important than providing the facility. Unisex OKU toilets might work better where the OKU can be accompanied without embarrassment by a carer of the opposite sex (Hanson, 2004) and ensure the comfort of other users.

For signage issues, the lack of legibility of OKU facilities could create anxiety and worry in OKU when they cannot easily find the facilities that they need. Other than the inaccessibility of buildings and facilities, the lack of signage, communication and information is one of the main barriers for disabled people (Shakespeare, 2018). For example, the search for an OKU toilet in KL Sentral as experienced by P10 (male,

wheelchair user) while I waited outside of the terminal to wait for a hop-on-hop-off bus for our next destination. P10 complained:

There was signage to the toilet, but when I reached there, there's no OKU toilet. Then I asked the Security Police; the answer was "it's at the other end". Normally, toilets are grouped together. No wonder there's no OKU sign. I needed to roam around to look for it. If the first signage I saw has provided clear information, I can go straight [to OKU toilet].

However, the absence of OKU toilet signage was also an isolated case that was not commonly faced by the go-along journey participants. Generally, if a toilet for the disabled user is provided in a building, signage with an OKU symbol that is easy to understand is provided as well (see Figure 6-23).



Figure 6-23 Examples of signage to indicate toilet for OKU

Source: Author (2017)

OKU needs are poorly articulated in the design of buildings. Inappropriate positioning of disabled toilet facilities, including the water tap, showed the lack of OKU ergonomics and anthropometry knowledge among the designers. For example, in the OKU toilet in Masjid Kampung Baru, P18 (male, powered wheelchair user) demonstrated his difficulty in transferring from his wheelchair to the toilet seat given that the grab bar is placed far from his reach when it is supposed to facilitate his transfer – refer to Figure 6-24 (a) and (b). The inability to make full use of OKU facilities might reduce OKU's ability to be independent when a valuable facility to OKU such as the grab bar are not facilitating movement, thus, assistance is needed. Otherwise, OKU are likely to face danger of falling.







Figure 6-24 Grab bar position in OKU toilet

(a) & (b) Inappropriate positioning of the fixed grab bar (c) example of an ergonomic fixed grab bar and the foldable grab bar position

Source: Author (2017)

It should be noted that in the Malaysian culture, water is usually used for personal cleaning rather than using toilet tissue. Hence, it is common to have a water tap adjacent to the toilet seat. P10 (male, wheelchair user) complained that the position

of the water tap in a few OKU toilets was far from his reach as in Figure 6-25 (a) and (b).

The toilet is wide enough for OKU, grab bar is provided...but the water [tap] is far. Quite a struggle to reach the water from the toilet bowl, it's dangerous...OKU might fall.

R6 (powered wheelchair user, OKU representative) shared that she would still request photos of the toilet before booking accommodation even for a five-star hotel.

R6 added that:

There are many cases that a hotel is declared accessible. But some toilet doors open in, some are very narrow so I can't manoeuvre, and difficult to transfer to the toilet seat. Some of the flooring is glazed, nice to see, but slippery.







Figure 6-25 Issues in OKU toilet (a) & (b) the water tap (with hose) was places quite high to be reached from the toilet bowl (c) toilet bowl without the plastic toilet seat

Source: Author (2017)

Meanwhile, P1 (female, wheelchair user) commented that the toilet bowl in the Cultural Palace was too large for her. Furthermore, the toilet seat was missing (as in Figure 6-25c) and therefore caused P1 to become unbalanced so that she nearly slipped while using the facility. Fortunately, she managed to grab the bar adjacent to the toilet bowl. The incident shows the importance for OKU toilet facilities to be rightly positioned for user comfort and safety.

Figure 6-26 shows an example of suggested positions and sizes of toilet facilities that include the water supply tap as proposed in the Guidelines for Details of Access Facilities for Disabled People (title translated to English) published by KLCH in 2013.

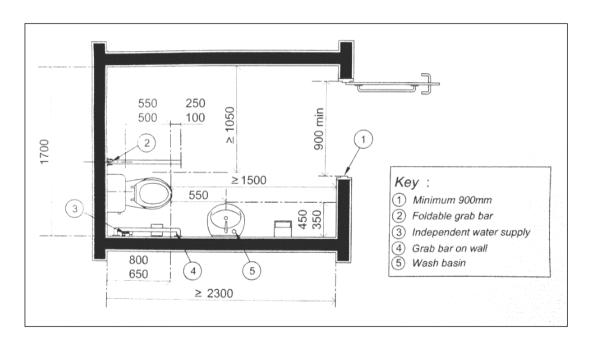


Figure 6-26 Example of suggested positions and sizes of toilet facilities

Source: Jabatan Rekabentuk Bandar dan Bangunan (2013)

However, providing a water hose is not compulsory. Therefore, there are toilets that were not provided with a water hose but supplied with toilet tissue, especially in a modern westernised building such as the Berjaya Time Square building. The

implementation of the guidelines and other sources of physical access information that were mentioned in the context chapter will be discussed in the next chapter.

# 6.2.2.3 Toilet availability and usability

Most buildings that allow public access in KL city centre are generally provided with disabled toilets which have recently been referred to by researchers as 'accessible toilets' (Larson, 2014; Osman *et al.*, 2015). It was observed that the entry for OKU is free of charge even though the toilet management charged for other users (Figure 6-27).



Figure 6-27 Free toilet service for OKU in Central Market

Source: Author (2017)

Some OKU toilets were purposely locked, for example, in Berjaya Time Square building as shared by P5 (male, wheelchair user):

The guard told me that the management doesn't want normal people to enter [OKU toilet], it's just for OKU. They locked it; if you

want to get in, they will open it. There's a guard outside every OKU toilet here.

Therefore, the management has prevented the abuse of OKU toilets by the non-disabled where a precautionary measure is taken by locking the toilet. However, in the go-along journeys, some toilets in other buildings were found to be locked without any notice or signage providing information about the person in charge who should be contacted if OKU need to use the toilet, as in Figure 6-28 (a). Meanwhile, Figure 6-28 (b) shows a temporary OKU toilet provided outside of a building since access to the OKU toilet inside the building was temporarily closed for a refurbishment project. However, it was found that the contact number visible on the toilet door could not be reached.



Figure 6-28 Locked OKU toilet (a) without contact number of the person in charge (b) with contact number

Source: Author (2017)

In the case that the OKU toilet is not available or not accessible, OKU needs to find another alternative, such as trying to look on a different floor level in a multi-storey building, or finding an accessible toilet in a neighbouring building or even just using the ordinary toilet. The OKU toilet in the Cultural Palace is only open if a performance is being held. The day we visited the building, there was no performance, but visitors were still allowed to enter the building. P1 waited for about ten minutes before the Security Police on duty found out who was keeping the OKU toilet key that day. P1 admitted that:

If they [Security Police] can't open it, I have no option but to use the ordinary toilet. But you have to stand by at the main toilet door...the ordinary toilet door can't be closed because my wheelchair is there.

Luckily, at last, they got the key.

In the go-along journey, it was also observed that the OKU toilet outside of the National Museum was misused as the toilet was being used as a janitorial store as shown in Figure 6-29.



Figure 6-29 OKU toilet used as janitorial store

Source: Author (2017)

P7 (male, wheelchair user) was frustrated and asked me to take a photo of the toilet condition as evidence that the toilet was being misused. Moreover, earlier he was

struggling when looking for an OKU toilet inside the museum and had to face vertical access barriers (see Figure 6-12) to reach this toilet (discussed in 6.1.2). Luckily, my fieldwork assistant was with us to assist P7 to negotiate the steep ramp. If I had been with P7 alone, I might have needed to find help from others to push P7 up the ramp to the next floor level to reach the OKU toilet. Thus, obviously, there was a reason for P7 to show his anger and frustration for the OKU toilet being misused as a janitorial store.

# 6.2.3 Ablution and praying areas

Masjid or mosque is a freestanding building for Muslims' religious activity, while surau is a small scale of masjid or can be just a praying room in shopping malls and office buildings. For a public building and buildings that welcome the public, there is a requirement for surau to be included in the design since a Muslim prays five times a day with two prayer times in office hours. Both masjid and surau have an ablution area (for body cleaning with specific steps before praying: face, both hands up to the elbow, part of the head, and both the feet up to the ankle) and the praying area. The masjid and surau need to be accessible since both play a significant role in Muslim daily lives (Kurniawan, 2011; Niya et al., 2015) and on every Friday afternoon, Muslim men are required to pray in the masjid. This section discusses (1) the design of the ablution area, and (2) access to the praying area.

# 6.2.3.1 Design of the ablution area

The best design for an ablution area is when one can easily reach the water to clean the specific body part without other parts of the body and clothes getting wet. For P3 (male, wheelchair user), the easiest way so far is taking ablutions outdoors as shown in Figure 6-30 where his wheelchair can access directly to the water tap, and the water flows into the drain provided. However, taking ablutions outdoors is not suitable for females since Muslim women usually practice covering their hair in public, but water needs to reach part of the head.



Figure 6-30 Outdoor ablution area

Source: Author (2017)

Yet, most of the indoor ablution areas observed on the go-along journeys were not easily accessible by wheelchair users. In most ablution areas, a kerb is present to block water from wetting the floor, but it becomes a barrier preventing the wheelchair user from getting close to the water tap. For the purpose of this research, P1 (female, wheelchair user) demonstrated how she managed to take her ablutions by getting down from her wheelchair as shown in Figure 6-31.





Figure 6-31 Taking ablutions by transferring from wheelchair to the kerb

However, not everyone has the ability to get down from their wheelchair. Besides, by sitting on the kerb while taking ablutions the disabled person's clothing is prone to become wet. Meanwhile, Figure 6-32 shows some other examples of ablution area design that are not disabled-friendly. Thus, instead of the need to negotiate barriers in the ablution area, OKU would usually prefer to take ablution in a toilet with a water tap. However, in general, many Muslims do not feel comfortable to take ablution in a toilet since they are concerned about the toilet hygiene affecting the ablution purity.







Figure 6-32 Examples of design of ablution area with kerbs that create barrier to user

Source: Author (2017)

Nonetheless, it was observed that the ablution area design in Lanai Kijang, one of the properties of Bank Negara Malaysia (the National Bank of Malaysia) in KL city centre, has some thought for the diversity of users (Figure 6-33). It can be used for those who need a stool or seating, and can be accessed near the water tap by wheelchair users. The water drainage is provided below the floor level for minimal water splash and covered with grating as is commonly seen outdoors (refer back to Figure 6-30). Yet, this inclusive design thought is not commonly found in ablution areas around KL city centre buildings.



Figure 6-33 Design thought for a diversity of users

Source: Author (2017)

# 6.2.3.2 Access to the praying area

According to P3 (male, wheelchair user), some *masjid* management provide indoor wheelchairs while some provide a kind of plastic as a wheelchair sock for hygiene purposes. In Masjid Negara (National Mosque), P8 (female, wheelchair user) was required by the *masjid* staff to transfer from her wheelchair while entering the *masjid*. The staff assisted P8 to transfer from her wheelchair to the *masjid*'s wheelchair as shown in Figure 6-34 (a). The introduction of the indoor wheelchairs shows

recognition for a wheelchair user to use masjid facilities. Yet, in the praying area, praying attires were hung far from the wheelchair user's reach – refer to Figure 6-34 (b). Eventually, after being assisted in reaching the praying attire, P8 performed her prayer.



Figure 6-34 Access facilities in *masjid*(a) assisted indoor wheelchair transfer (b) highly hung praying attire (c) accessible praying area

Source: Author (2017)

However, getting access into a *masjid* is not always possible. Regardless of facing an inaccessible *masjid* physically, P3 and P7 (males, wheelchair users) also claimed that they were even denied the opportunity to bring their wheelchair into the praying area since the *masjid* management questioned the cleanliness of the wheels. Yet, wheelchair socks or indoor wheelchairs are not commonly provided in *masjid* and *surau* in KL city centre. This situation has discriminated against wheelchair users from practising their rights to freely use religious facilities. As well as providing physical access such as ramp and lift in *masjid*, wheelchair socks or other support could avoid any issue on the wheelchair cleanliness; then, nothing will lessen their capability to perform prayers as other citizens.

# 6.2.4 Summary of the accessibility of buildings' internal features and services

This section discussed the reality and potential of the internal features and services inside buildings in KL city centre in offering OKU's inclusion. More transformative solutions (Fraser, 2003) i.e. the universal design thought and action is needed for more inclusive internal features and services in buildings that is practical to be used by all users. In addition, the location and position of each facility also determine its practicality. Table 6-3 summarises access facilitators and barriers in buildings' internal features and services based on the observations and conversations from the go-along interviews.

Table 6-3 Access facilitators and barriers in buildings' internal features and services based on the go-along interviews

Space/facilities	Facilitators	Barriers
Counters and display areas	The introduction of low counter	Inappropriate height of counter for diversity of users' height and wheelchair users
	Appropriate height of shop display and exhibition area	Exhibition on platforms without wheelchair access and facilities in the exhibition area (e.g. binocular at observation deck)
	Food menu placed on the wall with appropriate size in food court and restaurant	Nasi campur display was too high for wheelchair user
Toilets and sanitary facilities	Appropriate dimension and location of toilet door and the interior facilities	Inappropriate dimension and location of toilet door and interior facilities
	Different sex of OKU toilet located individually (not in the main toilet)	OKU toilet located in the main toilet -discomfort for assistant of opposite sex and other users
	Clear OKU toilet signage provided	Absence of OKU toilet signage
	OKU toilet is locked but guarded	Locked toilet without contact information
	Usable OKU toilet	OKU toilet misused as a janitorial store
Ablution and praying areas	Outdoor ablution area is generally more accessible but not suitable for female users	Majority of the indoor ablution areas are not accessible to wheelchair users with kerb as a barrier preventing them from reaching the water tap

The previous two sections of this chapter have identified facilitators and barriers faced by OKU in entering and using buildings; the next section discusses physical access outside buildings (the street level environment).

## 6.3 Street level environment

According to discussions with most of the go-along participants prior to the start of the journey, generally, the participants had intended to visit more buildings and places. Eventually, most of the journeys failed to meet the participant's planned itineraries within the agreed time allocated since the they faced multiple barriers along the journey to KL city centre, i.e. the transportation barriers (e.g. the gap issue between the platform and the train as discussed in Chapter 5), buildings and architecture (i.e. at the entrance and circulation, and internal features and services), and the street level environment barriers (i.e. pavement obstructed with street furniture). This section focuses on the street level environment and the barriers and facilitators experienced by OKU; it discusses (1) pavements, arcades and streets, (2) crossings, kerbs and changes of level, and (3) landscaping, street furniture and utilities.

#### 6.3.1 Pavements, arcades and streets

Similar to access scenarios in buildings, generally, in a redeveloped and newly refurbished area, the pavements and corridors facilitate easy access for OKU. The width of the pavements and corridors enable two-way access of wheelchairs concurrently without obstruction (see Figure 6-35).







Figure 6-35 Examples of seamless pavement and corridors (a) unobstructed pavement (b) seamless corridor at Jalan Tuanku Abdul Rahman shophouses (KLCH project) (c) a step-free corridor with gentle gradient at Pertama Complex

P4 (male, skateboard user) noted that Jalan Tuanku Abdul Rahman has a better access than before (see Figure 6-35b). "Here [Jalan Tuanku Abdul Rahman] is now OK. DBKL [KLCH] has refurbished this area", P4 explained.

However, it was also observed that an accessible pedestrian walkway does not always offer easy access to the adjacent building. For example, when there are steps to enter buildings as in the red box in Figure 6-36. This example indicates that access facilities are still not comprehensively provided even when the building is located in a redeveloped area such as in KL Golden Triangle (Bukit Bintang area).



Figure 6-36 Accessible pedestrian walkway but inaccessible building entrance

The majority of the arcades at shophouses in KL city centre were still in a split level that is troublesome for a person with mobility difficulties to step up and down while using the arcades (see Figure 6-37a). P4 preferred to skateboard on the road as shown in Figure 6-37 (b) rather than skateboarding on an arcade with different levels. From my observation, skating on a road is very dangerous for P4 since his height while skating is below car windows and he hardly could be seen by the drivers. However, P4 has the skill to manoeuvre his skateboard without being hit by the vehicles. Other than P4, P5, P12 and P15 (males, wheelchair users) also preferred to manoeuvre their wheelchairs on the road compared to a staggered pavement and arcade.





Figure 6-38 Barriers on arcade and street (a) arcade with raised/staggered floor (b) skating on a road

P15 admitted that, "[Using] the road is easier but dangerous especially in heavy traffic". P15 with his wife (also a wheelchair user) compromise their safety by using their powered wheelchairs on the road to reach the front of Sogo (shopping mall) to sell his artwork every day as shown in Figure 6-38.



Figure 6-37 Wheelchair users compromising safety by wheeling on the road

Source: Author (2017)

Another issue on pavements is the uneven surface which is usually caused by a lack of maintenance (Figure 6-39) and improper repair/reinstallation of the broken finishes (Figure 6-40). These examples of pavement conditions also lead a person with mobility difficulties to use the road as it offers a more comfortable surface for continuing their journey.



Figure 6-39 Broken pavement

Source: Author (2017)



Figure 6-40 Poorly repaired/reinstallation of pavement surface

Source: Author (2017)

For P10 (male, wheelchair user), the poor condition of the pavement surface was not only uncomfortable for him but also affected his health condition. During our goalong journey, when using an uneven pavement which was being upgraded under a refurbishment project (Figure 6-41), P10 had a leg muscle spasm. He claimed that the uneven surface of the pathway is one of the factors that can trigger muscle spasms among those with a spinal cord injury.



Figure 6-41 Pavement under upgrading work

Source: Author (2017)

There are situations when disabled people fall down, and symptoms related to their impairment such as pain and spasm intensify (Shakespeare & Watson). In P10's case, it is also possible to relate his spasm to his feeling and emotion in negotiating the uneven surface. Thus, explaining how structural disablism is also indirectly psycho-emotional disablism (Reeve, 2014). Both dimensions of disablism that produce constant pain to disabled people undermine their quality of life (Shakespeare, 2018). Besides, the degree of experiencing structural and psycho-

emotional dimension of disability is also affected by impairment and other contributing factors. Hence, people with an impairment experience disability differently from one another while facing the same barrier (Shakespeare, 1993 in Reeve, 2010).

## 6.3.2 Crossings, kerbs and changes of level

It was observed in the go-along journeys that some crossings in between pavements at entrances to driveways were raised (see Figure 6-42). This innovation minimises the changes to the street level and offers comfort for a person with mobility difficulties, especially for the wheelchair users, by providing a seamless crossing.



Figure 6-42 Examples of raised crossing to level with pavement

Source: Author (2017)

According to IM14 (implementer, KLCH urban transport engineer), the allocation to upgrade the crossings came from the federal government under the Greater KL/Klang Valley project (see the Economic Transformation Programme in 4.1.1 as summarised in Table 4-1). In addition, there were also areas with an unraised

crossing but with the pavement sloping down gently towards the crossing which also facilitated easy movement for all pedestrians (Figure 6-43).



Figure 6-43 Pavement sloping down gently towards the crossing

Source: Author (2017)

OKU have a smooth journey in using pedestrian walkways when they do not have to struggle to go up/down to/from the street level to continue their journey. However, generally more crossings in KL city centre were still not friendly to OKU, either due to by physical barriers such as shown in Figure 6-44 (a) or by attitudinal barriers such as shown in Figure 6-44 (b). It was observed in the go-along journey that accessibility problems cannot be solved if only the physical barriers are removed but not the negative attitude of other people.



Figure 6-44 Examples of barriers in crossings (a) kerb as a barrier in the middle of the crossing (b) society's attitude that do not give priority for pedestrian to cross

A kerb without a kerb cut is one of the main barriers for OKU in KL city centre, especially for wheelchair users (see Figure 6-45). This kerb cut issue was also discussed as one of the barriers in transportation when missing kerb cut adjacent to bus stops were discussed in the previous chapter.



Figure 6-45 Examples of kerb without a kerb cut

Source: Author (2017)

Barriers to get to the bus stops are not only caused by inaccessible bus stops but to a greater extent in connection with barriers on the streets and pavements as highlighted by R1 (wheelchair user, OKU representative):

We can have a city that provides everything but for a citizen to enjoy it, they have to get out from the house. The first barrier is on how to get to the bus stop from the house.

The lack of connectivity resulted in interruption to continue the journey. IM8, (transportation operator) claimed that buses and transportation terminals provided by Prasarana provide universal access, but the problem is that the external environment is not equipped with OKU facilities. IM8 expressed the view that, "KL don't have the end to end connectivity, no linkage to passenger's end destination".

P8 (female, wheelchair user) chose to take transportation (Uber) from the Central Market to the National Mosque since she was not confident in facing the possibility of barriers in the street based on her previous experience from the start of our goalong journey (e.g. high kerb and obstructing tree on the pavement).

Nonetheless, when the photograph in Figure 6-45 was shown to IM5 (implementer, KLCH engineer cum pedestrian designer) for discussion, he explained that:

These [the photos] are the old pedestrian walkways. We alert that OKU can't climb (the kerb). There's a project coming soon to upgrade this area. Yet, we don't know when the project will commence.

The statement from IM5 indicates that KLCH is aware of the current access condition in KL. It is also noted that there were attempts to provide kerb cuts in several places such as shown in Figure 6-46. However, it can be seen from Figure 6-46 (a) that the lowest point of the kerbs was still not effectively designed to facilitate wheelchair access (and also including prams and trolleys). Meanwhile, Figure 6-46 (b) shows that the 'cut' was likely done as an afterthought as the shape is not suitable for wheelchair to pass through.



Figure 6-46 Examples of ineffective kerb cut

(a) the lowest point is still high for wheelchair user (b) odd shape of the 'cut'

Source: Author (2017)

Generally, the design of the kerb cut in KL city centre indicates a possibility that there is awareness among the providers of the need to provide better access but a lack of technical knowledge and skills in providing the facilities.

There were good access facilities in certain places in KL city. Yet, there was no signage showing the accessible route (as also highlighted in 6.1.1 on alternative entrances to enter buildings). P13 (male, wheelchair user) was frustrated when facing steps in our go-along journey in a park near the Anniversary Theatre (Figure

6-47a). P13 expressed that "It's not that easy, there are places...ahh...difficult to access; it's difficult!" This expression comes with emotion that indicates disappointment while the current access provided. Eventually we found a nicely designed ramp further up the location of the steps after looking for an alternative route (Figure 6-47b).



Figure 6-47 Access in a park (a) inaccessible steps (b) accessible ramp

Source: Author (2017)

However, it was also observed in the go-along journey that some of the ramps provided were not facilitating OKU access (refer back to Figure 6-12 in 6.1.2). Some other places denied access for wheelchair users since the area could be accessed only by climbing steps. For example, in accessing the National Monument (Figure 6-48).





Figure 6-48 Access to the National Monument (a) inaccessible to wheelchair users (b) the monument at the top

Source: Author (2017)

P11 (male, wheelchair user) was disappointed when he could not access the monument; he cried:

Tugu Negara [the National Monument] is something special for Malaysian people, but I can't access it. This is my first opportunity to visit the historic place...with you. But it disappoints me!

I let P11 wait while I tried to find an alternative way to get to the monument. As I could not find any accessible route, I planned to get help from others to carry him up. Unfortunately, on that day there were only a few visitors and they seemed not fit to lift P11 (females and elderly males). P11 was reluctant to wait for a suitable person to ask for assistance as the weather was too hot. We just stood under the sun without any shaded area unless we climbed a staircase to get shelter. P11 thus decided to call an Uber to transport us to our next destination. Along the way to the next destination, P11 expressed his dissatisfaction and frustration for not being able

to access the National Monument. The way P11 reacted angrily to the inaccessible monument exemplifies how the structural disablism affects human emotions.

For those with mobility difficulties but with the ability to walk and climb steps, handrails really help. For example, in KLCC Park, ramps are provided but not adjacent to the steps. Since P2 (female, walking unaided) easily becomes tired, she chose to climb the steps nearer to her in exploring the park. It was observed that there were steps with handrail and some others were not provided with handrails even though the steps are all located in the same park with the same management (see Figure 6-49). P2 also wished that more benches could be provided. "So, people like me could have more places to rest when needed", she explained.



Figure 6-49 Person with mobility difficulties climbing steps (a) steps with handrail ease the user (b) steps without handrail need user's focus and balance (c) OKU need assistance in climbing steps without handrail

Source: Author (2017)

# 6.3.3 Landscaping, street furniture and utilities

Landscaping elements, especially the softscape, could provide shades for the pedestrian. Yet, in controlling safety and beautifying KL city centre with landscapes and street furniture (e.g. bollards, seating and street lighting), some of the elements present barriers to OKU, especially the wheelchair user (see Figure 6-50 for examples).



Figure 6-50 Landscaping that obstructs walkways

Source: Author (2017)

The responsible department in KLCH seems aware that some landscapes are obstructing the pavement as according to CL2 (collaborator, KLCH architect, access audit trainer):

I told the Landscape Department that there's a big tree obstructing the pedestrian walkway in Jalan Ampang. But they just said that the tree has been identified to be cut down. However, there were also other 'old pedestrian walkways' with access barriers that were designated for upgrading according to the KLCH implementing officer (discussed in 6.3.2) but without an exact date for commencement of the work. Hence, there is no information for OKU to expect a time for the area to be accessible.

In the go-along journey with P18 (male, powered wheelchair user), we tried one of the newly upgraded pavements (see Figure 6-51). However, P18 had to use the roadside when bollards were placed on the pavement (Figure 6-51b). According to IM12 (implementer, KLCH planner temporarily seconded to another government agency), the OKU gates and bollards are designed and located at the pavement to prevent motorcycles from using and parking on the pavement.





Figure 6-51 A stretch of upgraded pavement (a) pavement with OKU gate (b) pavement with bollards

Source: Author (2017)

However, the OKU gates were also experienced as barriers when P18 struggled to access one of the gates as shown in Figure 6-52.



Figure 6-52 Research participant struggling to access the OKU gate

Source: Author (2017)

In manoeuvring his powered wheelchair to access the gate, P18 made several attempts before finally getting the right angle to access through it. The design of these gates which is supposed to enable wheelchairs to pass through and at the same time prevent other vehicles from misusing the pedestrian walkway, appears to be a barrier for OKU as well. This situation can be interpreted that the designer of the OKU gate failed to secure sufficient information/knowledge regarding different types and sizes of wheelchairs. Hence, they overlooked the powered wheelchair size as used by P18. This led to a feeling of exclusion for P18 as his mobility needs (including the mobility aid) were not being recognised in the design process.

However, regarding the use of the OKU gate and bollards for controlling the misuse of the pavement, IM11 (implementer, professional architect (PSP)) claimed that,

"Sometimes people do unpractical projects just to beautify spaces. To me, it's a waste if people can't appreciate it". What IM11 said could potentially be related to P18's case when P18 was unable to easily access the OKU gate which was supposed to be designed for wheelchair access and at the same time preventing motorcyclists from using the pavement (Figure 6-52). Yet, incorporating landscaping into the design, construction, and management of cities requires the co-operation of stakeholders (McDonnell & MacGregor-Fors 2016) in order to fulfil the purpose of providing the elements for usability.

Utilities that were placed in the middle of pavement obstructing OKU were also found in the go-along journeys. For example, there was a bus stop hindering the participant from continuing his journey on a pavement in front of KL Sentral (Figure 6-53a), and utilities boxes or other man-made remains, and street lighting as in Figure 6-53 (b).





Figure 6-53 Utilities obstructing pavement (a) bus stop in the middle of pavement (b) utilities boxes and street lighting on pavement

Source: Author (2017)

Other than that, a steel grating drain cover as in Figure 6-54 could pose danger to an OKU with mobility aids such as crutches, a stick or wheelchair. These mobility aids could possibly slip in-between the bars of the grating. The majority of the wheelchair participants were not confident to wheel their wheelchair on the grating. Some of them were even phobic to pass through drainage grating since they had some bad experience either while their wheelchair was being pushed by others or themselves wheeling over it, and struggling to do so.





Figure 6-54 Grating drain cover (a) big gap in between two piece of gratings (b) participant was not confident to wheel through the grating vertically

Source: Author (2017)

In a newly upgraded pavement however, barriers in the middle of the walkway such as trees, street lighting and utilities boxes were relocated to ensure that the path is free from any barriers. Meanwhile, the grating drain covers have been replaced with concrete (see Figure 6-55).





Figure 6-55 Different design of the concrete drain covers replacing the steel grating

Source: Author (2017)

However, according to IM14 (implementer, KLCH urban transport engineer), there were also challenges in relocating landscape and utilities in upgrading the pavement. As long as the pavement provides a 1,500 mm width that is free from any obstruction for wheelchair access, the area is considered accessible or 'barrier-free' according to IM14 as he explained:

What I mean as barrier-free is a minimum of 1.5 metres [1,500 mm] clear width. Free from any object for OKU access, it's more for the wheelchair [access]. However, the clear width of 1.5 metres is not necessarily straight, it might be curvy, but it must be 1.5 metres.

This might be the reason for some newly upgraded places to have an environment such as shown in Figure 6-56. However, by looking at the Figure 6-56, it is observed that the pavement has a poor workmanship that could also affect OKU's comfort while using it.



Figure 6-56 Condition in one of the newly upgraded pavements

Source: Author (2017)

# 6.3.4 Summary of the accessibility of the street level environment

Similar to accessibility of buildings (for the entrance and circulation, and the internal features and services), generally, the newly upgraded street environment areas had provided improved accessibility, even though in some areas poor workmanship had adversely affected the user's comfort. There were also contrasting priorities that needs to be addressed. The newly introduced street furniture i.e. OKU gate and bollards were meant to be as a safety measure for the pedestrian. Yet, while controlling the motorcyclists from using the pavement, wheelchair access was impeded as well.

There were more areas that have not been upgraded compared to refurbished and redeveloped areas. Hence, there were still many pavements, corridors and streets that were not OKU friendly, especially for wheelchair users. Table 6-4 summarises

access facilitators and barriers in the street level environment based on observations and conversations from the go-along interviews.

Table 6-4 Access facilitators and barriers in the street level environment based on the go-along interviews

Space/facilities	Facilitators	Barriers
Pavements, corridors and streets	Wide pavements and corridors that are sufficient for two-way access of wheelchairs	Narrow pavements and corridors
	Seamless pavements and arcades that offer continuity of movement	Split levels and changes of pavements and arcade levels
	Even street level surfaces that are comfortable for users to push wheelchair on a street	Unsafe roads and streets with vehicles
	Pavements and arcades with even surfaces	Uneven surfaces of pavements and arcades caused by lack of maintenance and improper repairs
Crossings, kerbs and changes of level	Raised crossings up to pavement level minimise changes of level	Obstructions in crossing (e.g. kerb and other people's attitude)
	Gentle pavement slope/gradient towards street level	High kerb without a kerb cut
	Kerb cut provided	Kerb cut design not according to standard
	Ramps and handrails provided	Steps in public space
Landscaping, street furniture and utilities	Landscaping that gives shade to pedestrians	Landscaping in the middle of pavement that obstructs the pathways
	Seating provided for OKU to rest	No seating, or seating obstructing the pavement
	Barrier gate provided therefore motorcycles cannot access pavement for pedestrian	Barrier gate opening too narrow for wheelchair access
	The introduction of concrete drain covers for a more comfortable surface	Danger posed by steel grating drain covers
	Relocation of the obstructing landscapes, street furniture and utilities to ensure 1,500 mm clear width for OKU access	Poor workmanship of the upgraded area affects user's comfort

# 6.4 Conclusion

This chapter has contributed to the understanding of physical access issues among OKU in accessing buildings and the street level environment in KL city centre. Generally, OKU are still struggling for inclusion since there are so many impediments preventing them as evidenced in the go-along interviews discussed in this chapter. Clearly, the disabling barriers are not only physical (structural) but also act through a psycho-emotional dimension. However, the way OKU perceived barriers in both structural and psycho-emotional aspects was different from one person to another. These perceptions are based on their personal biographies (Reeve, 2004), which comes from intrinsic and extrinsic factors (Shakespeare & Watson, 2016).

In summary, once a building is entered, concerns are faced when barriers in the vertical and horizontal circulations inside the building. Many issues are related to the changes of levels that particularly involve staircases, steps and raised floors. In addition, the participants were also having issues while using and/or reaching the internal features and services provided in buildings i.e. the counters and display areas, toilet and sanitary facilities, ablution and praying areas. In addition to accessibility issues to enter buildings and circulate inside buildings, there are also difficulties for OKU in going from one building or place to another destination where they usually faced barriers in the street level environment. Access barriers faced in this outdoor environment include steps and changes of level on pavements, arcades and the street. This also included their surface condition. Moreover, design of the landscaping, street furniture and utilities boxes could also obstruct OKU movement

while using these paths. Apart from these barriers, other people's attitude towards OKU also plays a significant role in determining their inclusion in the mainstream society.

There are four concluding points extracted from this chapter that appears to be the main factors hindering OKU inclusion in buildings and the street environment: (1) the lack of connectivity from one place to another in the street level environment, (2) the inappropriate design of access and facilities provided both inside and outside buildings, (3) the lack of safety control and comfort, and (4) negative attitude of the general public and the service providers. The issues of safety and negative attitude of other people towards OKU were also highlighted as part of the main factors hindering OKU's inclusion through the transportation system in the previous chapter.

First, on the lack of connectivity from one place to another within KL city centre, there is evidence that buildings are accessible especially in the redeveloped and newly refurbished area; however, those areas are disjointed. Hence, the value of accessible buildings and areas are compromised if there are a lot of barriers at street level that impede journey connectivity. Connectivity issues might occur in different ways: (a) in situations where accessibility from one place to another is not provided, (b) where access is provided but there is a lack of maintenance, (c) where poor pavement surface installation/repairing work can be found, (d) in places where barriers obstruct pathways, and (e) in changes of level without appropriate connecting instruments.

Based on the fieldwork, it has been observed that wheelchair users are the most affected by physical barriers (as also observed by Clarke et al. (2008) and Gaete-

Reyes (2015) in developed countries) and by the lack of connectivity in the built environment, compared to those who can walk with other mobility aids. Uninterrupted connectivity could be achieved through the form of accessible pedestrian walkways and public transportation (Hussein & Yaacob, 2012). In the situation where only certain areas in KL city centre have an uninterrupted connectivity, access information either in the form of signage, flyers and even through digital apps would benefit OKU. Moreover, supplying readily accessible information may reduce the feelings of anxiety and uncertainty among OKU (Marston, 2002) regarding entering and exploring KL city centre.

Second, with regard to access facilities provided, barriers were caused by inappropriate design of those facilities. This raises a potential problem related to the lack of technical knowledge among the providers which will be discussed in the next chapter. Inappropriate design includes the ineffective dimension of facilities, the inappropriate gradient and design of ramps, lack of signage and information in buildings, and the faulty location (unreachable) of grab bars and handrails. There are also facility designs that are nice in appearance but impractical to be used by OKU. In making the environment more accessible it is necessary for the design professionals to have the necessary knowledge, skills and understanding to lead the way (Hanson, 2004). Access audit (Holmes-Siedle, 1996) of buildings and facilities can be a starting point in the effort to improve accessibility in the built environment provided that rectifications are made accordingly.

Those barriers can be interpreted as 'architectural disability' (Hanson, 2004) produced by architects and facilities designers, not necessarily on purpose, as a

result though such barriers discriminate OKU. However, it was also evidenced that in many ways the facilities are accommodating, but the action was often affirmative and afterthought. Even though it is noted that adaptation can be made if the current design of the facilities is not disabled-friendly (Holmes-Siedle, 1996), adaptation incur costs (Kose, 1998), while accessible and inclusive facilities should be well designed from the initial design stage (Kose, 1998; Goodall, 2010). Universal design that is usable to the greatest extent of users (Mace *et al.*, 1991) is a transformative solution (Fraser, 2003) in achieving an accessible urban environment. It could reduce the need for human assistance and assistive technologies (Barnes, 2011) for OKU. Hence, with the rise in universal design awareness and implementation among the access providers in some buildings (e.g. Pavilion – see 6.1.1) and areas (e.g. Jalan Tuanku Abdul Rahman – see 6.3.1) in KL city centre, the future prospects of OKU to access KL city centre independently seem to be better.

Third, regarding the lack of safety control and comfort in KL city centre environment. There are a few safety issues that indicate contrasting priorities that need to be further addressed by the responsible bodies. In the go-along journeys, it was evidenced that OKU safety and comfort were compromised for other reasons (e.g. in the attempt to avoid motorists from using or parking on pavement, in the effort to beautify pavement with street furniture and provide shade with trees, and in conserving heritage buildings). Hence, there is a need for the responsible bodies to evaluate the cause and effect towards OKU versus other parties benefits while implementing certain design and policies. It is noted that some other matters are given more priorities in design, planning, and policies.

At the time that the fieldwork was undertaken, many of the areas in KL city centre were already identified as requiring upgrading. Some of the barriers preventing OKU accessibility had been noticed by the responsible bodies; some of the areas were upgraded, some were under upgrading work, while some other areas were waiting to be upgraded. However, there was no information (e.g. signage) directing the pedestrian to an alternative route. Using the uneven pavement under refurbishment was not only uncomfortable for some participants but also harmful (i.e. generating leg spasm attack). In addition, there is no information on the date of commencement of upgrading and the expected date that the specific area will be accessible for OKU. Since the accessibility of buildings and places are uncertain, OKU therefore could not plan for a seamless journey. It should be noted that better access in the built environment offers a greater choice for OKU and makes them more confident with their mobility, thus, empowers them for more opportunity to enjoy social life and contribute to society.

Finally, with regard to the negative attitude of the general public and service providers, barriers are not just physical but also attitudinal (Carson, 2009). There are similarities in issues faced by OKU in accessing buildings and the street level environment, as well as in commuting to and within KL city centre (discussed in the previous chapter). Along with the physical factors i.e. facilitators and barriers in buildings and the street environment, it was observed that the attitude of society in recognising human diversity (either negative or positive attitude) influences OKU's inclusion. This can be seen when many of the non-OKU entered lifts without giving priority to OKU. Some of them did not acknowledge OKU and acted as if there were no OKU present even though their impairment is visible. Priority was also not given

for OKU (and for other pedestrians as well) when vehicles stopped on the pedestrian crossing at traffic lights. These socially constructed barriers (Oliver, 1986) are caused by the lack of recognition (Fraser, 2003) towards OKU. Meanwhile, the negative attitude of the service providers can be seen from the example given on the misuse of the OKU toilet as a janitorial store. Again, it can be argued that the negative attitude observed among the public are partly caused by the lack of awareness on the importance of an accessible built environment for OKU.

Overall, in order to enable OKU to participate in activities offered in KL city centre, accessibility ideally starts at the very beginning when people leave their home, taking a variety of transportation modes until they reach their destination or are connected to the next destination. Nonetheless, barriers are not just physical but also attitudinal. In order to remove physical barriers in the built environment, individuals' attitude and organisational support from the responsible bodies are also required. There are regulations, guidelines and standards set to be implemented by design professionals prior to getting the building plan approval (discussed in Chapter 4). Furthermore, the issuance of the Certificate of Completion and Compliance by the registered architect of the project undertaken should ensure compliance with users' access needs. Yet, accessibility problems for OKU in reaching and entering buildings and circulating inside buildings still occur. Hence the next chapter will scrutinise measures taken by the professional stakeholders in providing access for OKU.

#### **CHAPTER 7**

# THE EFFECTIVENESS OF MEASURES BEING TAKEN BY PROFESSIONAL STAKEHOLDERS IN PROVIDING PHYSICAL ACCESS FOR OKU

Various measures have been taken by professional stakeholders to provide physical access for disabled people's inclusion in KL city centre. Based on data gathered from the providers (including the collaborators), information in the context chapter (Chapter 4), and data gathered from disabled users, measures could be summarised as (1) upgrading transportation facilities; (2) formulating and imposing guidelines (regulators) and complying with recognised standards for OKU access requirements in a development (implementers); (3) conducting and participating in training and awareness programmes; and (4) including the participation of OKU in design and planning processes.

By improving urban public transportation under the Government Transformation Programme which started in 2009, and initiating the Greater KL/Klang Valley project under the Economic Transformation Programme (2010–2020), the Malaysian government has shown their awareness of OKU's needs through their efforts in reconfiguring KL's transportation, infrastructures and facilities. Nevertheless, findings from the go-along journeys with disabled participants indicate that generally, the transportation services and the accessibility of buildings and the street level environment are not totally OKU-friendly as OKU still required assistance from

others to gain access to KL city centre. Although many efforts have been made, the current physical access provided still has abundant barriers for those with mobility difficulties and does not holistically facilitate their inclusion in KL city centre.

This chapter discusses and evaluates the effectiveness of professional stakeholders' measures in providing inclusive physical access in KL city centre. It addresses the providers' views in providing physical access, i.e. from the regulatory bodies' perspective (for building control and the planning authority), and the executors in providing OKU with access and facilities (e.g. architects and engineers). It also considers the viewpoints of the collaborators i.e. the academics and researchers, access consultants and access audit trainers, standards officer, and OKU development officer. In addition, it also reflects OKUs' responses and their representatives' viewpoints.

The discussions are organised into three sections: (1) planning and implementation of physical access for OKU, (2) accessibility education and awareness-raising programmes, and (3) participation and collaboration among the stakeholders. For transportation, the provision is discussed in Section 1 in terms of transport-related facilities, i.e. transportation hubs and train stations (as part of buildings), and bus stops (as street furniture in the street level environment).

# 7.1 Planning and implementation of physical access for OKU

KL city planning and development abides by various legislation enacted by the federal government such as the Local Government Act, 1976 (Act 171), the Street,

Drainage and Building Act, 1974 (Act 133), and the Persons with Disabilities Act 2008 (Act 685) (presented in 4.3.2 and 4.4.2). In addition to the legislation, there are numerous policies, guidelines, and standards formulated by both the Malaysian federal government and the local government (Kuala Lumpur City Hall (KLCH)) as part of the regulations on the provision of physical access for OKU. Even though such regulations have existed since the early 1990s, implementation issues are continually highlighted by researchers (Hussein & Yaacob, 2012; Ariffin & Zahari, 2013; Kamarudin *et al.*, 2015), and barriers were experienced by disabled research participants in the go-along journey as discussed in Chapter 5 and Chapter 6. Therefore, this section discusses the issues and challenges related to the planning and implementation of physical access under the theme of (1) regulation compliance and plan submission requirements, (2) enforcement, monitoring and auditing, and (3) KLCH in-house project constraints.

#### 7.1.1 Regulation compliance and issues on plan submission requirements

The Uniform Building By-Law (Federal Territory of Kuala Lumpur), 1985 (UBBL), and the Planning Act 1982 provide the specific legislation for KL planning and development. Meanwhile, the voluntary Malaysian Standards (MS) on OKU access were made compulsory with the insertion of UBBL 34A in 1991 (explained in 4.3.2.4 and summarised in Table 4-3) and in UBBL 124A (1992) that is specifically for KL. The departments comprising the Planning Sector of KLCH (i.e. the City Planning Department, Infrastructure Planning Department, and Building Control Department) work closely with the consultants submitting a development plan (the Principal

Submitting Person or PSP) as mentioned in 4.4.2.1. Although there is no MS code of practice on accessible design in transportation in Malaysia, the requirements for the erection of transport-related buildings also need planning permission and building plan approval from the local authority.

### 7.1.1.1 Regulation compliance for building plan approval

There is a strong power relation between the local authority as the regulatory body and the PSP in the submission of building plans for approval. The power of the local authority could persuade the general public to follow guidance (Smith, 2014) and could influence the result in the built environment. The power relations are seen as the 'tangible expression of the legitimate authority' (Nag 2018, p.122) when access requirements imposed by KLCH need to be adhered to by the PSP before building plan approval is issued.

Plans submitted by the PSP must indicate local authority access requirements.

Moreover, RG6 (regulator, KLCH building control officer) explains:

They [PSP] must state in the plan, "I acknowledge that all the facilities for the disabled will comply with Malaysian Standard 1183, Malaysian Standard 1184:2014 and the OKU Act 2008. I agree to accept full responsibility accordingly."

RG6 further explained that the PSP must comply with what he considered as four minimum requirements for OKU facilities: the parking space, ramp, OKU toilet, and lift. It appears that RG6 disregarded further important access requirements other

than the four minimum requirements he stated. For example, pathways and corridors in buildings have to be designed with specific dimensions/width that enable easy access for disabled people to pass through. Also, the size of entrances and manoeuvering space inside buildings must be carefully designed for wheelchair users (Gaete-Reyes, 2015).

In the go-along interviews, most of the disabled participants noticed that new and refurbished buildings and train stations are usually more accessible. IM8 (transportation operator) explained:

For station upgrading and new buildings, we engaged a consultant [PSP]. All of the local authority's requirements should be complied with including OKU [facilities]. So, any design with regard to the new structure will be designed based on UBBL and the local authority requirements. That's our initiatives from 2009 until the project completed in 2014.

The above interview responses indicate that there seems to be no problems regarding conformation with regulations on OKU access provision when the providers positively responded to the local authority's requirements. Nevertheless, there was still contradictory evidence from users' perspectives and observation conducted during the go-along sessions while accessing KL city centre with the research participants. Even in new and/or refurbished buildings and public spaces, barriers were still experienced for the mobility impaired with some of examples given

in Chapter 5 and Chapter 6 (e.g. the gap between the platform and the train door in LRT, and vertical access issues in KL Monorail).

On the other hand, generally, OKU access facilities are not voluntarily provided by developers and/or their design consultants (e.g. the architect) unless required by the regulatory bodies. Voluntary approaches are unlikely to stimulate the implementer to provide accessibility, as they cite reasons such as a lack of demand and unnecessary risks to profits (Ward & Jacobs, 2016). Access facilities are provided in the plan submitted for the sake of complying with requirements as part of the plan approval process. IM11 (implementer, professional architect (PSP)) admitted that "if they [KLCH] ask, then we provide. We just do it for compliance [providing access facilities in the plan submitted for approval]".

Meanwhile, IM9 (implementer, professional architect (PSP)) highlighted that "society won't entertain OKU needs unless imposed by the authority". His statement points to a lack of recognition of OKU rights and insufficient incentives for OKU provision when access for OKU is only provided if the requirements are made compulsory by the authority body. IM9 further thought, "Anywhere in a third world country, I think, if there's no regulation [on OKU access facilities], no one will provide [access]".

The providers also provide minimal access facilities to meet local authority requirements. For example, as confessed by IM6 (implementer, professional architect (PSP)):

Let say, in a high-end condominium project, if they [local authority] don't require OKU parking, the developer won't provide it. If they required one OKU toilet in a mall, we won't provide extra.

It could be deduced from this statement that the developer wished to minimise expenses related to provision for disabled people. Yet, providing a universal design or inclusive design as termed by Newton *et al.* (2002) does not only benefit OKU but inclusively caters for all users (Yusof & Jones, 2014) and this could promote market shares and increase business profitability (Casserley & Ormerod, 2003).

Beside the lack of OKU recognition and incentives, the minimal provision of OKU facilities might relate to the financial constraints faced by most developing countries (Biyanwila, 2010), especially if the project is done with a small budget within a specific time frame from the government (further discussed in in 7.1.3.1 on resource issues). Some developers would apply for a waiver in providing OKU access facilities as also explained by IM6:

The guidelines are there but usually the developer can ask for a waiver. For example, if they don't provide enough parking in one development, they can pay compensation.

However, IM6 did not agree with this approach as he highlighted that "this will not solve the problem [of lack of OKU parking space]".

Based on my working experience in KLCH (from 2001 to 2009), under the Planning Act 1982, the compensation or development charge for not providing parking was

RM15,000 (approximately GBP2700) per unit of parking space. However, the charge is for general parking but not specifically for OKU. Some developers would rather pay compensation for not providing enough parking facilities if they estimate that the space could generate more income value than in providing parking space. Therefore, this situation could be one of the reasons for the lack of OKU parking space as claimed by disabled participants in 5.4.1. Moreover, other than the said development charge for parking space provision, any other decision to grant any waiver application (either with or without any charges/penalties) is based on the local authority's discretion.

Other than the Planning Act, 1982, Kuala Lumpur has the Federal Capital Act 1960 that makes provision regarding KL administration and the power of the Mayor (mentioned in 4.4.1) including giving waivers of KLCH requirements in a development. According to RG4 (regulator, KLCH planner):

The Mayor's decision is usually made at a city planning committee meeting, here, we call it OSC [one-stop-centre] committee. [...] Look at Japan, their integrity is very high. Very limited leakage. The resources could be invested and returned to the people, not going to individual pockets. But here, individual interest is more than the public interest.

RG4's statement above raises a potential problem of power misused if decisions are made based on personal interest. The waiver process seems to lack clarity and there are opportunities for informal arrangements between the applicants (PSP) and

the approval personnel that could potentially lead to a failure in providing good access, for example.

In a different situation, OKU access can be limited when there is also a requirement from the local authority to minimise any intervention to the building; here, contrasting priorities occur. For example, see the case of access to Masjid Negara in 6.1.1 where the building is listed under the National Heritage Act 2005. Thus, there are constraints in providing access for OKU, especially for wheelchair users at the main entrance with a grand staircase.

The above discussion indicates that KLCH is seen as holding the power to enforce regulations to ensure that OKU access is provided when granting planning permission and building plan approval. Since voluntary motivation to provide OKU access facilities is lacking among the implementers in KL, regulation from the regulatory body seems to be a must. Ward and Jacobs (2016) give an example that in Australia, the disability activists claim that the voluntary approach failed when market forces prevailed. Therefore, it is argued that regulations set by the local authority still play an important role as one of the facilitators in providing facilities for OKU's inclusion; this can be explained by the fact that voluntary action by service providers and developers is still not the established culture in KL.

# 7.1.1.2 The coverage of access guidelines and standards

There is a lack of information in the existing guidelines and standards that specifically spell out OKU access requirements in the built environment. The

existence of Universal Design and Accessibility in the Built Environment (MS 1184:2014) does not guarantee that physical access for OKU is provided. Other factors are needed to achieve access for OKU's inclusion in the city centre, such as awareness and willingness from the providers (further discussed in 7.2). This can be seen from the lack of current access and facilities observed during fieldwork. For instance, kerb cut design is provided in MS 1184:2014 (Figure 7-1); however, issues on kerb cut (and pedestrian pavements without kerb cuts) were highlighted by many of the go-along participants (see 5.3.3 on inaccessible bus stops and 6.3.1 on pedestrian walkways).

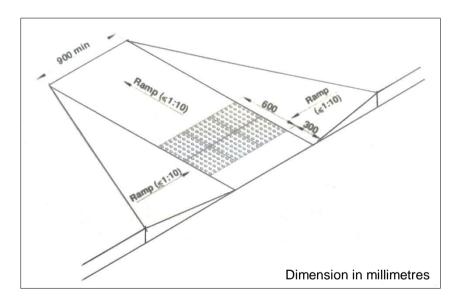


Figure 7-5 Kerb ramp with flared sides

Source: Department of Standards Malaysia (2014)

MS 1184:2014 which came into effect in 2014 is an improvement on two earlier versions. It is noted that in 2017, a booklet of Amendment 1 of MS 1184:2014 was published. However, there are still a few other details that are not included. The provision for OKU's access was complained about by some of the research

participants even though guidelines and standards are specified in MS 1184:2014. For example, IM5 (implementer, KLCH engineer cum pedestrian designer) complains:

In one of the task force meetings for Masjid Jamek, there's a comment [from the committee] that the ablution area is not complying to OKU needs. For me, there's no guideline or standard mentioning the ablution area. Furthermore, there's no access issue at all when the meeting was conducted earlier but suddenly someone raised it in the next meeting. There's no standardisation.

There is a clear requirement for the PSP to conform to MS as stated in the Uniform Building By-Laws 124A. Yet, there is a lack of information in the MS 1184:2014 as highlighted by IM5. As well as the issue of the ablution area, there is no standard covering access to the praying area in religious buildings in KL and Malaysia generally. P7 (male, wheelchair user) raised a question, "Why is *masjid* [mosque] not always accessible to wheelchair user? Is there no specific access guideline for *masjid*?" According to CL1 (collaborator, professional architect (PSP), access audit pioneer, academic), "As other public buildings, *masjid* should refer to MS 1184:2014 but there is no specific access standard for *masjid*".

Meanwhile, the Urban Design Guidelines for Kuala Lumpur City Centre (published in 2014) also do not specifically mention OKU access and neither do they touch on universal design (see 4.2.2.2). However, RG9 (regulator, KLCH planner) defended:

Just like the new urban agenda [that] relates to sustainable development, city is for everybody, city is for all, not just for certain people. No need to spell it out [for OKU].

Again, it appears that the service providers' working culture in KL still does not reach the standard where they automatically understand that access for all includes disabled people. Disabled people's access requirements are often ignored, despite the fact that they are spelled out in regulations and guidelines. RG9's view thus seems disconnected from the reality based on the discussion in 7.1.1.1. Since the PSPs admitted that they always refer to local authority requirements (based on the professional interviews conducted), the need to have a specific requirement for OKU access seems necessary for the current situation especially when a voluntarily approach does not motivate the providers to facilitate inclusive access. RG4 (regulator, KLCH planner) suggested that, "Policies must be very clear. That's why the structure plan has to spell it out clearly". However, there was a contradictory view put forward by another regulator. RG2 (regulator, KLCH architect cum planner) asserted that OKU access is something regularly provided in KL development when she claimed:

OKU access is not already a subject matter. It's already integrated, and we do not see it as a way to actually plan. But it's already a part of it. It's become a culture...so much.

RG2 seems satisfied with the current OKU access provision and its implementation.

Nevertheless, RG2's statement could be challenged by OKU experience, not only

in transportation, but in buildings and on the street level when the built environment was not seamless and caused difficulty for them in confronting physical barriers. Accessibility of the built environment thus depends on how the responsible body perceives the degree of 'accessible' and 'inaccessible' spaces and/or buildings in their territory. This situation gives the impression that good access is determined by the 'satisfaction' of the regulator and/or implementation personnel but not from OKU themselves as end users. This interpretation is in line with Imrie and Hall's (2001) view of policies and individuals who create the built environment as key contributors to the barriers.

RG2 also defended that information has been adequately supplied in the current access guidelines and standards when she confidently said:

There is already an Act, a lot of guidelines, [and] Malaysian Standards that explain the whole thing. The requirement is just like a reminder to them [the architects and other PSP] to provide it.

Guidelines provide recommended guidance for best practice but are not a formal policy statement (Spoden, 2017). Architect's creativity, knowledge, and awareness is needed to make inclusive access a reality (further discussed in 7.2). On the other hand, access requirements as in the guidelines and the MS indicate the minimum requirements and some of the requirements come with quantifiable measures. The PSP needs to comply with the MS since the UBBL made it mandatory for building plans to conform to those standards prior to granting building plan approval. Furthermore, architects are said to be the most vocal with respect to guidelines and

standards (Rimmer *et al.*, 2004). Since the PSPs are accredited as the professionals, RG2 further commented that "they [the architects and other PSP] may not need to be taught anymore". This statement suggests that RG2 believed that the PSP should have enough knowledge and information on OKU access requirements. However, something could go missing when designers rely on the local authority's regulations, but the local authority thought that designers (all the PSP) should be well versed in design as they are the professionals. However, RG9 (regulator, KLCH planner) highlighted that:

PSP shouldn't rely on the local authority. Whatever they plan and design, if they think that's good, justifiable, then they should promote that to the top management. It should be that way.

Based on the review of MS 1184:2014 and other existing guidelines related to the research topic, the guidelines and standards appear reliable to be referred to in designing general public buildings as long as the designers understand the universal design concept or at least have thought for wheelchair users. Furthermore, MS 1184:2014 states that, 'the essential requirements are preceded by the word "shall". For recommendations which are desirable, the provisions are preceded by the word "should" (Department of Standards Malaysia 2014, p. vii). From the explanation of the word 'should' in the MS, it shows that there are alternative ways of achieving compliance to OKU access needs. Hence, it implies that MS 1184:2014 is not rigid: inclusive access can be achieved through the designer's creativity while the MS is just a reference. Therefore, this thesis argues that even though specific requirements for ablution area design are not provided in the MS for example,

designers can still produce a quality design based on their ability to embrace universal design principles in their work.

However, more specific guidelines and standards that address local cultural requirements such as for *masjids* and other religious buildings would benefit OKU access development and be of help to architects and designers. The go-along interviews had evidenced that generally OKU are denied easily performing prayers while visiting KL city centre. Clearer guidelines and standards might allow greater provision for OKU access.

#### 7.1.1.3 The availability and accessibility of access guidelines and standards

The availability and accessibility of access guidelines and standards related to OKU requirements are limited and not easily accessed. Moreover, developing guidelines does not ensure their use (Grimshaw *et al.*, 2012). Yet, MS 1184:2014 and other related guidelines on OKU access need to be referred to by designers, facilities providers, design students and the educators, among others.

Some of the guidelines and standards could be accessed through KLCH website (both published and unpublished). However, some of the guidelines and standards need to be purchased (e.g. MS 1184:2014 and Guideline for Details of Access Facilities for Disabled People). The selling price for MS 1184:2014 in 2017 was RM240 (approximately GBP44) and more recently, in 2018, the price increased to RM345 (approximately GBP63). The price for Guideline for Details of Access Facilities for Disabled People published by KLCH is RM50 (approximately GBP9).

R6 (OKU representative, powered wheelchair user) expressed her dissatisfaction with the accessibility of the MS 1184:2014:

The MS [1184:2014] is not freely available. If they want to make things easier, they want people to comply, so make the documents easily accessible. On one hand, they want people to comply, but on the other hand, they restrict [information].

Besides her dissatisfaction, R6's statement also questions the adequacy of the developer of the standard, the Department of Standards Malaysia, in disseminating access information. She suggested that the documents should be easily accessed so that people could use them to comply with access requirements. P7 (male, wheelchair user), as a lay person, was also interested in exploring the content of the MS 1184:2014 but commented that the price was too high. The high cost of the MS 1184:2014 compared to other Malaysian Standards price (generally about RM15 to RM75) appears to connect to some extent with the psycho-emotional dimension of disability, especially for OKU involved directly with the MS, like R6, and for those interested in accessing and reading it, like P7 for example.

However, there are also architect firms that took the initiative to compile local and international guidelines and standards. For example, as mentioned by IM10 (implementer, professional architect (PSP)):

Our company is now compiling all the building industry standards. So, one of the segments is on the OKU requirements. We need that to cut short our design time frame. It's not necessarily [from] the local.

IM10's statement suggests that guidelines and standards could ease the design process and yet his company compiled these without relying only on local guidelines and standards. Furthermore, according to IM13 (implementer, professional architect (PSP)), regulations indicate the minimum access requirement and the architect can creatively meet the requirement in some other way. IM10's company took the initiative to piece together examples of design that include OKU access, which indicates that the company had a good awareness of the need to design to enable OKU access. Even though examples of good practice in design sound quite useful it is ideal if the architects could refer to a comprehensive list of local requirements in terms of standards, even if there are many options on how to meet these standards, in design terms.

#### 7.1.2 Enforcement, monitoring and auditing

Other implementation issues pertaining to OKU access in KL including enforcement and monitoring have been previously highlighted by researchers (for example see Kamarudin *et al.* 2015; Kadir & Jamaludin 2012a). Under UBBL 124A, existing buildings must be modified to include access for OKU and owners must comply within three years of MS 1183, MS 1184 and MS 1331 being made compulsory in 1992 (except for existing shophouses) (refer to 4.3.2.4). However, this requirement

could be exempted by the local authority (Maidin, 2012) with no action taken in respect of building owners for not complying with usual access requirements.

# 7.1.2.1 Enforcement of regulation conformation on site

In KL there is a lack of enforcement ensuring that regulations on OKU access are implemented on site. Due to this, many buildings are still inaccessible to OKU despite the fact that MS-related to OKU access started in Malaysia in the early 1990s. Even though there are regulations and legislative clarity, they are not sufficient without any enforcement for implementation (Roulstone & Prideaux, 2009; Hussein & Yaacob, 2012).

CL1 (collaborator, professional architect (PSP), access audit pioneer, academic) admitted that "most of the buildings constructed before [the introduction of MS-related to OKU requirements], they are not accessible". She felt UBBL 124A (discussed in 4.3.2.4 on MS implementation) was ineffective in providing OKU access. CL1 criticised it saying:

Ah, that one was never implemented. I never have seen that enforcement in progress. That is part of the responsibilities of local authority [to enforce]. We have that problem. I can see that clearly.

For existing buildings, RG1 (regulator, KLCH architect) explained that KLCH imposed requirements for OKU facilities only when there is an application for the building to be upgraded or renovated. Meanwhile, according to RG4 (regulator, KLCH planner), for an existing building without any upgrading work, KLCH only

issue an administrative letter to appeal for cooperation from the building owner to provide access facilities for OKU. Yet, the decision to upgrade the premise access is up to the building owner.

RG4 further explained that to impose a new requirement after the building is completed (with an approved plan) involved some compensation that needed to be paid by the approval body (KLCH) to the developer. RG4 said that "we don't even test the compensation issue and how far we could bear the compensation". This could be one of the reasons why KLCH never enforce owners of existing buildings to comply with UBBL 124A for access modification within three years after the amended by-law was gazetted. Again, this seems related to financial issues and the amount of compensation from KLCH. Furthermore, many of the public buildings are not publicly owned but privately owned (e.g. shophouses and shopping malls). "It's not appropriate to spend money from the taxpayer to invest in private buildings" RG4 added.

In terms of planning, the KLCH Planning Sector (i.e. City Planning Department, Infrastructure Planning Department, and Building Control Department) has put a lot of effort into including OKU in the development. For example, by imposing access regulations for new and refurbished buildings (as discussed earlier), conducting focus groups with stakeholders including OKU before producing the structure plan (termed the KL City Plan), and opening the draft structure plan for public viewing and comments. RG9 (regulator, KLCH planner) hoped that KLCH proposals could be implemented for the city but complained that:

But sometimes, certain parties are more interested in how much income or how much monetary value that comes out from the project. So, it's more into the project instead of looking for a quality living.

RG9's comment shows her disappointment that some parties in handling projects ignore the quality of life of the citizen. Meanwhile, in terms of building control, RG6 (regulator, KLCH building control officer) admitted that "if there's a complaint that a building is not accessible to OKU, we'll move in to check". RG6's statement indicates a possibility that the enforcement of OKU access facilities in buildings is only undertaken when there is a complaint from the public.

The above interview responses on the enforcement of regulations on site give the impression that there are many inaccessible buildings in KL. Another reason for having inaccessible buildings might be because only limited numbers of existing buildings have been refurbished. As discussed in 7.1.1 (on regulation compliance for building plan approval), only buildings with refurbishment applications and new building applications for building plan approval will need to comply with regulations imposed in facilitating OKU access. On the other hand, enforcement will be imposed based on complaints, but action could be taken only if the building has building plan approval and has been self-certified by the PSP as having access facilities. Otherwise, if the building plan was approved without OKU access considerations, no action can be taken by the local authority.

Some of the regulators in KLCH suggested that the KPKT (Ministry of Urban Wellbeing, Housing and the Local Government) plays an important role in assuring that physical access for OKU is enforced. However, regarding the question of which party is supposed to conduct the enforcement, RG5 (federal regulator) answered:

KPKT formulate policies but when it comes to enforcement, it's the state and local authority [responsibility]. But when we audited the local authority, they said that the PSP is responsible for compliance with OKU requirements. However, some PSP are not well versed on it.

Starting from 2007, the Certificate of Completion and Compliance (CCC) issued by the professional designers themselves as the PSP, replaced the Certificate of Fitness for Occupation (CFO) issued by the local authority (discussed in 4.4.2.1). Thus, RG5's statement above indicates that the enforcement of the implementation of physical access is under the responsibility of the local authority, and the PSP is responsible for providing an accessible design. However, the local authority seems to put the blame on PSP even though there is a power relation between the local authority (KLCH) and the PSP as discussed in 7.1.1 (on regulation compliance for building plan approval). Having said this, KLCH can take action if the access facilities are not provided since the PSP had agreed to provide them before KLCH approved the building plan.

The rectification process for accessibility in a street level environment seems easier than in buildings. There are positive developments as KLCH staff are working to simplify red tape on procedures for dealing with complaints received about inadequate physical access for OKU's inclusion in KL city centre. For example, as explained by RG1 (regulator, KLCH architect):

We could just inform our ex-boss [RG2] through WhatsApp. She will forward it to the top management WhatsApp group. The Mayor is also in the group. From there, direct instruction will be given, which is very good and efficient. If I got a complaint from the public such as a vehicle parked on tactile blocks paving [guiding blocks for a visually impaired person], I will just forward this to her and action will be taken.

As one of the members in the WhatsApp group (and also one of KLCH top management officers), RG2 (regulator, KLCH architect cum planner) admitted:

The good thing in City Hall is we belong to a group where we can just see [a problem] and you will get it done [address it]. So, I just send a picture, and say "I think this should be cleaned up" and they will do it. But it has to come to us using that [WhatsApp] group; most of all the department directors are in that group, and they are very, very positive.

However, this kind of approach is not publicised but only known among certain staff contacts such as among OKU who had joined the audit access with KLCH and have a personal KLCH staff contact number. Furthermore, not all KLCH staff have access to the said top management WhatsApp group. They could only forward complaints

they received to their superior in the top management if they have access to his or her personal contact number as well. It should be noted that RG2 was the immediate superior of RG1 in conducting training and awareness programmes on OKU access before RG2 was promoted to be one of the top management of the Planning Sector (training and awareness programmes are discussed in 7.2.1). Even though this could be seen as an isolated effort, it demonstrates staff awareness and motivation in assuring physical access in KL. For further discussion on complaints about physical access see 7.3.2.

# 7.1.2.2 Plan checking and project monitoring

There is a lack of plan checking by KLCH as the regulatory body and insufficient monitoring of projects by both KLCH as a regulatory body and from the PSP while a project is commencing on site. There seems a need to have a counterbalance of PSP provision and monitoring by the regulatory body since not all of the PSP have sufficient knowledge of how to provide for OKU access, even though they are the ones who are supposed to master it (more discussion on education and advocacy in 7.2.3).

According to RG9 (regulator, KLCH planner), "Our masterplan has the practical requirements, but still, if it comes to implementation, there's always a problem...until now". RG9 suggested that the implementers have to provide more detail for the actual detailed design. She further added, "when it comes to detail, it's the implementer's role, [and] Building Department to check". RG9's statements indicate

that stakeholders should play their part in achieving an accessible environment; however, this can not be achieved without cooperation from all parties involved.

Inadequate supervision by the responsible bodies could result in an inaccessible built environment even though access facilities such as ramps and kerb cuts are provided. RG1 (regulator, KLCH architect) revealed the scenario in her department that:

From my personal view, in terms of the implementation, most regulators just make sure that OKU facilities are provided [in the plan submitted] without evaluating the appropriateness of the design and facilities location. As long as a ramp is provided it's considered it complies. Though, in reality, the ramp can't be used by OKU.

What RG1 claimed seems to support the empirical findings where access facilities were provided but were unusable by persons with mobility difficulties, especially wheelchair users (for example, see 6.1.2 on ramp provided in the National Museum). The provided but unusable OKU facilities is an indirect psycho-emotional disablism since it also reminds disabled people that "you are out of place" (Kitchin, 1998 cited in Reeve, 2014); it also leads to physical exclusion. Some 'reasonable adjustment' such as providing a back entrance for wheelchair users is also part of spatial apartheid (Reeve, 2014). The user can feel like a second-class citizen (*ibid*) when the accessible entrance is isolated from the main entrance as mentioned by RG1.

Meanwhile, an ex-KLCH architect, CL6 (collaborator, professional architect (PSP), academic) agreed that KLCH planners had done their job well when she complimented:

When I was in KLCH, I observed that the planning stage is quite well but when it comes to implementation, it depends on the individual...the regulators, designers, [and] builders.

CL6 argues that a good implementation of physical access depends on the individual motivation of the regulators and the implementers. Some of them might have more exposure to OKU's everyday life as compared to others, and some might learn it through training provided. Meanwhile, some others might have no idea of OKU's access needs at all and might need some training and awareness injection (further discussed in 7.2).

The viewpoint put forward by CL6 can be seen in the following two different approaches. RG3 (regulator, KLCH building control officer) insisted that OKU car parking should be at the side nearest to the lobby entrance with an accessible route for OKU to access the building, while in contrast, RG6 (regulator, KLCH building control officer) had a different view that:

Architects have to be good at designing for OKU. There's no law saying that any particular facilities should be put here or there. That's why we don't consider the facilities location, as long as it's there, it's OK.

Based on RG6's explanation, this thesis argues the role of the Building Control Department as the regulatory body is one where the department is supposed to 'control' the development and ensure the safety and comfort of the user. However, it is noted that starting from 2007, the Certificate of Completion and Compliance (CCC) issued by the professional designers themselves as the Principal Submitting Person, replaced the Certificate of Fitness for Occupation (CFO) issued by the local authority (discussed in 4.4.2.1). As a consequence, the plan submitted for approval is not checked thoroughly by the regulatory body and the CFO issued by the local authority after the building is completed is no longer needed.

Again, with regard to the CCC, RG6 (regulator, KLCH building control officer) highlighted:

The responsibility is on the architect, the PSP. They are the professionals. Ethically, they have to make sure that everything complies with the law.

RG6 also added that with the self-certification and self-regulation by the PSP, the PSP themselves have to make sure that all of the building requirements including OKU access requirements have been provided before the CCC is issued. However, CL1 (collaborator, professional architect (PSP), access audit pioneer, academic) disagreed:

KLCH said it's PSP responsibility. But for me, my perspective is on collaboration among both parties. They [KLCH] only give information and the task to the architects, but no checking. It should

be teamwork between KLCH and the PSP. Let's say the architect is submitting a drawing to their authority, so they [local authority] must make sure the architect follows certain standards, at least minimum standards for OKU.

CL1's statement highlights the collaboration and teamwork between the local authority and the PSP where KLCH should countercheck the plans prepared by the PSP. Based on regulation compliance on the plans as discussed in 7.1.1, it appears that the minimum requirements are mostly provided in the plans. However, without sufficient monitoring on site, the access facilities provided might not function as they are supposed to. Furthermore, R6 (OKU representative, powered wheelchair user) asked, "If the construction is not monitored by the consultant or local authority, whose job is that?" Lack of monitoring from the responsible bodies raises a potential problem of inaccessible environment. Hence, further action (i.e. access audit) is later needed to rectify poor access and remove barriers.

### 7.1.2.3 Access auditing

The purpose of an access audit is to identify barriers in buildings that need to be rectified (Holmes-Siedle, 1996). Generally, the series of access audits conducted in KL do not effectively help KL to become a barrier-free city since limited action was taken by the building owners to bring about rectification. However, it appears that KLCH had followed the practice suggested by Holmes-Siedle (1996) and Manley (2011) (see 2.2.3.3 in identifying and removing barriers in the built environment).

Participation of OKU in access audits is one of the ways to obtain real feedback on the access facilities provided. This can be seen from what was shared by P12 (male, wheelchair user):

In access audits, they have staff [from KLCH], the principal that leads, and OKU [inspector]. I'm one of the OKU. They ask me to try the facilities and give feedback.

Access auditing has been conducted by KLCH since the early 2000s with coaching from access audit experts, such as CL1 (collaborator, professional architect (PSP), access audit pioneer, academic). However, according to CL1, access auditing in KL does not seem to be effective in removing barriers in the built environment. She claimed that:

KLCH in a way [with access audits] some improved but some not. Even though they had conducted 70 access audits...so many times, but the implementation is still not there.

One of the go-along participants was also involved as an OKU inspector in a few access audits conducted by KLCH. P7 (male, wheelchair user) complained:

I don't know if the access audit is just to check things, or for upgrading access. I don't see the implementation of what was audited.

P7's statement gives the impression that he was unsure why an access audit is being conducted. His tone suggests that he was dissatisfied to see no response taken following the access audit he participated in as one of the OKU access inspectors invited by KLCH. What P7 feels could impede his enthusiasm to contribute in the future to the development of inclusive access in KL.

Both statements from the access audit pioneer (CL1) and the OKU inspector (P7) above still question the implementation of access remedial works that are expected to be the action following from the audit report. The 'silent' action (no rectification action taken) of the building owners after an access audit may have psychoemotional impacts on non-OKU as well. As the person who introduced access audit in Malaysia in the early 1990s, CL1 admitted that only a small percentage of buildings audited had upgraded building accessibility. However, she positively said, "The important thing is they [building owners] have got the database [information of barriers and recommendations for rectification]". CL1's statement could be interpreted that whenever the building owners are ready mentally and financially (if these are barriers in facilitating access for OKU), they could simply conduct the access upgrading work since the information is already compiled.

However, there is a need for change concerning the current provision of physical access as suggested by R6 (powered wheelchair user, OKU representative):

We have to be open in terms of how to make things work. If the system or procedure needs to be changed, then change it! But it has to be implemented. If not, the access issue won't be solved.

The discussion on the need for change was raised a few times by R6 while she discussed current enforcement, monitoring and auditing of physical access for OKU

that she claimed was inadequate. Therefore, a transformative approach (see Fraser, 2003) may be needed to address the root causes.

# 7.1.3 KLCH in-house projects

Based on interview responses from RG4 (regulator, KLCH planner), RG6 (regulator, KLCH building control officer) and IM2 (implementer, KLCH architect cum urban designer), as compared to accessibility in buildings, more issues were highlighted by OKU representatives regarding the lack of access facilities in public places, such as pedestrian walkways, street furniture and pedestrian crossings. The majority of public facilities and amenities at the street level environment are provided by the local authority. Hence, this section analyses access issues in KLCH in-house projects (including a federally funded project managed by KLCH) to identify the challenges they faced in providing accessible facilities in KL city centre.

For in-house project implementation in KLCH, the sector involved is the Project Management Sector which comprises the Project Implementation and Building Maintenance Department, Civil Engineering and Urban Transportation Department, and Landscape and Recreation Development Department.

### 7.1.3.1 Resources

Resources include a 'stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively' (Oxforddictionaries, 2019). In this thesis, discussion of resources refers to funding

and expertise. The provision of physical access in KL is hampered by a lack of resources where project funding and expertise among the staff is limited. The availability of funding alone is not sufficient to ensure an accessible environment as this requires skill and expertise in designing the built environment.

# Funding

In 2011 KLCH received funding from the federal government to upgrade pedestrian walkways under the National Key Economic Area (NKEA) budget for three years. The Civil Engineering and Urban Transportation Department was tasked with implementing projects on pedestrian networks i.e. covered and uncovered walkways.

According to IM5 (implementer, KLCH engineer cum pedestrian designer), the federal government has allocated funding for KLCH to provide covered walkways that link one building to another under the Greater KL/Klang Valley project. Any barriers obstructing pedestrian walkways, i.e. public amenities, needed to be relocated into designated street furniture areas. Part of the work done under the NKEA budget was to ensure a width of 1,500 mm for wheelchair user access on the pavement (mentioned in 6.3.3). Therefore, barriers such as lamp posts, feeder-pillars and post boxes on the pavement were realigned to provide a seamless journey for pedestrians, especially the wheelchair users as they require a wider path.

According to IM14 (implementer, KLCH urban transport engineer):

We had improved the city centre, the Golden Triangle. The first phase is from opposite Berjaya Times Square, where the Amoda building is. KLCH was the SO [superintending officer]; we tendered and appointed the contractor, but the money came from the NKEA project.

However, this federal funded project was only for three years (ending in 2015) where the upgrading work of the street level environment was carried out in a few identified areas. Generally, in developing countries, inadequate budget is allocated for OKU's access (Sawadsri, 2010; Ahmed *et al.*, 2014). Therefore, this situation is not unique to KL. Hence, part of the impacts of insufficient funding is that there is no connectivity from one upgraded area to another. That was why in the go-along journey, it was observed that some areas provide a seamless journey for the pedestrian walkway users; for example, they do not have to go down to the road/street level when the pavement approaches a crossing at a junction since the crossing itself is raised up to the pavement level (see Figure 6-42 in 6.3.2). Yet, a seamless journey is not comprehensively achieved while the majority of walkways are still not wheelchair friendly. Nevertheless, even though upgrading is being done in a few designated areas, the success of this NKEA project in those areas suggests that KLCH could provide a better street level environment if finance was not a constraint.

# Expertise and staffing

In providing pedestrian walkways in 2011 and in the upgrading under the NKEA (2013–2015), the designers (with an engineering background) and their implementation teams were from the Department of Civil Engineering and Public Transportation of KLCH (for both projects). However, according to RG1 (regulator, KLCH architect):

For the earlier project and at the start of NKEA [upgrading pedestrian walkway programme], the walkways still needed the user to go up and down [not seamless]. So, the architects from BREB [Malay acronym for the Division of Urban Design and Aesthetics] were instructed to oversee the design.

When the architects from the Division of Urban Design and Aesthetics were appointed to design the later pedestrian walkways to be implemented, they introduced a design that avoided any steps. When appointed to design area upgrading as according to the precincts in the Urban Design Guidelines (UDG) in 2014, IM2 (implementer, KLCH architect cum urban designer) clarified:

Our strength is, we really follow the UDG and MS 1184 [Universal Design Code of Practice]. We tried our best to fight for what we want. So far, the top management understands and agrees to what we have presented.

IM1 (implementer, KLCH engineer cum pedestrian designer), one of the engineers involved in the earlier phase of the pedestrian walkway project frankly admitted that "we actually didn't know what the requirements for OKU access were and started doing research". IM1's team was instructed to handle one stretch of pedestrian walkway in mid-2010 and the project commenced in 2011. The team might not have had enough time 'to learn' and explore more OKU access issues, yet, the project needed to be implemented in 2011. Therefore, the project is a source of complaint as it is not seamless (e.g. comment by RG1 earlier in this section). Meanwhile, training on OKU access also started in 2010 conducted by the Innovation and Building Standards Unit (IBSU) under the Building Department. More on the training programme is discussed in 7.2.1.

For CL2 (collaborator, KLCH architect, access audit trainer), the lack of KLCH staff is also one of the constraints in achieving an accessible built environment in KL. She claimed that when IBSU was initially set up in 2010, only three people were in the unit. Moreover, KLCH needs to look at other issues in addition to those for OKU access. According to CL2:

KL is enlarging, the development has so many problems...with the homeless, money laundry, illegal immigrants coming in...but our staff is limited.

This situation indicates that KLCH has numerous issues requiring attention while they have limited staff. Therefore, there is a need for issues to be seen from a wider perspective so that actions could be taken according to priority.

# 7.1.3.2 Site condition and building owner cooperation

Some proposals look appropriate on the plans, but other factors need to be considered on site. The site constraints could appear as geographical factors (e.g. hilly site) and human factors (e.g. man-made remains and cooperation from building owners) that hinder good access

RG1 (regulator, KLCH architect) explained that starting from 2014, the architects in the Department of Implementation and Building Maintenance of the KLCH have been given designated areas for accessibility site auditing, mainly for pedestrian walkways which include access for OKU. The physical barriers identified in the exercise were such factors as any natural or man-made remains or utilities poles and boxes; the costs of removal or re-aligning were then presented for budgeting purposes.

However, IM4 (KLCH architect cum urban designer) admitted that:

In the design, we follow the MS requirements thoroughly, but sometimes, what is in the plan is not necessarily easily constructed on site. For example, in a pedestrian walkway upgrading project, we find electric cables and water plumbing scattered underground. These are barriers to the project; in the end, costs are incurred to relocate the cables and plumbing.

From the explanations provided by RG1 and IM4, it appears that KLCH projects are mainly retrofitting the street level environment in order to achieve an accessible design. Access barriers were identified to be removed from the existing pathway. Therefore, extra costs occurred (Ormerod & Newton, 2006). Moreover, KL is an old city with many old buildings. RG5 (federal regulator) highlighted that "old buildings and some of the infra [structure] have been developed since the British era. That's the challenge in transforming KL to a barrier-free city".

For IM2 (KLCH architect cum urban designer), narrow sites, different levels inbetween shops and arcades, and lack of cooperation from the building owners are among other constraints. RG1 (regulator, KLCH architect) explained that "to get cooperation from the building owners was also one of the most complicated processes". RG1 gave an example of a few owners of shophouses at Jalan Tuanku Abdul Rahman who refused to cooperate with the KLCH team and insisted on retaining the existing tile and arcade floor level in front of their shop lot while other neighbouring lots have been transformed to a seamless and standardised arcade walkway according to KLCH upgrading proposals. Therefore, KLCH could not achieve a seamless design for one whole stretch as planned and designed.

Figure 7-2 shows an example of a seamless design in Jalan Tuanku Abdul Rahman. The arcade in front of the shophouses has been upgraded where there are no steps in-between the lots, from the arcade to enter the shops and also from the arcade to the pedestrians observed on the right (refer to Figure 6-5 (b) in 6.1.1 on the differential floor level in-between the arcade and the shop entrance in Jalan Tuanku Abdul Rahman before the upgrading work).



Figure 7-9 Example of an upgraded area in Jalan Tuanku Abdul Rahman

Source: Author (2017)

### 7.1.3.3 Jurisdiction conflict and coordination

There is a jurisdiction issue among the implementers in providing an accessible environment. Different departments/organisations have different jurisdictions even though they cover the same site. Trees, street lighting, advertisement boards and utility boxes in a stretch of the pedestrian walkway are under different custody. For example, trees are managed and maintained by the Landscape and Recreation Development Department, while street lighting, signboards and advertisement pillars are under the Civil Engineering and Urban Transportation Department. Meanwhile, utility boxes are mainly are under external bodies.

All in-house projects implemented by the Civil Engineering and Urban Transportation Department, and the Project Implementation and Building Maintenance Department are planned by the City Planning Department. IM7

(implementer, KLCH architect, public building designer) commented on the issue of jurisdiction:

Now we are going into more detail and we take more care of the connectivity from a building to outside. Of course, we can't look at a bigger scale, as it will encroach another department's responsibility.

IM7 further added that "there's no coordination in-between departments. That's why you can see barriers at pathways". Hence, coordination needs to be done within the internal and the external organisations as well in order to achieve an inclusive built environment in a faster way. Otherwise, work undertaken will be fragmented and result in no connectivity between one building/area to another (as discussed in Chapter 6).

For coordination issues between KLCH and the providers of external utilities (e.g. energy and water suppliers), according to IM1 (implementer, KLCH engineer cum pedestrian designer), in a recent development, the external parties were notified of the guidelines for having a barrier-free environment where no cables, electrical post and other utility boxes are allowed to be placed on pedestrian pathways. However, IM1 claimed that sometimes it took months for the existing utilities to be relocated. Therefore, for ongoing upgrading work that is urgent, KLCH will relocate the utilities and charge the costs to the external utility bodies involved. With proper coordination in providing landscaping, facilities, amenities and infrastructure in KL city centre, the location of the said elements can be arranged prior to their being fixed or assembled

to permit OKU access. Hence, the unnecessary cost for removing or relocating these 'physical barriers' can be avoided.

Time coordination is another issue brought up in upgrading access facilities in KL. There is no specific time frame for the implementation work to be commenced after the planning stage. Whenever given examples of photos taken with disabled participants in an inaccessible walkway (e.g. refer Figure 6-50 in 6.3.3), the answers from the KLCH staff would be that they have a plan to conduct the necessary remedial work, but it is yet to be implemented, for example, as claimed by RG1 (regulator, KLCH architect):

These facilities are not according to our standard anymore and there is planning for upgrading according to the precincts as in the UDG. Actually, we are coming into it; we are on the way; we already have the plan. We also have the budget. It's in the plan yet to be implemented.

In the go-along journey, it was observed that many of the tiles on the pedestrian walkways were broken. IM13 (implementer, professional architect (PSP)) suggested that the walkways in KL lack maintenance and that the resulting uneven pavement surfaces also caused non-disabled people to fall. He also claimed that the local authority should be responsible for undertaking maintenance action.

When the same photos were referred to RG2 (regulator, KLCH architect cum planner), she admitted:

These are the places that we haven't upgraded. Currently, the whole city centre is in a mess. Some areas are there for construction and some are waiting for construction. So, we are not maintaining them anymore. They all will be brand-new, in let's say three years, they will be brand-new. If it's very urgent and needs immediate action, we will repair it as part of our maintenance programme.

From the explanation offered by RG2, it is noted that KLCH's efforts on having an accessible built environment in the city centre are progressing. However, it appears that the upgrading work can not be commenced concurrently. Part of the reasons might be related to budgeting and financial issues, expertise, site constraints, jurisdiction and coordination matters as discussed above.

# 7.1.4 Summary of the issues in planning and implementation of physical access for OKU

Issues related to measures taken by the stakeholders in the planning and implementation of physical access for OKU in KL are summarised in Table 7-1 in the next page.

Table 7-1 Summary of the issues in planning and implementation measures in providing physical access for OKU in KL

Themes	Sub-themes	Summary of issues
Planning and implementation of physical access for OKU	Regulation compliance on plan submission requirements	Compliance in the plans submitted for approval is more common than compliance on site
		OKU access facilities are not voluntarily provided
		PSP provide minimum requirements without considering the design and location of the access facilities provided
		OKU access could be limited by local authority's other concerns (e.g. in historic buildings)
		Guidelines and standards do not adequately cover all access facilities
		Not all the guidelines and standards are easily available
	Enforcement, monitoring and auditing	No enforcement in old buildings unless the owner submits plans for upgrading/refurbishment
		Enforcement action is taken based on public complaints (reactive)
		The effort to reduce red tape in enforcing an accessible built environment is not publicised
		Plan not thoroughly checked by the regulator since PSP is responsible in the design and the issuance of completion and compliance certificate
		Access audit was done in quite a number of buildings but generally, only limited numbers of buildings undergo rectification
	KLCH in-house projects	No continuity from one accessible area to another since upgrading projects based on the prioritised area because funding is limited
		Lack of knowledge and expertise on OKU access requirements among the implementers
		Jurisdiction conflicts occur that need coordination
		Too many site constraints in undertaking access upgrading such as natural and man-made remains or utilities poles and boxes on pathways
		Lack of cooperation from building owners

# 7.2 Accessibility education and awareness-raising programmes

Kamarudin *et al.* (2012) reveal that one of the reasons that caused OKU to have problems in accessing physical facilities in education, the workplace and other public facilities is the lack of technical knowledge and awareness among technical personnel in the local authority in approving and providing access for OKU. However, this thesis observed that there are measures taken by several government bodies to create and raise awareness on OKU access facilities in KL, such as from KLCH, the Ministry of Women, Family and Community Development (MWFCD), and the Department of Standards Malaysia. This section further discusses the measures taken by the providers and collaborators in increasing knowledge and awareness of OKU access needs among society by reflecting on (1) technical training and awareness-raising programmes, (2) design consultations, and (3) education and advocacy.

### 7.2.1 Technical training and awareness-raising programmes

Training and awareness-raising programmes conducted in KL are relatively effective. KLCH have taken actions to improve physical access for OKU in KL by having technical training (including access audit training) and awareness-raising programmes for KLCH staff, other local authorities' staff, and external implementers (i.e. architects, contractors and hoteliers). Participants were informed of technical requirements for OKU access and information to be indicated in building plans, and the importance of access and facilities for OKU in the built environment. Simulation

exercises were also conducted exposing the participants to the experience of being in a wheelchair and walking with a stick, and providing assistance to OKU walking in the built environment. According to RG2 (regulator, KLCH architect cum planner):

All the other local authorities, we have about 115 of them, are coming to KLCH, to actually learn what we have done for the past, like almost 20 years. I've been here right from the start, almost 20 years.

Technical training was conducted extensively by the Innovation and Building Standards Unit (IBSU) under the Building Department of KLCH from 2010 to 2013. In addition, the IBSU also conduct access audits (see 4.4.2.3 for details). Meanwhile, KLCH offers a free consultation service for the PSP. The consultation can be obtained either from the regulators among KLCH architects or the building control officers.

Even though the IBSU extensively conducted training programmes for three years (2010–2013), RG2 mentioned that the first training conducted for KLCH staff occurred in the late 1990s with CL1 (collaborator, professional architect (PSP), access audit pioneer, academic) as the pioneer in conducting the training (or 'workshop' as it is usually called by KLCH staff). It appears that OKU training has taken place in KLCH for a long time. According to CL2 (collaborator, KLCH architect, access audit trainer), between 2010 to 2013 there were at least 20 workshops on access audit training and access audit exercises in more than 60 locations. CL2,

however, admitted, "Training after training after training; we talked about what access is, but people were already wanting to see the product on the ground".

In reflecting on the training conducted, CL2 (collaborator, KLCH architect, access audit trainer) admitted that their team had conducted a series of workshops but wondered about the impact:

Have we sat down and looked back? To what extent it really helps our city? It helps, but not as much as we expected. But overall, I'm still not happy because the attendance from KLCH staff is low. They are not interested in coming. Whenever we say about OKU workshops, they really are not interested.

As an access audit trainer, CL2 was frustrated when the training programme did not get encouraging responses from KLCH staff. For the record, there were exactly 21 workshops with 66 access audit exercises undertaken by IBSU that included training outside of KL for other local authorities. The number of workshops and access audit exercises shows that there was quite a large effort made for training the technical personnel, but the effectiveness was still arguable. Therefore, there is a need to look for explanations of why training results are not reaching expectations. RG2 (regulator, KLCH architect cum urban planner) believed that:

DBKL [KLCH] trained everybody that needs to be trained. So, at the end of the day, when a senior engineer has been trained, it's his responsibility to train his assistant, his team, so to actually be talking

about the same thing, again and again [through workshop], is not effective training.

The IBSU was dissolved in KLCH restructuring in 2014. The staff team were transferred to the Physical Planning Department (now the department has merged with the Planning Control Department and known as the City Planning Department) but continued research on OKU access. Later in 2015 until the data was collected in 2017, the team joined the Division of Urban Design and Aesthetics under the Project Implementation and Building Maintenance Department. Architects originally from the IBSU, as well as other KLCH architects in this department, are assigned to implement upgrading of areas around KL city centre. Interestingly, even though without IBSU, in 2016 under the Division of Urban Design and Aesthetics, KLCH managed to conduct the last OKU access training for KLCH contractors.

However, CL2 believed that "awareness programmes should be done continuously since KLCH staff come and go, we always recruit new staff". Furthermore, it appears that whenever staff are reshuffled, they could be placed in any different department. Some of them might be assigned to departments or units that require knowledge of access facilities. Therefore, even though there is no more centralised training at KLCH level, continuous internal training within the department would benefit the staff.

As of the research fieldwork undertaken in 2017, Jalan Tuanku Abdul Rahman (a street name) street level upgrading by the Division of Urban Design and Aesthetics that was started in 2015 is an example of an accessible area mentioned by many

(e.g. CL2, RG1, IM4). CL2 highlighted that "Jalan Tuanku Abdul Rahman is our model". Based on observations during this research, the street upgrading project has successfully provided a seamless pedestrian area and if it is really one of the outcomes of the training, the training series was also a success.

For RG4 (regulator, KLCH planner), the training had changed the staff perspective regarding OKU facilities provision and also understanding of universal design. RG4 shared:

Now, for public buildings, we required the OKU toilet on the ground floor. It is actually not an OKU toilet but a toilet that is accessible to OKU and complies with OKU standards. So, anybody can use it.

Meanwhile, IM1 (implementer, KLCH engineer cum pedestrian designer) agreed that the training conducted had benefited KLCH staff when she commented, "they [IM1 department's staff] have a better understanding. Otherwise, they just argue when given assignment [to provide access facilities for OKU]".

### IM1 further added that:

They argued because all this while, they get used to doing the same design without the need to think and provide access for OKU. They just don't understand.

IM4 (implementer, KLCH architect cum urban designer) also had the same thought as IM1. He claimed that every department in KLCH has their own ego, that the department might think, "Oh, this is the only way; we have done it for like 20 years".

The responses made by IM1 and IM4 above portray that the training had impacted on the way the participants think in providing access for OKU. IM3 (implementer, KLCH engineer cum pedestrian designer), however, considered that "when we [KLCH] started to implement the guidelines for OKU access in our project in 2011 [pedestrian walkway], the engineers seemed to not take it seriously". What IM3 pointed out shows that he noticed that in the earlier stage, there were negative attitudes among KLCH staff towards providing access for OKU's inclusion and the attitudes had been improving in later developments.

Other than KLCH, the MWFCD has been conducting simulation exercises as well with the heads of government agencies. RG4 (regulator, KLCH planner) thought that "after two to three series, there's an improvement. Things get easier". RG4 felt that access issues became easier to discuss among KLCH and other agencies since they had an awareness of the importance of providing OKU access in the city. The MWFCD involvement indicates other agencies, in addition to the local authority, strive to create and raise awareness of the importance of having access for OKU (more awareness issues are discussed in 7.2). Based on the discussion above, it indicates that training and awareness-raising programmes generally benefited the participants. The programmes help to change the participants' perspective on the importance of providing an inclusive environment. Thus, it is suggested that the programmes continue to be conducted by other agencies since they are not conducted by KLCH any more.

CL3 (collaborator, MWFCD officer) highlighted that:

Accessibility is a big term. Physical accessibility is part of it but always being related to OKU. But actually, we are talking about access for everybody. If we use the universal design approach, it is accessible for all. Inclusive for all.

As a person from a non-technical background, CL3's statement indicates that the concept of universal design (Mace *et al.*, 1991) has also been disseminated to the non-technical agencies. Therefore, it seems easier for KL to be equipped with access that is inclusive for all. For example, budget issues in providing access might be given priority by the policymakers by understanding universal design.

However, moving back to the training by KLCH, P7 (male, wheelchair user) admitted that:

Whatever was presented in the workshop was fantastic! They [KLCH] show us OKU requirements from the planning stage. While the building is erected, they go for a site visit. [So], there shouldn't be any missing elements. But unfortunately, when a building is completed, there's always things that are not complying. Where are the loopholes?

The observations expressed by P7 show his confusion between what was told in the workshop and the reality that OKU faced in a completed building (and in the street environment as well as evidenced in the go-along journeys). According to RG6 (regulator, KLCH building control officer), there is no requirement for KLCH to go for a site inspection while the development is in the construction phase since "they [PSP] have to make sure that everything complies with the law" (see 7.1.2 on project monitoring). However, this thesis questions whether the non-availability of project monitoring by the local authority is the reason that access facilities are not provided. Before CCC was introduced in April 2007, the local authority still needed to conduct site inspections prior to issuing the CFO (see 4.4.2.1 for details). Yet, many buildings built between 1991 and 2007 are still inaccessible (after MS stipulated mandatory access requirements and before CCC was introduced). For example, see Figure 6-6 in 6.1.1.

It is noted that KLCH extensively conducted technical training and awareness-raising programmes from 2010 to 2013. To make sure that the training is effective, R6 (powered wheelchair user, OKU representative) who had been invited as the OKU inspector in the access audit training suggested:

If it is so hard [to understand], a prototype or some pictures should be shown to the designer. Just give examples, this is for a toilet, this is the measurement, kerb cut should be like this, bus stop like this. It doesn't matter if the designs are all the same as long as they are functional.

It appears that R6 could not appreciate the aesthetic value in design if the building is not accessible. On the other hand, according to IM13 (implementer, professional architect (PSP)), "the requirements are not supposed to limit creativity among the

designers". Hence, there are also consultations from KLCH to ensure that designs are not rigid in complying with OKU access requirements, as discussed next.

# 7.2.2 Design consultations

It is important that KLCH continues to provide design consultations for the PSP. However, the staff giving consultation should be knowledgeable about the technical requirements. Currently, there is no specific accredited design consultant nor accredited body for access consultants in Malaysia but rather advice is based on KLCH staff experience in giving comments and regulating design for OKU access.

Prior to getting the building plan approval, the PSP must state in the plans that all access facilities for OKU will be provided (refer to 7.1.1 on regulation compliance for building plan approval). However, according to RG1 (regulator, KLCH architect):

The regulators usually see more [general information] on regulation compliance without looking at the design and location of access facilities. There's a ramp...[means it] complies. That's why things don't work as they are supposed to. The ramp won't be used especially if the location is isolated...not safe. It should be in front [of a building].

Moreover, it is not compulsory for the PSP to acquire consultation from KLCH and there is no specific person in charge. According to CL2, normally the PSP will discuss design proposals with the area officer (regulator) in charge for checking their plans. Normally, the area officer will advise them to make an appointment with the

staff involved in OKU access training. Explanations from RG1 and CL2 above show that not every regulator is well versed in providing consultation to PSP on good access.

As a regulator frequently being asked to provide consultations by the PSP, RG1 explained:

Usually, the PSP don't see the need for the guidelines. I have to give examples of if their parents or wife were using inaccessible facilities. I have to let them [the PSP] and their family become part of the story. If not, they don't see the importance of why we are forcing them to do this.

The experience of RG1 indicates that the design consultation offered by KLCH on access facilities for the PSP has an impact on how the PSP accept the reason for access requirements. Meanwhile, CL2 (collaborator, KLCH architect, access audit trainer), would ask the PSP to consider the example of Jalan Tuanku Abdul Rahman, "that's our pilot project; use it as an example". However, the example or model was completed in 2016, just about a year before this research fieldwork was conducted. Therefore, based on this research observation, the majority of the street level environments are still full of physical barriers to those with mobility difficulties.

Other than getting KLCH consultation, there were also agencies getting access consultation by the Malaysian Institute of Road Safety Research (MIROS). MIROS is a body that researches road safety in general. IM12 (implementer, KLCH planner seconded to another government agency) admitted:

We don't have enough staff and resources to handle ourselves on how to produce a real seamless walkway. So, we rely on an agency appointed by the government [MIROS], giving consultations not only on road design but for safe and seamless pedestrian walkways.

According to IM12, the agency that he is working with when this research interview was conducted had just started pedestrian walkway upgrading for 400 metres with the appointed consultant. IM12 also added:

If you don't ask the expert, you will get the same standard as KLCH facilities...not consistent. So, we don't want that to happen in our development.

IM12 could give the above statement because he had experience of working in KLCH. The statement indicates that he is not satisfied with what KLCH had done. However, the result of the IM12 project could be referred to in the appraisal of the street level environment i.e. with P18 (male, powered wheelchair user) while passing through the OKU gate (refer to Figure 6-51 and Figure 6-52 in 6.3.3). P18 struggled to access the OKU gate even though the gate was supposedly designed as a barrier gate to prevent motorcycles from using the pavement with the opening suitable for wheelchair access. Apparently, either there was a miscalculation of the gate opening dimension by the contractor, or, the research carried out by MIROS only took into consideration manual wheelchairs but not a bulkier powered wheelchair.

Eventually, P18 and I managed to see IM12 in his office adjacent to the stretch of that pedestrian walkway with OKU gates. In responding to P18's experience with the gate, IM12 showed us a video casting a man in a wheelchair being pushed passing through the gate. The footage showed that the wheelchair user could pass through the gate; he was assisted, and his arms rested on his lap. From interviewing IM12, we learnt that the two men in the video were from MIROS, demonstrating the gate usability and the wheelchair user were only a simulation (the wheelchair user was not an OKU). Thus, it can be suggested that disabled persons should be part of the access consultant team since they are the expert in barriers, experiencing them first hand (Bailey *et al.*, 2015) and hence, they can highlight issues such as the variability of wheelchair dimensions, that might be missed by non-OKU. The content of the consultation reflects the consultant's knowledge and awareness of OKU access. Hence, the next section will discuss advocacy and educational programmes that could enhance knowledge and awareness in providing OKU access among the providers, for OKU as an individual and for society at large.

### 7.2.3 Education and advocacy

Other than conducting technical training and design consultations, there are other efforts taken by stakeholders to promote accessibility (for OKU access facilities specifically as the scope of this research), for example, through tertiary education, research, advocacy and the introduction of legislation related to OKU. Education and advocacy (Fincher & Iveson, 2012) are seen as the drivers that move the development of OKU physical access.

# 7.2.3.1 Tertiary education

It is vital for architectural and planning studies courses in Malaysia to include OKU access requirements in the syllabus. Providing access for OKU, as well as for the diversity of users, is one of the universal design principles which promote equitable use (Bringolf, 2008) so that people with diverse abilities can gain access. Universal design is part of the syllabus for certain architectural studies offered in tertiary education institutions in Malaysia. This is one of the measures taken by the educators (as the collaborators) in conveying knowledge to provide good access in a built environment that is inclusive for all.

However, not all universities in Malaysia offering architectural studies emphasise access facilities required by OKU. In some universities, universal design is included as one of the built environment faculty's elective courses. When asked about syllabus on universal design in one of the primary architectural schools in Klang Valley, CL4 (collaborator, educator with an architectural background) revealed that there is no specific syllabus on universal design in the faculty and commented:

We teach our students, we introduce, but just to follow whatever UBBL requires. However, the emphasis [of OKU access] is not so intensive. I don't see that as a priority in the design [in the faculty]. At this moment, the awareness is not there.

From CL4's statement above, a positive action would arise if the designers were taught to follow UBBL requirements from their tertiary education. However, he noted

that the topic of access facilities for OKU is not being given priority. Based on CL4's observations as the faculty's dean, the design presentation of students in architecture and landscaping architecture has not taken OKU access seriously. This information is somewhat disappointing as the faculty is one of the oldest built environment faculties in Malaysia and produces graduate architects and other built environment professionals every year. It suggests that the lack of awareness about providing accessible facilities for OKU in their design projects is not only from the students' side but also from the lecturers in teaching and supervising their students as well.

CL4 further added that, "In really trying to design based on the requirement of OKU, designs may not be as rigorous". From this statement, it can be stated that CL4 had a misunderstanding of universal design concept, as this concept is not supposed to restrict creativity. In addition, CL4 explained that related research on OKU originates from a few groups of people who are really interested in the area including OKU researchers and academics with a personal interest, who perhaps are OKU themselves or have OKU relatives.

RG9 (regulator, KLCH planner), considers that it is necessary to educate people on the importance of access for OKU and for everybody, "It's just like how we educate people from littering. How to change their mentality? We should start at a young age". There seems to be a need for people to have early exposure to human diversity, for example, by having programmes that enable interaction between the non-disabled and disabled people from a young age. Therefore, if they were to design spaces and buildings later, disabled people may not be seen as 'strangers'

that need a special route and design. It is important to differentiate between the term 'inclusion' and 'integration' in society (Schrader, 2012 in Zajadacz, 2015) as illustrated in 2.1.3.2; 'integration' enables disabled people to join only a specific set of activities, but 'inclusion' lets them participate freely in society. This thesis argues that the understanding of both terminologies affects the design outcomes.

In providing a built environment that can be accessed by OKU, IM10 (implementer, professional architect (PSP)) gave his thoughts that "It all depends on the architect's sensitivity. Our public awareness about OKU is not that strong". IM9 (implementer, professional architect (PSP)) believed that providing universal design is challenging when he claimed that, "For universal design, we need to provide extra space and extra cost. Then, we have to choose suitable material for the finishes". However, access should permit universal use by others and not be distinguished as specially designed for OKU (Barnes, 2011). Otherwise, the project will be seen as a burden that incurs extra cost in what was claimed by IM9 as a misconception of universal design. Misconceptions about the universal design terminology in Malaysian built environment practice are due to a lack of understanding of the terminology that hinders its appropriate implementation (Yusof & Jones, 2014).

It is noted that universal design has been promoted by Malaysian researchers before the MS 1184:2014 was introduced in 2014. Examples of research and publications on universal design in the Malaysian built environment are on waterfront development (Rahim & Abdullah, 2009), accessibility and urban design policies (Yaacob, 2010; Abdullah, 2014), building managers' perceptions (Kadir *et al.*, 2012), universal design applicability in public buildings (Kadir & Jamaludin,

2012), towards a sustainable built environment (Rahim *et al.*, 2014), and architects' perception of the terminology (Yusof & Jones, 2014). However, Kadir *et al.* (2012) highlight that even though there are misconceptions or inaccurate understanding of universal design where it is often associated exclusively to cater for the needs of OKU, public awareness on providing access and facilities for OKU in Malaysia is progressing. In addition, it seems better to introduce the importance of OKU inclusion in early education. Therefore, it will be easier to raise awareness on OKU needs among the designers.

#### 7.2.3.2 Advocacy

Advocacy among OKU in KL needs to be strengthened so that OKU are aware that they have the rights as citizens to be provided with access in the physical environment. However, RG2 (regulator, KLCH architect cum planner) shared that:

We have been trying to ask people to provide [OKU access facilities] and people say, "I can't see these people around. We don't see them, so we don't know they exist. You want to see them, you go to the hospital."

RG2's statement indicates that the provision of access for OKU is given more attention in buildings that are known to be visited regularly by medical patients and OKU. Having outstanding access in those buildings is good but OKU should not only be permitted to access certain places but should be given the opportunity to access other public places as equals to other non-disabled bodies. Another point in relation

to the above quote indicates that the environment is inaccessible. Other people are not so aware of OKU and their needs because they are not very visible, and they are not very visible because their needs are not met in terms of access. This vicious circle was also discussed on transportation issues in 5.3.1.

Even though accessible buildings and places are found in particular places, the existence of such accessible buildings in KL shows that there is a capacity for architects and access providers to deliver an inclusive built environment for the whole city as well.

R4 (wheelchair user, OKU representative) pointed out:

We need OKU that can voice out to the related authority, therefore, accessibility issues in the built environment could be handled faster. If we just rely on the charity perspective, the process is slow. That's why we need advocacy to fight for our rights.

According to R4 (OKU representative, wheelchair user):

Attitudinal barriers are more important to be changed. Even if good facilities are provided, if society's attitude is not right, it will create an abuse issue. But if the negative attitude changed, the environment will change for the better.

R4 further added that people would say, "Oh, OKU access is not my issue". What R4 pointed out shows that negative attitudes and lack of awareness among the wider public towards accessibility issues in the built environment contribute to an

inaccessible environment. Meanwhile, CL2 (collaborator, KLCH architect, access audit trainer) claimed that "People failed to see that accessibility on the road is critical. They just see only OKU face accessibility issues. What if you cannot get from one place to another?"

R4 also claimed that "Many of the OKU are still holding to the charity-based mindset. They just wait for some parties to give sympathy". Therefore, Disability Education Training (DET) was introduced by the MWFCD to educate OKU on how to interact with the environment. R7 (wheelchair user, OKU representative) explained:

DET has been introduced to OKU. How to interact with other OKU, what are the barriers that OKU faced, [and] how to polish OKU potential. We highlight that disability comes from the environment...to make them aware.

This thesis argues that disability does not only come from the environment (including society as the external factors) but also as a result of impairment effects (Thomas, 2012; Shakespeare & Watson, 2016). Nonetheless, with advocacy, more OKU could be trained and employed in building-related professions such as being an architect or urban planner that would make a difference in the long term. Ideally then, they would not have to rely on participation in collaborative planning or procedural justice as an OKU, the current results of which are relatively ineffective (further discussed in 7.3.2).

#### 7.2.3.3 Education through Act introduction

The introduction of the Persons with Disabilities Act 2008 (Act 685) does not provide a strong requirement for designers to provide OKU access since there is no provision of penalties for not providing it. However, the movement towards providing equal opportunities for OKU is shown through the introduction of this first rights-based legislation for OKU. The main aim of the Act is to provide an equalisation of rights for all society and according to Yiing *et al.* (2013), in the Act, universal design is the definition for 'access' (refer 4.3.2.1 for Act 685).

As discussed in 7.1.1, to gain approval from KLCH the PSP needs to state on submitted plans that their building will conform to the Persons with Disabilities Act 2008 on access for OKU (as well as the MS). Part III of the Act provides that OKU must be given the right to access and use public facilities, amenities and services, and buildings on an equal basis with the non-disabled. However, many of the research participants (e.g. P1, P11, P12, CL1, CL3, CL9) criticised that the Act does not have provisions for punishment if facilities providers do not facilitate OKU's access in the built environment. For example, as revealed by CL1 (collaborator, professional architect (PSP), access audit pioneer, academic):

The Act [Act 685] is just like information. The function is not the same as the Discrimination Act [as in the UK]. We can't sue...there's no enforcement element such as penalty or punishment [in the Act]. The government is not ready for that. Our public spaces are also not ready.

Nonetheless, according to CL9 (OKU development officer):

Any new Act implemented shouldn't be in a punishable form. It should be advocating, to create awareness among society. After almost nine years of being implemented, we're now ready for the amendment to include penalties. However, the enforcement element in the Act won't 100% solve OKU development issues. Let's say, if a building is not OKU employee-friendly, building owners could be charged. This will make employers think twice before employing OKU.

What CL9 explained does make sense. Since the Act is Malaysia's first Act regarding OKU, it should not directly be in a punishable form but more concerned with creating awareness among society. Furthermore, CL1 also admitted that the Malaysia government and the public space are not ready for any enforcement elements such as penalties. However, based on the discussion in 7.1.1.1, there is a potential that regulation can deal with this problem when accessibility issues are tackled prior to the building plan approved by the local authority.

Meanwhile, R1 (wheelchair user, OKU representative) claimed:

There are many people who think that the OKU Act has come up to look after...[and is] the answer for all issues faced by OKU, [where] all issues regarding OKU need to be referred to the Act. Yet, there's over 700 legislation, applied to everybody. OKU [is] part of society. OKU is a citizen [as well].

The comments by R1 raises a potential problem that there is a lack of recognition towards OKU. She disagreed that everything about OKU provision just needs to be referred to the OKU Act, rather R1 believed that all legislation in Malaysia should consider OKU's well-being as a citizen. It is possible that R1 was referring to some other Acts related to accessibility that can be enforced, where the provider could be penalised for not providing access for OKU; for example, the Street, Drainage and Building Act where the UBBL has spelt out details. Yet, this Act has also led to little serious action being taken (see 7.1.2.1 on enforcement of regulation conformation on site).

#### 7.2.4 Summary of accessibility education and awareness programmes

Issues related to the stakeholders' measures in accessibility education and awareness programmes in KL are summarised in Table 7-2.

Table 7-2 Summary of the issues in accessibility education and awareness programme measures in providing physical access for OKU in KL

Themes	Sub-themes	Summary of issues
Accessibility education and awareness programme	Technical training and awareness- raising programme	Extensively conducted by KLCH from 2010 to 2013 and seemed beneficial to the participants but the effectiveness in terms of a good access implementation was questioned by many
		Showed benefits to the participants and newcomers but being discontinued by KLCH
		Lack of examples of the accessible built environment
	Design consultation	The misconception of universal design among the implementers/providers
		A lack of access consultant and unreliability of consultation given
	Education and advocacy	Not all architectural training emphasised designing universally
		A negative attitude or little awareness towards OKU among the public
		Lack of OKU advocacy
		Act related to OKU was introduced in 2008 but without any punishment provision for not facilitating OKU provision

## 7.3 Participation and collaboration among the stakeholders

This section discusses challenges to the stakeholders in KL pertaining to participation and collaborative measures in achieving inclusive access in the city centre, divided into (1) collaboration among the stakeholders, and (2) OKU voice and participation.

#### 7.3.1 Collaboration among the stakeholders

Collaborative governance emerged as a response to the failure of the top-down approach by bringing public and private stakeholders together in collective forums to engage in consensus-oriented decision-making (Ansell & Gash, 2007). In the development of access for inclusion in KL, collaborations are made between the stakeholders, for example, in developing the national MS 1184:2014 Universal Design and Accessibility in the Built Environment – Code of Practice. The MS was developed by the Working Group for Disabled Persons and managed by the Department of Standards Malaysia (DSM). The collaborators in this working group included the local authority (i.e. KLCH), the Construction Industry Development Board Malaysia, government agencies (e.g. Department of Social Welfare Malaysia and Department of Local Government), associations of OKU, and a few universities. Meanwhile, the Technical Committee on Building Design and Construction supervised the development of the MS 1184:2014.

CL5 (collaborator, standards officer) explained that the DSM does not have experts in the accessibility field but acts as the custodian that manages the committee. The need for collaboration grows as knowledge becomes increasingly specialised (Ansell & Gash, 2007) as in the technical aspect of accessibility that includes the understanding of anthropometric and ergonomic studies. Hence, with the collaboration from different parties with various experience, skills and expertise, MS 1184:2014 was developed to provide references in designing universally that can

be conveniently referred to, not only for the architects/designers but for a layperson who has an interest in it.

According to CL5, DSM then collaborated with KLCH to promote the use of the MS 1184:2014, he explained:

For the promotion, we collaborated with KLCH. We signed the MoU [memorandum of understanding] for KLCH to enforce the standard as a local authority. KLCH is our capital city. We hope that other local authorities could see and follow KLCH as the model...there will be a chain effect.

Nonetheless, there are issues on the implementation and enforcement of this MS as discussed in 7.1.1 and 7.1.2.

R4 (wheelchair user, OKU representative) suggested that everyone in society should play their role in achieving accessibility. "If only one party takes action, things won't work", he claimed. CL3 (collaborator, MWFCD officer), felt that there is no one key actor in the success of inclusive access but all stakeholders are the key actors. CL3 gave the following example:

Just take KLCH as an example. They are the implementer, policymaker, [and] regulator. With a multi-sector collaboration, some parties can countercheck on KLCH efforts [in providing OKU access], highlight related issues, check what's done and what's not. If this process continues KL would have better access.

The example given by CL3 suggests that multi-sector collaboration is a very positive and idealised view that has the potential to promote and provide physical access for OKU's inclusion in KL city centre. However, not all stakeholders agree to work this way in practice, especially if they have a mind-set to only proceed with their conventional way of working and thinking (see some examples from IM1 and IM4 in 7.2.1).

#### 7.3.2 OKU voice and participation

Communicative/collaborative planning (Healey, 2003) is observed to be conducted in KL where voices from disabled participants were also being heard as part of a consensus-building process in providing physical access in KL. However, the effectiveness of OKU participation was questioned by those who had the opportunity to participate in public engagement. Hence, it is argued that the policy and planning direction emerging from collaborative discourses remain inexact (Brand & Gaffikin, 2007). For example, in providing a barrier-free pathway, whether it is right or wrong to have tactile blocks (guiding blocks for visually impaired person) while providing a seamless pathway for wheelchair users. However, collaborative planning is useful in understanding complexity and diversity (Healey, 2003).

Even though there was participation from OKU, however, the results on providing OKU physical access in the built environment are still not encouraging. The effort of bringing OKU participation in planning and design does not really feature in the

development. However, there is also collaborative governance conducted where the focus is also on targeting hidden voices.

In city planning, RG9 (regulator, KLCH planner) explained that they had conducted public engagement in the planning process by including representatives of OKU:

We don't just plan as we please. We conducted focus groups with OKU, the young generation, with business communities, resident associations. We go to ground to see, to talk to the people to engage with them and look at what they really want for KL before we come out with the draft. Then the draft was open for public reviewing.

It seems that planners had fulfilled their role in engaging with OKU, yet, the project implementation of physical access for OKU is handled by a different department (see 7.1.1.1 for example of a project done by PSP and 7.1.3.1 for KLCH in-house projects).

RG9 (regulator, KLCH planner) also added that:

We have the local agenda [Local Agenda 21 (LA21)] with public participation and involvement of the private sector and authority, and it's a bottom-up process. They have their own action plan; we just facilitate the logistics.

LA21 appears to be a good platform for OKU where OKU community or associations can have their own action plan while the local authority facilitates the logistics. This

thesis suggests that this could be one of the platforms for an OKU advocacy team to voluntarily submit reports on barriers in the built environment and propose rectifying actions. Furthermore, OKU themselves are the experts in identifying barriers since they are the ones who experience the barriers (Bailey *et al.*, 2015). However, R1 (wheelchair user, OKU representative) did not seem to be aware of the existence of the LA21 in KLCH but noticed that the LA21 exists in other local authorities in the Klang Valley which indicates that the promotion of LA21 by KLCH is not that extensive.

P10 had participated in KLCH's access audit training twice as a representative of the 'real OKU', working in a group with the other non-OKU participants. In some other groups, there was no OKU representative, but one of the group members was playing the role of an OKU in a simulation (e.g. blind folded and walking with stick, wheelchair bounded). With OKU involvement in the training session, "the non-disabled can see how wheelchair user manoeuvres, how the blind walks" (P10, male, wheelchair user). Even though both access audit sessions were for training purposes, P10 highlighted that the access audits were done thoroughly, along with access audit reports and rectification measures. However, he noticed that the building owner took no action to rectify barriers identified. Even official access audits conducted were followed by complaints about remedial action not being implemented (see 7.1.2.3 on access auditing).

Besides giving OKU the opportunity to participate in access audit (either in training sessions or in the actual access audit), KLCH also conducted a few dialogue sessions with OKU (Abdullah, 2014) as part of its public engagement programme.

R3 (wheelchair user, individual activist), however, showed his disappointment, "I've gone out for a dialogue session with KLCH, but where is the implementation?". Similar to R3, P10 claimed that "They [KLCH] asked for our input on OKU facilities. Not only once, but no implementation. The decision is still theirs" (see also 5.3.3 on R1's (wheelchair user, OKU representative) experience in participating in the discussion regarding inaccessible bus stops).

From the points highlighted by P10 and R3, it appears that the participants are expecting improvements from their input given to the responsible body. Inputs from OKU also indicate their ability to contribute to the development of society. However, non-implementation issues make them frustrated. Greenberg and Folger (1983) in Cohen (1985) highlight that the implementation choice is determined by management (the responsible body). Nevertheless, an awareness programme that involves both parties (the participants and the management) might help close the gap in the decision-making (Hazreena, 2006).

However, in terms of the rail service, IM8 (transportation operator) explained, "Our initiative was to get most of the OKU organisations' inputs when we prepare the upgrading plan". It was observed in the course of fieldwork that the upgraded stations of Ampang Line had mostly fulfilled OKU access requirements even though there were some other barriers noticed (see discussion in 5.2.1 for example). However, CL8 (collaborator, wheelchair user, researcher, OKU activist) pointed out, "Many people say, 'get the OKU involved', but if the OKU don't know, they get bullied by the people and aren't allowed to answer...what's the point?" Her statement suggests that OKU need to have knowledge and awareness of their rights in society,

so that they will not get bullied by others. Nonetheless, it is not a failure of OKU knowledge but of the organisation of the consultation. It is not enough to just set up a consultation process, but that process has to be well managed to make sure that there is genuine participation. Real recognition means treating people with respect in participatory processes. It is also necessary to take care of power relations so that people are comfortable in contributing. It is not enough to just invite people to turn up and speak.

By referring to enforcement issues in the provision of physical access in KL (see 7.1.2), action from KLCH is undertaken based on public complaints. When asked about complaints being received from OKU related to the built environment, CL9 (collaborator, OKU development officer) admitted:

We often received complaints from the public. When we forwarded the complaint to KLCH, they will take action but it's more on a case to case basis. We don't want that. If possible, a more holistic approach could be taken by the local authority.

CL9's statement could be understood that he hoped KLCH were being proactive in handling access issues without relying on public complaints. R7 (wheelchair user, OKU representative) however, hoped that more OKU would come forward to make complaints. He suggested that the more active OKU are, the more problems of accessibility could be solved. Nonetheless, based on responses from the 20 goalong participants, it is observed that none of them had made any complaints regarding access issues in the built environment through a proper and formal

channel. However, while on the go-along journey, many complaints on access were heard from them (see Chapter 5 and Chapter 6). P17 (male, walking unaided) admitted that:

Sometimes I have some thoughts on OKU facilities but don't know where to channel it. To voice it out, I've no power. So just keep it to myself...don't know how to share it.

The explanation provided by P17 supports the need for advocacy (as discussed in 7.2.3) among OKU to be strengthened with more publicity about how to make complaints to the local authority. Similar to P17, P2 (female, walking unaided) also admitted that she does not know how to complain. However, she believed that "Whatever happens has its own advantage. I was not taught to complain but we need to be grateful with whatever we have". Thus, cultural belief might affect how P2 thinks about complaining, based on how she was brought up. On the other hand, part of the reason for not complaining is possibly because P2 accepted that her disability solely comes from her impairment as in the traditional view of disability. The individual's defective body function is seen as the principal cause of difficulties experienced by disabled people (Barnes & Mercer, 2004; Bailey *et al.*, 2015).

Among the disabled participants, there were also those who have the preconceived idea that their complaint would not be entertained by the responsible body (i.e. P3, P5, P11, P13, P15, males, wheelchair users). For example, as claimed by P3, "Malaysian people...you know? They won't entertain any complaints. Even though you make a complaint, nothing will happen". In attending to this negative perception

held by disabled people, again, here is where advocacy (discussed in 7.2.3.2) can play an important role in raising awareness among OKU that they have the right to express their feelings.

#### 7.3.3 Summary of participation and collaboration among the stakeholders

Issues related to participation and collaboration among the stakeholders in KL are summarised in Table 7-3. Next, the conclusion of this last empirical chapter is given before the thesis moves to the overall conclusion in the next chapter.

Table 7-3 Summary of the issues in participation and collaboration measures in providing physical access for OKU in KL

Themes	Sub-themes	Summary of issues
Participation and collaboration among the stakeholders	Collaboration among the stakeholders	The need for stakeholders' collaboration in achieving an accessible built environment
		Not all stakeholders comfortable to work in a collaborative way but some choose to work in isolation
	OKU voice and participation	Inputs from OKU participation taken but not being implemented
		Some OKU do not know where and how to make complaints regarding access issues
		Some OKU think that complaining is not a right thing to do
		Some OKU have a preconceived idea that nobody would act if they make any complaint

#### 7.4 Conclusion

This chapter evaluates the effectiveness of measures taken by professional stakeholders in enabling OKU's inclusion in KL city centre and identifies factors constraining physical access implementation. Based on what has been discussed in this chapter, professional stakeholders' efforts to provide physical access for OKU's inclusion in KL city centre are generally not thoroughly effective.

Design to include access facilities for OKU is regulated by a framework of regulations. In order to obtain building plan approval, the requirements imposed by the regulator are usually followed by the applicant. This seems to be a positive approach to support access provision even though it is affirmative without the design being driven by the designer's own initiatives to provide access for all. Although designs may include access facilities for OKU from the start, generally this is just to fulfil the requirements from the local authority for the purpose of obtaining building plan approval. There seems a possibility that if the PSP were not required to obtain building plan approval anymore, OKU access would be neglected.

Generally, the regulators themselves have not taken physical access as an important issue for OKU's inclusion either in regulating the regulations, in enforcing them, or in monitoring that access facilities are provided on site. It seems that the compliance with requirements for OKU access provision is subjective based on the personnel who check and process the plans for approval. Any informal arrangements between the PSP and the approval personnel could potentially lead to a failure in providing good access.

Since the government introduced self-regulated certification by the PSP, they themselves certify that their building has been completed and complies with building regulations through self-issuance of CCC. The local authority is not responsible to inspect the completed building. Hence, there is a possibility that buildings are completed without OKU access since in general, complying to OKU access requirement seems not to occur by the designer's/architect's self-motivation.

Nonetheless, KLCH is making efforts to upgrade the current physical access (i.e. through access auditing, by forming a WhatsApp group to respond to complaints informally, and by conducting accessibility awareness programmes). However, for access audits, there is an issue raised on the implementation of the rectification as only limited numbers of building audited undergo the remedial action to adapt OKU access facilities.

Reducing red tape (e.g. by accepting complaints informally through WhatsApp) seems to be a good idea but it is not meant to be a proper channel for public complaints. Though, if the general public has access to one of the WhatsApp group members, the complaint will usually be taken prompt action since the responsible Head of Department in the group can directly give instruction to their staff for actions to be taken. Nonetheless, issues tackled are usually on enforcement action on the street, for example for vehicles parking on pavements that hinder OKU's journey. For complaints on fixed obstruction such as trees, and utilities poles and boxes on pavements, it was informed that KLCH had identified those barriers and were waiting for area upgrading to commence.

Training and awareness-raising programmes that were given to KLCH staff and later extended to other public sectors and external implementers (i.e. architects, contractors and hoteliers) are relatively effective in terms of changing the attitude of the technical and non-technical participants. A few professional interviewees admitted this as they had participated in one of the programmes or in commenting on their staff and fellow workers' awareness of OKU access before and after participating in the training. However, the effectiveness of these programmes could also be questioned in terms of producing good access in the city centre. This is when inaccessible buildings and the street level environment are still experienced in the go-along journeys even in new buildings and refurbished areas. It is suggested that the training and awareness programmes be continued as it seems inadequate in terms of the frequency of provision. Furthermore, the staff that hold the position as regulator and implementer in KLCH could be transferred within the organisation and new staff added to the technical team also need to be supplemented with necessary knowledge and awareness of the importance of OKU access for an inclusive society. In addition, technical knowledge gained in tertiary education regarding designing universally also seems inadequate. Universal design is being highlighted with differing levels of priority in universities offering architectural studies in Malaysia.

When discussing OKU facilities in the interview sessions, the majority of the regulators and implementers mentioned OKU parking spaces, ramps, OKU toilets, and lifts. However, in addition to the four facilities mentioned, there are other important details that require consideration in providing access for OKU (e.g. size

of doors and entrances, circulation space, staircases with safety features, the selection of floor materials, etc.). Furthermore, the size, location and position of the facilities provided are generally not considered for use by users with different abilities. In the worst situation, they do not facilitate OKU access at all but expose the user to danger. On the architect's/designer's side, the lack of knowledge on technical requirements is possibly caused by the guidelines and standards that are not easily accessible, and their narrow coverage.

Based on the go-along journeys, it was evident that obstacles and barriers hinder OKU from freely accessing the city. However, KLCH had made the effort to improve procedural justice in their planning and designing facilities and infrastructure when they involved the participation of OKU in matters related to physical access. Consideration is given to the participants' inputs in an effort to understand complexity and diversity testifying to attention given to collaborative approaches. Yet, physical access in the built environment is still not encouraging, and recommendations based on OKU input are generally not being implemented. The reason given by KLCH was that they have limited financial allocation for upgrading access facilities (referring to the three years allocation from the federal government). Consequently, KLCH has to prioritise which areas are to be upgraded and cannot follow what OKU representatives demanded (see 5.3.3).

With regard to the barriers faced by OKU participants, in general, they did not make any complaint to the local authority. However, OKU representatives were reported to complain especially when they were invited to participate in discussion related to accessibility. Some OKU accepted that they are the ones who had impairments and

that their disability comes from their impairment. Therefore, they do not complain of any difficulties they faced in life and are not even aware of their rights as a citizen. Meanwhile, some others realised that there are barriers that impede their inclusion but do not know where and how to make complaints. There are also OKU that have preconceived ideas that nobody would take action if they made any complaint.

As the final concluding point based on the discussion in this chapter, it can be summarised that there are four key factors constraining physical access implementation in KL: (i) lack of knowledge on technical requirements among the stakeholders involved in OKU access provision, (ii) lack of education and awareness of the importance of OKU access, (iii) lack of good governance practice in providing physical access for OKU, and (iv) lack of participation of, and advocacy for OKU. Understanding these factors will arguably lead to designing further measures to improve physical accessibility in KL and other cities with comparable planning and regulatory realities and face similar challenges.

The above implementation constraining factors are further presented in the next chapter, along with suggested pathways for transformative changes that stakeholders could take for the advancement of inclusive access. Aside from that, the next and final chapter wraps up the work by highlighting the thesis contribution as well as the thesis' key findings, and recommendations for future research.

#### **CHAPTER 8**

#### **CONCLUSIONS AND RECOMMENDATIONS**

Enabling access to the city centre is a crucial way to open opportunities for OKU to access employment, education, health care, and enjoyment of social life. An inaccessible built environment impedes OKU from participating in activities offered in the city centre and creates social exclusion. Thus, an inaccessible built environment may result in poverty, lower education, and poorer health (WHO & World Bank, 2011).

Accessibility is one of the contributory factors towards social sustainability (Dempsey et al., 2011) and promotes sustainable development (together with economic and environmental concerns). Providing OKU access to the city provides them with opportunities to empower their everyday life. In order to enable OKU to participate in activities offered in KL city centre, accessibility ideally starts at the very beginning when people leave their home, taking a variety of transportation modes until they reach their destination or are connected to the next destination. Accessibility has been understood in this thesis as spatialised, in other words as an issue of 'spaces' as explained in the geographical model of disability (Zajadacz, 2015) which intersect with individual biological and psychological conditions. The interaction between OKU and the environment (Lid & Solvang, 2016) including the built environment varies in many ways due to their personal biography (Reeve,

2004; Meyers, 2014) which includes both intrinsic and extrinsic factors (Shakespeare & Watson, 2016).

Addressing the ambitions of inclusion in a country like Malaysia is highly relevant. Malaysia is transitioning from a developing to a developed country. Despite its rapid economic growth and urbanisation, Malaysia remains on the Development Assistance Committee (DAC) list of recipients of official development assistance (ODA) under the Organisation for Economic Co-operation and Development (OECD) (OECD, no date). Hence, there are tensions between Malaysia's economic development ambition, the state of cities' development and socio-economic realities, which impact individuals with disabilities. The development of Malaysia's capital city, KL, is representative of a mixed urban built environment, which offers an opportunity to examine the issues of physical accessibility for the inclusion of disabled people in a transitioning capital city. Similar challenges are occurring in other transitioning cities across the nation and the Global South which supports the research's relevance.

KL has a commitment to foster an inclusive, barrier-free and rights-based environment for OKU following the Biwako Millennium Framework for the Asian and Pacific region. Moreover, KL agreed to adopt and enact laws for OKU to have equal rights in society under the United Nations Convention on the Rights of Persons with Disabilities. Thus, there are national policies, acts, guidelines and standards that KL applies alongside the KLCH's own policies, by-laws, guidelines and standards pertaining to the provision of physical access for OKU. Nonetheless, issues with the enforcement of the legal framework (Maidin, 2012) and implementation and

enforcement of regulations for OKU access (Hussein & Yaacob, 2012; Kamarudin *et al.*, 2015; Bashiti & Rahim, 2016) in Malaysia raise a potential problem that affects OKU's inclusion. Hence, the implementation and enforcement issues have also sparked the rationale for this research to investigate physical accessibility with a case study of KL city centre which has undergone a massive expansion over the last decades.

#### 8.1 Contributions of the research

The case study of KL city centre contributes to the academic literature on disability and accessibility in developing cities. KL represents a transitioning city in the Global South with multi-racial and multi-faith citizens which is under-researched. The findings are of relevance to other cities in similar transition across the country (e.g. Penang, Johor Bahru) as KL is generally the first to implement the national laws and regulations. Besides, other national cities are sharing the national cultures, religions and ethnic context. KL, on the other hand, is not typical in many ways because it is a much larger and more international city. Other cities in neighbouring countries with similar social and cultural contexts (e.g. major cities in Indonesia), same region (e.g. Bangkok), and other cities facing similar challenges at similar transitions (although with a different cultural context) can benefit from the KL case study (e.g. Cape Town, Buenos Aires, Mexico City). Hence, it brings insights from a different perspective on disability and the challenges surrounding the provision of access, compared to perspectives from the Global North as most offered in the current literature. This is the first contribution of this thesis.

Second, this thesis is enriching existing knowledge of accessibility by deepening the understanding of person-environment interaction, specifically on the interaction between disabled people and the built environment. This thesis has provided evidence of the lived experience of persons with mobility difficulties in negotiating barriers in the built environment that affects them in numerous ways including psychologically and emotionally. These dimensions are not explored in the quantitative research and research employing checklists (i.e. access audits) that has taken place in Malaysia to date. It provides insights for the facilitation of physical access for OKU's inclusion for the providers (e.g. the implementers and policymakers) by emphasising access barriers and facilitators.

Finally, recommendations for enhancing the current physical access in KL city centre that are given for various stakeholders later in this chapter could be disseminated to the stakeholders involved in providing and promoting physical access for OKU. With appropriate actions taken by the stakeholders, addressing accessibility issues as highlighted in this thesis will eventually benefit disabled people and other physical access users and thus, could also contribute to social sustainability ambitions. However, there is a case to be made that the provision of an accessible environment is not achieved merely by removing whatever barriers and physical obstructions that are present, but necessitates considering accessibility from the preliminary process of design and planning of the access or services, including in the policies and requirements imposed by the local authority. It can be argued that new and transformative approaches are needed to better recognise OKU end users; those need to be accounted for by the stakeholders

involved in the urban making process such as developers, planners, architects and building control authorities. However, when affirmative approaches, in other words approaches aiming to remove barriers, are adopted, the same problem of an inaccessible built environment may occur when those are not applied throughout the city scale; a change of mind is thus needed for policymakers. As such, huge and timely efforts need to be given for the adoption of a truly transformative and spatially inclusive approach. In the meantime, affirmative approaches could be employed, for example, by conducting access audits and in removing identified accessibility barriers. Support from every level of society is needed in transforming the current state of physical access in KL city centre towards realising an inclusive society. Pathways for transformative change are hence provided in section 8.3 as the contribution of this thesis.

### 8.2 Key findings of the research

This research aimed to investigate physical accessibility in a transition city that has been affecting the inclusion of disabled people, with KL city centre as the case study. Returning to the research questions posed at the beginning of the research, I here summarise the key findings:

# 8.2.1 What is the state of the regulatory frameworks surrounding the provision of physical access for disabled people to KL city centre?

The key policies and regulations pertaining to disability in KL were presented in Chapter 4. The Malaysian policy for OKU has laid specific objectives for OKU's wellbeing that have led to the formulation of other policies and regulations for OKU recognition and empowerment in Malaysia, such as the setup of the National Council for OKU, and the Disability Action Plan (2016–2022). Enhancing inclusiveness towards an inclusive society and strengthening infrastructure to support economic expansion are among the Six Strategic Thrusts of the Eleventh Malaysia Plan (2016–2020). The common directions in these plans and policies are associated with 'inclusive society' and 'infrastructure improvement'.

As the capital city of Malaysia, KL not only follows national-level policies and legislation but also has its own access requirements for OKU inclusion. There are Acts, standards as in the code of practice, and guidelines formulated that promote the implementation of universal design, especially in the KL planning and building control process (including for the street level environment). The regulations are also to be conformed to in the design of transport-related facilities (e.g. train stations and transportation terminals). However, there were no written standards of accessible transportation in Malaysia at the time this research was undertaken.

The voluntary Malaysian Standards (MS) on OKU access were made compulsory with the insertion of the Uniform Building By-Law (UBBL) 34A in 1991 (124A for the amended UBBL for Federal Territory of Kuala Lumpur) and existing buildings that

were built without consideration of OKU access need to provide the requirement within three years from when the amended UBBL was gazetted in every state. However, there is apparently no action taken against the building owner if access facilities are not provided in an existing building. Meanwhile, an Act directly related to OKU access (the Persons with Disabilities Act 2008) does not give power to the regulators to penalise or prosecute parties that fail to comply with the Act. Even though the Act does not provide any penalty, the introduction of the Act in 2008 indicates a positive development regarding the governance of disability in Malaysia; from charity to the rights-based approach. The Act recognises and promotes an equalisation of rights and the importance of accessibility for OKU in order to participate in society to the fullest. It can be argued that this Act is more about educating people on OKU's rights and interestingly it includes 'universal design' as the definition for 'access' (see 4.3.2.1).

Nonetheless, the go-along journeys undertaken with OKU research participants appeared to show evidence that there is inconsistency between the policies and the reality of access provided in KL. Although the Malaysian government and KLCH has developed substantial provisions related to the accessibility of the built environment and particularly for OKU access, generally disabled people still encounter physical accessibility issues that affect many aspects of their lives. It can be argued that the will from the regulators, implementers and the service providers to implement the regulatory frameworks regarding OKU access is missing.

KLCH as the local authority is seen as having important roles in enforcing, monitoring, implementing and auditing physical access, as well as supplementing

detailed regulations, giving guidance and providing training of those concerned. However, collaboration from other government agencies and non-governmental organisations is needed in matters related to OKU's wellbeing.

8.2.2 What are the barriers and facilitators experienced by disabled people in accessing KL city centre and how do they affect the inclusion of disabled people?

Barriers and facilitators experienced by OKU while accessing KL city centre were presented in the empirical chapters 5 and 6. Evidence from the go-along journeys indicated that facilities in transportation, buildings and the street level environment are not totally OKU-friendly. Barriers in the built environment are seen as a series of obstacle courses as viewed by Hall and Imrie (1999, cited in Carmona et al., 2010). OKU still needed to get assistance from others to continue their journey to the city centre. Even though some of the participants were willing to be assisted, the majority of them felt that they should be granted easy access to enable them to move independently. OKU with mobility difficulties are very concerned about having an accessible built environment that could enable them to move freely around KL city centre. Among them, wheelchair users seemed to need more support from other people in order to make their journey, because of the inadequate provision in terms of accessibility. Yet, being literally lifted by others to get to another floor level for example, makes OKU feel uncomfortable (e.g. for safety concerns and being watched by others); it also makes them feel inferior for not being able to do things independently. These feelings are among the impacts that could restrict OKU from enjoying social life and which constitute the psycho-emotional dimension of disability as discussed in the extended social-relational model (Thomas, 1999 cited by Reeve, 2004). Some OKU would rather stay at home than compromise safety or expose themselves and be hurt emotionally. For Hahn (1986, cited by Gleeson, 1998), the inaccessible built environment or what Hahn termed as 'discriminatory design' can cause social oppression. Nonetheless, not all physical barriers or psycho-emotional impacts were experienced to the same degree by all OKU. The go-along experiences provided evidence that barriers were negotiated differently depending on individual biological factors, psychological factors and also the social factors such as the surrounding environment and society. This result is consistent with the biopsycho-social model (Dogar, 2007; Kastenholz *et al.*, 2015) and the geographical model of disability (Zajadacz, 2015).

Examples of the barriers in transportation include limited space for wheelchair storage in taxi's boots since the NGV (natural gas for vehicles) took up the space. Therefore, the wheelchair will usually be placed in the back seat. Hence, fewer passengers can join in a ride and more taxis are needed to transport a group for an outing. For the rail services, even though there were priority seats for OKU, some seats' material was apparently slippery which posed a danger. Other barriers in the rail services include facilities in the train stations such as the lifts and escalators that often cannot be used (claimed to be under maintenance), and the gap between the platform and the train door. For bus services, most of the kerbs at bus stops were too high and not provided with a kerb cut. There were also limited numbers of accessible bus and limited accessible routes. Meanwhile, mobility vans were

appreciated by wheelchair users since they do not need to be transferred from the wheelchair to the car seat (contrary to riding a car or taxi). However, the numbers were very limited and booking was uncertain. There were also OKU driving their own vehicle (or family-owned). It provided more freedom for them to reach their destinations, but the OKU parking space was very limited.

The lack of safety controls in transportation (e.g. gap in between the train and the station platform) and in buildings and the street level environment (e.g. the absence of railing at the edge of a ramp) resulted in the majority of the participants taking more time in their journey as they were more conscious of threats posed by the barriers they faced. This issue also caused some of the participating OKU to feel they might just give up continuing their journey and prevented them from living to their full potential. Many other safety issues were regarding the changes of level and on vertical access either in buildings and the street level environment, and in transport-related facilities (e.g. train stations and transportation hubs). As mentioned earlier, when wheelchair users needed to be carried by others in climbing up or down a staircase, they were compromising their safety. Fear and anxiety of having to face such barriers in the built environment affected OKU's emotions and bodily integrity.

The inappropriate design of facilities inside and outside buildings also caused physical barriers to disabled users. Inappropriate design included the ineffective dimension of facilities, the inappropriate gradient and design of ramps, lack of signage and information in buildings, the faulty location (unreachable) of grab bars and handrails (especially in OKU toilets), and inaccessible indoor ablution areas (for

religious purposes) with a kerb as a barrier preventing wheelchair uses from reaching the water tap. There was evidence of poor practice in the design of counters and display areas: inappropriate height of counter for diversity of users' height and wheelchair users, and museum exhibitions on platforms without wheelchair access. These situations indicated that although there was some awareness from the service providers in facilitating OKU, they apparently have limited knowledge on the technical requirements on OKU ergonomics, especially regarding working at a different height from other 'standard' human reach (e.g. wheelchair user's requirement to reach and interact at a ticketing counter). Meanwhile, in the street level environment, the barriers might come from physical obstruction from trees, street furniture and utility poles and boxes located in the middle of pavement. Connectivity issues might occur in many situations where accessibility is disjointed. This can be caused by fragmented accessible areas (area upgrading was undertaken in patches and not side by side), split levels and changes of pavements and arcade levels, and the effects from poor maintenance of street and the pavement surfaces.

Meanwhile, access facilitators in building entrances and the internal circulation of buildings (including in transport-related facilities e.g. train stations and transportation hubs) included a step-free entrance, appropriate ramp gradient with railing, and vertical access such as lifts, stair lifts and escalators. Access facilitators in buildings' internal features and services (for counters and display areas) included the introduction of low counter, appropriate height of shop display and exhibition area. For toilet and sanitary facilities, access facilitators included appropriate dimension

and location of the toilet door, and clear OKU toilet signage. It is suggested that the facilitators identified (e.g. avoiding steps by introducing a gentle gradient) can be taken as best practices that can be replicated in other new or refurbishment projects related to transportation, buildings and the street level environment.

The negative attitude towards OKU indicated that the barriers faced by OKU are not only physical but also attitudinal (Carson, 2009). A transportation-related example was when a taxi driver asked for a more expensive fare and refused to refer to the taxi's meter when driving OKU to a destination. In addition, it was a humiliation to one OKU when a taxi driver questioned his ability to pay. The situation indicates that OKU are often stigmatised by the assumption that they do not own money. This is a form of nonrecognition and disrespect (Fraser, 2003; Honneth, 2004). Meanwhile, the example of a negative attitude towards OKU in the built environment was when the OKU toilet was misused as a janitorial store. These examples indicate that there was lack of recognition towards OKU, thus, causing discrimination against them. Hence, recognition is needed in avoiding humiliation and disrespect to OKU. In addition, OKU's own negative perceptions and impressions (e.g. public transport facilities are not accessible) could also deter them from exploring the use of public transport to KL city centre, thus limiting their mobility.

It was clearly evidenced in the go-along journeys that that negative environmental factors (barriers) hinder OKU's inclusion, while positive environmental factors (facilitators) support their participation in society. Access barriers hamper disabled people's full participation in society and hence, impede their opportunity to access education, employment, healthcare and other services that need them to be

physically present at the place that offers those services. All the barriers presented had caused an inaccessible built environment that indicates less recognition towards OKU in design, thus, limiting their capabilities. This is a matter of cultural imperialism (Young, 1990) when the norms portray OKU as the people who cannot live independently. However, from what was observed in this research, the environment plays a significant role in disabling OKU as well as their own impairment (Thomas, 2012; Shakespeare & Watson, 2016). Inability to physically access education for example, would restrict OKU from finding a good job opportunity; thus, resulting in OKU being marginalised. Hence, it is critical to construct enabling environments that promote social independence which emphasise the capabilities rather than a person's impairment (Corker; Hales, 1996 in Gleeson, 1998).

Regarding the lack of physical access facilities, financial constraints were the main reason given by the service providers. In viewing this issue from a justice perspective, providing an inclusive and accessible environment should be regarded not as an add-on requirement in design but should be incorporated from the start as part of delivering OKU's rights as a citizen. Budget allocation for OKU access is needed in order for OKU to participate in society to the fullest as other citizens. Moreover, different people might need different levels of resources in order to achieve the same outcomes, and hence, the cost should not be seen as an unnecessary burden on the service providers. Thus, there is a clear argument to justify spending more resources on OKU in order to equalise their capabilities with others.

# 8.2.3 How effective are measures taken by professional stakeholders in providing physical access for OKU inclusion in KL city centre and what are the possible reasons behind any physical access implementation gap?

Based on what was discussed in Chapter 7, it can be concluded that generally, the professional stakeholders' measures in providing physical access for OKU's inclusion in KL city centre are not thoroughly effective. This could be related to the claim that building and planning legislation have been unsuccessful in eliminating discriminatory urban design (Imrie, 1996). As a result, the design and development processes are regarded as disabling and 'disablist' (Imrie, 1996; Imrie & Hall, 2001). The planning and implementation of physical access includes issues related to the local authority's enforcement of legislation and the implementers' compliance. Even though the implementers comply to the regulator's requirements, the regulators themselves have not taken physical access as an important issue for OKU's inclusion either in regulating the regulations, in enforcing them, or in monitoring that access facilities are provided on site. What is then provided does not necessarily comply to the standards provided by the Department of Standards Malaysia (Malaysian Standard 1184:2014 Universal Design and Accessibility in the Built Environment). Hence, although there were a lot of the so-called access facilities (e.g. ramps and kerb cuts) provided by the implementers, many did not meet the purpose they were built for. In addition, the 'access facilities' might pose danger to the user (e.g. ramp with a steep gradient).

Accessibility education and awareness-raising programmes on the importance of OKU access are handled either at local level (by KLCH) or the federal level. The technical training and awareness-raising programmes brought positive change among the technical staff involved in regulating and implementing physical access compared to their knowledge and awareness of OKU access issues before participating the programme. However, technical knowledge gained in tertiary education regarding universal design seems inadequate. In Malaysian universities that offer architectural studies, the topic is addressed to varying degrees. It was found that in one of the pioneer architectural schools, universal design may be taught depending on the individual teaching personnel's awareness. Universal design is arguably the solution for accessibility issues in the built environment. Using the concept of universal design when designing buildings, public spaces and transportation is a way to promote a better and fairer environment towards realising an inclusive society for all types of users. Other than benefiting OKU, universally designed facilities can also benefit people with different health conditions, pregnant mothers and with young children and the elderly.

In terms of design consultation, KLCH staff provided the submitting person (professional architects and engineers) with advice based on their previous experience providing comments and regulating OKU access design. There was no dedicated person or access officer responsible to give consultation in the building plan approval process but rather this depended on the regulator responsible for the development area/zone. Hence, the effectiveness of the consultation depended on individual technical knowledge and awareness of the importance of OKU access.

This also determined what access facilities are to be provided by the implementers and where (and whether those facilities will effectively facilitate OKU).

The effectiveness of the participation of OKU in decision-making processes and collaboration among the stakeholders were also evaluated. There were apparently efforts to bring about OKU participation in planning and design (e.g. in a dialogue session with KLCH Mayor, inviting OKU representatives as the inspectors in audit access, and involving OKU input in pavement upgrading), but the results did not really feature in the development. Nonetheless, collaboration efforts made by the Department of Standards with local authorities, OKU organisations, universities and a few other parties are an example of successful collaboration in the development of the Malaysian Standards related to OKU access. However, there were still many stakeholders that do not like to work in collaboration especially if they have a mind-set to only proceed with their conventional way of working and thinking.

Nonetheless, it is noted that there are various challenges faced by the implementers in implementing KLCH in-house projects, e.g. financial constraints, site constraints, and lack of cooperation from building owners, which should be considered in evaluating the effectiveness of actions being taken in providing access for OKU. In investigating the physical access implementation gap (between legislation and standards on paper, and what is achieved on the ground) in KL city centre, four factors emerged as constraining implementation and therefore the inclusion of disabled people.

First, there is a lack of knowledge on technical requirements among the stakeholders involved in OKU access provision. This lack was seen among the stakeholders involved in the design and regulation of physical access and facilities for OKU. There were situations where the providers seemed to have awareness of the need to provide OKU facilities, but their lack of knowledge on the technical requirements prevented the facilities from effectively serving their purpose. Thus, access barriers were still experienced in new and/or refurbished buildings and public places even though building plans were supposed to be checked by the technical staff before they were approved. It seems possible that the technical persons (both the regulator and implementer) were not well versed on OKU access requirements. Hence, access facilities that were supposed to be provided in the plans were not thoroughly checked by the regulator, nor provided effectively to be used by disabled users.

Second, there is a lack of education and awareness of the importance of OKU access. Data gathered in the professional interviews reveals that awareness of the need to provide access and how people think about access for OKU differs among individuals. Thus, this is reflected in the quality of access facilities provided. Even though the effectiveness of accessibility education and awareness programmes by KLCH can be questioned, the continuation of the programmes is important provided that the effectiveness of the programme is evaluated. The lack of education and low awareness of the importance of OKU access can be argued to be the main reason that people have negative attitudes towards OKU and are reluctant to give cooperation in facilitating OKU access. Among the developers and building owners,

this lack could make them think that providing access for OKU is an unnecessary expense. This situation is potentially caused by their misunderstanding of appropriate provision for physical access in their premises, in a similar way to how architects have misconceptions of universal design terminology as designing specifically for disabled people.

Third, there is an absence of a holistic approach in terms of practicing good governance such as in enforcing and regulating laws and regulations pertaining to OKU access. Lack of good governance practice is arguably related to the two previous factors presented: lack of knowledge on technical requirements, and lack of education and awareness of the importance of OKU access. The collaboration between parties involved is arguably not well coordinated. The lack of a collaborative planning approach from multi-sectoral stakeholders would prevent checks and balances between the architect's/designer's work, the regulatory body and inputs from OKU. Poor coordination (including in communication) between the local authority and the relevant agencies involved in the provision of physical access is more likely to lead to an inaccessible environment. These examples of governance flaws may lead to development that is far from transparent, accountable, effective, and equitable.

Finally, there is a lack of participation of, and advocacy for OKU. Despite the fact that OKU representatives were invited to participate in the planning and design process in KL, the results on providing OKU physical access in the built environment are still not encouraging. The effort to include OKU in the decision making is not really reflected in the development. Hence, advocacy is seen to play an important

role for social change and a powerful tool towards OKU's empowerment. Advocacy is arguably critical in supporting the capabilities of OKU to achieve a better life and could be also supplemented by professional bodies and the non-governmental organisations. More OKU could be trained and employed in the built environment-related professions such as architecture or urban planning as a result of advocacy, which would have a long-term impact.

#### 8.3 Pathways for transformative change

Based on the implementation constraining factors highlighted above, pathways for transformative change (PfTC) are suggested as some possible actions that can be taken by various stakeholders to enhance accessibility in the specific case of KL, a city in transition as follows:

# 8.3.1 PfTC 1: Tackle the lack of knowledge on technical requirements among the stakeholders involved in OKU access provision

Recommendations for policymakers

Technical staff involved in regulating and implementing physical access should be given more opportunity to attend courses on OKU access locally and internationally, enhancing their capability to regulate and implement design towards an inclusive physical access.

- It should be ensured that the trained staff are able to train others in their department or institution through conducting periodic in-house workshops on technical requirements for OKU access and the universal design concept.
- Two-way knowledge exchange between the policymakers and OKU through forums and dialogue sessions should be promoted, and OKU representatives should have opportunities to participate directly in planning/designing related facilities to ease their mobility.

#### Recommendations for regulators

- Clearer guidelines and standards with wider coverage of the access facilities' details to suit local needs should be provided for reference by local architects. This includes the provision of three-wheeled motorcycle (with wheelchair compartment) parking and facilities for religious purposes such as access to the ablution area in *surau* and *masjid* which are not provided in the current guidelines and standards on accessibility.
- Guidelines and standards should be made more transparent and accessible to architects/designers and service providers. Some of the guidelines and standards are currently expensive to obtain (e.g. the Malaysian Standard 1184:2014 Universal Design and Accessibility in the Built Environment), which is a problem in encouraging their uptake.
- Regulators should ensure that designs conform to the same regulations on physical access, and that regulations are consistent. This should aim to make

the built environment 'more predictable' to OKU and may reduce the feelings of anxiety and uncertainty among them while accessing and exploring the city centre.

KLCH should provide a prototype or choose an example of an accessible building (and the internal features) that can be referred to tangibly by architects and other service providers. For the street level environment, KLCH already refurbished a stretch of area (Jalan Tuanku Abdul Rahman) as an example of an accessible public space that they term a 'seamless' environment. This can also be used as a good example.

#### Recommendations for implementers and service providers

- Malaysian Standards related to universal design should be referred and conformed to in designing buildings (including for transport-related services e.g. train station) and public spaces as the current most extensive standards provided to include access for all, including OKU.
- Buildings and internal features (e.g. ticketing counters) should be designed that balance aesthetic value and access practicality, recognising OKU's rights to use the facilities as equal to other citizens.
- Existing building owners should hire an expert to conduct an access audit to identify barriers and carry out adaptations where needed. They could hire an access consultant (which is still not common in KL/Malaysia), or apply for KLCH

consultation, or even invite OKU to audit their premises. OKU themselves are the experts in barriers.

- Best practices in designing buildings, their internal features, public spaces and transportation services should be replicated. Best practice includes to:
  - Introduce a gentle gradient and avoid steps where possible.
  - Include vehicles with a wheelchair ramp or with a hydraulic powered lift as part of transportation services to allow easy access for wheelchair users.
  - Have dedicated staff or Security Police with knowledge of the correct technique to assist OKU to safely use public transportation.
  - Provide CCTV in areas where OKU are likely to face barriers.
  - Have a designated alternative entrance for wheelchair users if not provided at the main entrance.
  - Take safety issues seriously in designing and providing access facilities
     (e.g. avoiding sharp edges and slippery surfaces for building internal features and also for furniture (e.g. seating) design).

# 8.3.2 PfTC 2: Address the lack of education and awareness of the importance of OKU access

#### Recommendations for policymakers

- In improving recognition towards OKU, awareness-raising programmes for regulators and implementers should continue to be provided either by KLCH or other related agencies involved in promoting an accessible environment.
- The school curriculum should include awareness about OKU inclusion starting from early education.
- Universal design should be made a compulsory element in the tertiary education syllabus for built environment professionals.
- The Ministry of Women, Family and Community Development (MWFCD) should conduct talks and seminars on the importance of OKU inclusion for teachers and students in order to create awareness in the younger generation.
- Interaction between non-OKU children and OKU children should be encouraged, so that interaction with OKU can be seen as just a normal activity.
   This can tackle discrimination and stigma associated with disability.
- A campaign for OKU inclusion could be instigated in the mass media i.e. through posters, newspapers, magazines, radio, television, and the internet. This effort can raise the awareness of disability and OKU access needs among wider society.

- The government should encourage the public to assist OKU by having the proper techniques to safely and comfortably assist them while using transportrelated services. The skills can be learned through mass media such as from YouTube and awareness posters.
- An interactive application (app) with accessible building and accessible route mapping (access information) could be developed and aid OKU in planning their journey to KL city centre. This app needs to be promoted among OKU allowing them to become more aware of the current accessibility offers and hence indirectly facilitating their inclusion.

# 8.3.3 PfTC 3: Account for the lack of good governance practice in providing physical access for OKU

Recommendations for policymakers and regulators

- Accessibility should be given higher priority in allocating budget. More recognition should be given to OKU to enable their freedom and exercise of human rights which may involve providing more resources to support OKU to participate in social life and the city to the fullest.
- While working towards a transformative approach in the longer term, officers should be employed to take charge in ensuring access facilities are provided prior to approving applications for new and refurbishment buildings and public spaces.

- Procedures should be set up for reviewing the effectiveness of the regulatory framework surrounding the provision of physical access for OKU including measures to empower the Persons with Disabilities Act to include penalties for the service providers for not providing access for OKU.
- Effective enforcement mechanisms should be established in imposing universal design in development, for example, by imposing penalties in the Person with Disabilities Act for those not providing reasonable access for OKU into buildings and public spaces.
- The plan checking process (including reviewing and evaluating the design of OKU access facilities) prior to the issuance of the building plan approval should be conducted by competent professionals. The competency relates to their technical knowledge of OKU access requirements and awareness of the importance of OKU access.
- Collaborative planning approaches should be used to get support from other stakeholders and for a check and balance in-between the architect's/designer's work, the regulatory body and OKU representatives on matters related to accessibility. Both top-down and bottom-up approaches are needed in order to minimise constraints faced by the implementers/service providers.
- Two-way communication and cooperation between the regulator and the designer is desirable. It is suggested that access consultation that involves discussion of the PSP and KLCH, and the plan checking process should be

further strengthened. Both processes are done prior to the issuance of the building plan approval.

- Project monitoring should continue to be conducted by the local authority for counter-checking the provision of accessible facilities on site even though selfregulation is applied by the PSP.
- KLCH should coordinate development projects to ensure that all parties involved in the development have considered OKU access. Good coordination leads to better implementation of what was planned if a responsible body oversees certain projects or developments and is able to prioritise issues arising, including on resources, enforcement, jurisdiction conflicts, and contrasting priorities.
- KLCH or any assigned responsible body should follow up with building owners/managers whose building has been the subject of access audits, to ensure the necessary positive actions are undertaken.
- Procedures for making access complaints should be simplified and an online platform developed/promoted for making complaints to responsible bodies, including transportation operators and KLCH.

#### Recommendations for service providers

External service providers (other than from KLCH) should inform KLCH before fixing or assembling service equipment (e.g. fire hydrants, advertisement poles, electric supply cabinets). This information would facilitate coordination by the responsible body in ensuring inclusive physical access.

#### 8.3.4 PfTC 4: Consider the lack of participation of, and advocacy for OKU

#### Recommendations for policymakers

OKU should be given more opportunity to participate in decision making processes in society that addresses controversial issues that affect their life.
 OKU's insights and expertise are valuable to be translated into effective change (e.g. in practice, policy, and access auditing).

#### Recommendations for service providers

 OKU should be given more information on and exposure to available accessible services such as by conducting outreach programmes to enable OKU to explore public transportation.

#### Recommendations for OKU organisations

- Formulate strategy on how to demand an accessible built environment, e.g. by having a consensus among OKU with different impairments prior to submitting the paperwork to the responsible bodies.
- Use LA21 as one of the platforms for an OKU organisation or advocacy team to voluntarily submit reports on barriers in the built environment and propose rectifying actions.
- Increase publicity about how to make complaints to the local authority and exert pressure on the responsible bodies on OKU's rights.

 Promote advocacy to let OKU understand their rights as a citizen and have equal treatment to others.

#### Recommendations for OKU

- OKU should give input and cooperation to OKU organisations in conveying their needs to the policymakers, regulators, implementers and service providers on OKU access requirements.
- OKU should also look for opportunities to participate more than as the end user by raising complaints and becoming heard in society.

Recommendations for the private sector and the general public

- Involve OKU in corporate social responsibility projects.
- Join volunteering work to get involved with OKU and give a continuous commitment to OKU inclusion.
- Encourage family, friends and co-workers to join programmes that enable them to interact with OKU.

#### 8.4 Areas for future research

This thesis's fieldwork was completed just before the Klang Valley Mass Rapid Transit (MRT) was launched. Thus, physical access concerning this new rail service is recommended for future research in investigating its effectiveness in facilitating OKU inclusion in KL city centre. The proposed research needs to consider OKU's

journey to access MRT from where they live as well since connectivity from one place to another (i.e. from OKU's house to MRT station) is argued to be an important aspect for OKU inclusion, as highlighted in this thesis.

For the go-along interview method, this research was conducted to gather data from the viewpoint of OKU with mobility difficulties. Perspectives through the lens of sensory, mental and other physical disabilities are important in order to evaluate the inclusion of disabled people in the city centre, but are not included in this research. Hence, future research is also suggested to investigate access experiences and perception from other spectrums. Furthermore, there is no fixed solution in universal design. Future research could be undertaken to investigate how architects and designers negotiate various aspects of access requirements from different categories of impairment for inclusive access.

95% of the go-along participants were Malays, thereby restricting the data to the ethnic majority only. While KL and Klang Valley has multi-racial ethnic groups, it is proposed that future research should include other ethnic groups according to the population ratio for the sample's representativeness.

Finally, this work, designed as a single case study, researched KL as an example of a city in transition. Future research is proposed to consider multiple case studies from the Global South with a similar economic and urban growth stage of transition. Hence, a comparison could be made between the chosen cities to better understand the complex issues in providing inclusive access for disabled people in transitioning countries and cities.

#### LIST OF REFERENCES

Aaron, C. (2015) *Taxi operators: Drivers to be blamed for poor reliability of Proton taxis*. Available at: https://www.carlist.my/news/taxi-operators-drivers-to-be-blamed-for-poor-reliability-of-proton-taxis-59120/59120/ (Accessed: 3 July 2017).

Abdullah, D. B. (2014) 'Innovative policy 2014: Access auditing under the Accessibility Action Plan of 2010', in *Zero Project Conference*. Vienna.

Abdullah, W. A. W. (2013) Supported employment: persons with learning difficulties in Malaysia. University of Warwick.

Abidin, N. Z. (2016) Designing sustainable city centre regeneration in Malaysia: The case of Kuala Lumpur. University of Birmingham.

Adams, S. K. (2006) *Disability , Access and Design: A Study of Wheelchair Access*. Bournemouth University.

Ahmed, A. *et al.* (2014) 'The Response of Accessibility Infrastructures for PWD to National Disability Policies in Higher Institutions of Developing Countries: Case Study of Ahmadu Bello University, Zaria and University of Malaya, Kuala Lumpur', *Journal of Surveying, Construction and Property*, 5(1).

Alkire, S. (2005) 'Why the Capability Approach?', *Journal of human development*, 6(1), pp. 115–135.

Almselati, A. S. I., Rahmat, R. A. O. K. and Jaafar, O. (2011) 'An overview of urban transport in Malaysia', *Medwell Journals*, pp. 24–33.

Amin, A. S. and Manap, J. (2015) 'Geography, poverty and Malaysian disabled women', *GEOGRAFIA Online Malaysian Journal of Society and Space 11*, 7(7), pp. 82–91.

Amin, A. S., Shaari, A. H. and Khairuddin, K. F. (2020) 'Barriers to marriage and motherhood: the experiences of disabled women in Malaysia', *History of the Family*. Routledge, 25(2), pp. 246–264.

Anastasiou, D. and Kauffman, J. M. (2013) 'The Social Model of Disability: Dichotomy between Impairment and Disability', *Journal of Medicine and Philosophy*, 38(4), pp. 441–459.

AnnaMap (2018) *Map of Malaysia*. Available at: http://www.worldatlas.com/webimage/countrys/asia/my.htm (Accessed: 11 December 2020).

Ansell, C. and Gash, A. (2007) 'Collaborative Governance in Theory and Practice', *Journal of Public Administration Research and Theory*, pp. 543–571.

Ariffin, R. N. R. and Zahari, R. K. (2013) 'The Challenges of Implementing Urban Transport Policy in the Klang Valley, Malaysia', *Procedia Environmental Sciences*. Elsevier B.V., 17,

pp. 469-477.

Aziz, R. N. A. R. and Azmi, A. (2017) 'Factor affecting gross domestic product (GDP) growth in Malaysia', *International Journal of Real Estate Studies*, 11(4), pp. 61–67.

Bailey, K., Harris, S. J. and Simpson, S. (2015) 'Stammering and the Social Model of Disability: Challenge and Opportunity', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 193, pp. 13–24.

Barnes, C. (2011) 'Understanding Disability and the importance of Design for All', *Journal of Acessibility and Design for All*, 1(CC), pp. 55–80.

Barnes, C. (2012) 'The social model of disability: valuable or irrelevant', in Watson, N., Roulstone, A., and Thomas, C. (eds) *Routledge Handbook of Disability Studies*. London: Routledge, pp. 12–29.

Barnes, C. and Mercer, G. (2004) 'Theorising and Researching Disability from a Social Model Perspective', in Barnes, C. and Mercer, G. (eds) *Implementing the Social Model of Disability: Theory and Research*. Leeds: The Disability Press, pp. 1–17.

Bashiti, A. and Abdul Rahim Asiah (2015) 'Physical Barriers Faced by People with Disabilities (PwDs) in Shopping Malls', *Procedia - Social and Behavioral Science*. The Author(s), 222, pp. 35–50.

Baxter, P. and Jack, S. (2008) 'Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers.', *The Qualitative Report*, 13(4), pp. 544–559.

Bernama (2020) 'Hanya dua kementerian ada kakitangan OKU lebih satu peratus', *Sinar Harian*.

Bichard, J. (2018) 'Inclusive Design: Towards Social Equity in the Built Environment', *Built Environment*, 44(1), pp. 5–8.

Bickenbach, J. E. (1999) 'Models of disablement, universalism and the ICIDH', *Social Sciences and Medicine*, 48, pp. 1173–1187.

Biyanwila, J. (2010) 'Poverty and Disability in the Global South', *Third World Quarterly*, 32(8), pp. 1537–1540.

Botticello, A. L., Rohrbach, T. and Cobbold, N. (2014) 'Disability and the built environment: an investigation of community and neighborhood land uses and participation for physically impaired adults', *Annals of Epidemiology*. Elsevier Inc, 24(7), pp. 545–550.

Brand, R. and Gaffikin, F. (2007) 'Collaborative planning in an uncollaborative world', *Planning Theory*, 282–313.

Brighouse, H. and Robeyns, I. (2010) 'Introduction: social primary goods and capabilities as metrics of justice', in Brighouse, H. and Robeyns, I. (eds) *Measuring Justice: Primary Goods and Capabilities*. Cambridge: Cambridge University Press, pp. 1–14.

Bringolf, J. (2008) 'Universal Design: Is it Accessible?', *Plurality and Diversity in Design*, 1(2), pp. 45–52.

Bromley, R. D., Matthews, D. L. and Thomas, C. J. (2007) 'City centre accessibility for wheelchair users: The consumer perspective and the planning implications', *Cities*, 24(3), pp. 229–241.

Brundtland, G. H. (1987) 'Our Common Future: Report of the World Commission on Environment and Development', *Medicine, Conflict and Survival*, 4(1), p. 300.

Bryman, A. (2008) Social research methods. Third. New York: Oxford University Press.

Carmona, M. et al. (2010) Public Places Urban Spaces. Second Edi. Oxford: Elsevier Ltd.

Carson, G. (2009) *The Social Model of Disability, Physiotherapy*. Norwich: The Stationery Office.

Casas, I. (2007) 'Social Exclusion and the Disabled: An Accessibility Approach', *The Professional Geographer*, 59(4), pp. 463–477.

Casserley, C. and Ormerod, M. (2003) 'The legal argument for inclusive design', in Clarkson, J. *et al.* (eds) *Inclusive design: design for the whole population*. London: Springer, pp. 142–154.

Charles, A. and Thomas, H. (2007) 'Deafness and disability - Forgotten components of environmental justice: Illustrated by the case of Local Agenda 21 in South Wales', *Local Environment*, 12(3), pp. 209–221.

Chiwandire, D. and Vincent, L. (2017) 'Wheelchair users, access and exclusion in South African higher education', *African Journal of Disability*, 6, pp. 1–9.

Clarke, P. et al. (2008) 'Mobility Disability and the Urban Built Environment', American Journal of Epidemiology, 168(5), pp. 506–513.

Clarke, P. J. *et al.* (2011) 'Participation among adults with disability: The role of the urban environment', *Social Science & Medicine*. Elsevier Ltd, 72(10), pp. 1674–1684.

Cobley, D. S. (2011) Towards Economic Empowerment for Disabled People: Exploring the Boundaries of the Social Model of Disability in Kenya and India. University of Birmingham.

Cohen, R. L. (1985) 'Procedural justice and participation', *Human Relations*, 38(7), pp. 643–663.

Creswell, J. W. (2007) Qualitative inquiry & research design: Choosing among five approaches. London: SAGE Publication.

Creswell, J. W. (2013) Qualitative inquiry and research design: choosing among five approaches. Third edit. London.

Creswell, J. W. (2014) Research design: qualitative, quantitative, and mixed methods approaches. Fourth. London: SAGE Publications.

Cuthill, M. (2010) 'Strengthening the "Social" in Sustainable Development: Developing a Conceptual Framework for Social Sustainability in a Rapid Urban Growth Region in Australia', Sustainable Development, 18(6), pp. 362–373.

Dahl, H. M., Stoltz, P. and Willig, R. (2004) 'Recognition, Redistribution and Representation in Capitalist Global Society: An Interview with Nancy Fraser', *Acta Sociologica*, 47(4), pp. 374–382.

Darcy, S. and Buhalis, D. (2011) 'Conceptualising Disability', in Buhalis, D. and Darcy, S. (eds) *Accessible Tourism; Concepts and Issues*. Bristol: Channel View Publications, pp. 21–45.

DBKL (2014) Urban Design Guidelines for Kuala Lumpur City Centre. Kuala Lumpur.

DBKL (2015) Manual rekabentuk bagi pembangunan di Wilayah Persekutuan Kuala Lumpur.

Dempsey, N. *et al.* (2011) 'The social dimension of sustainable development: Defining urban social sustainability', *Sustainable Development*, 19(5), pp. 289–300.

Department of Social Welfare Malaysia (2016a) *Majlis Kebangsaan Bagi OKU*. Available at: http://www.jkm.gov.my (Accessed: 17 October 2017).

Department of Social Welfare Malaysia (2016b) *Portal Rasmi Jabatan Kebajikan Masyarakat*. Available at: https://www.statistics.gov.my (Accessed: 31 August 2016).

Department of Social Welfare Malaysia (2016c) Senarai kemudahan dan keistimewaan bagi Orang Kurang Upaya. Kuala Lumpur: Jabatan Kebajikan Masyarakat. Available at: http://www.jkm.gov.my (Accessed: 30 August 2016).

Department of Social Welfare Malaysia (2020) *Portal Rasmi Jabatan Kebajikan Masyarakat*, *Jabatan Kebajikan Masyarakat Malaysia*. Available at: http://www.jkm.gov.my/jkm (Accessed: 17 January 2021).

Department of Standards Malaysia (2014a) 'MS 1184:2014 Universal Design and Accessibility in the Built Environment (Second Revision)'. Kuala Lumpur.

Department of Standards Malaysia (2014b) *Regulators - JSM Portal*. Available at: http://www.jsm.gov.my (Accessed: 29 December 2017).

Department of Standards Malaysia (2019) 'Price list of Malaysian Standard'. Department of Standards Malaysia.

Department of Standards Malaysia & Kuala Lumpur City Hall (2014) 'DBKL - Pihak Berkuasa Tempatan Pertama Yang Mengguna Malaysian Standard (MS) Dalam Pembinaan Persekitaran Bebas Halangan', 24 April.

Department of Statistics Malaysia (2017a) 'Anggaran Penduduk Semasa, Malaysia, 2016-2017'. Available at: https://www.dosm.gov.my.

Department of Statistics Malaysia (2017b) 'Population Quick Info'. Available at: http://pqi.stats.gov.my

Department of Statistics Malaysia (2018) 'Department of Statistics Malaysia Press Release Social Statistics Bulletin Publication, Malaysia, 2018', *Department of Statistics Malaysia*.

Dogar, A. D. (2007) 'Biopsychosocial Model Review', a.P.M.C, p. 4.

Economic Planning Unit (2015a) *Eleventh Malaysian Plan 2016-2020*, *Eleventh Malaysia Plan 2016-2020*. Kuala Lumpur: Percetakan Nasional Malaysia Berhad.

Economic Planning Unit (2015b) *Eleventh Malaysian Plan Executive Summary*. Kuala Lumpur.

Edirisingha, P. (2012) *Interpretivism and Positivism (Ontological and Epistemological Perspectives)*. Available at: https://prabash78.wordpress.com (Accessed: 5 September 2019).

Enidhi (2011) KL Tower, Menara Kuala Lumpur, Malaysia - eNidhi India. Available at: http://www.enidhi.net (Accessed: 3 January 2018).

Evans, J. and Jones, P. (2011) 'The walking interview: Methodology, mobility and place', *Applied Geography*. Elsevier Ltd, 31(2), pp. 849–858.

Fainstein, S. S. (2009) 'Spatial Justice and Planning', Spatial Justice, 1(2009), pp. 1–13.

Ferrari, L. *et al.* (2014) 'Improving the accessibility of urban transportation networks for people with disabilities', *Transportation Research Part C: Emerging Technologies*. Elsevier Ltd, 45, pp. 27–40.

Fincher, R. and Iveson, K. (2012) 'Justice and Injustice in the City', *Geographical Research*, 50(3), pp. 231–241.

Finkelstein, V. (1975) Union of the Physically Impaired Against Segregation.

Flyvbjerg, B. (2006) 'Five misunderstandings about case-study research', *Qualitative Inquiry*, 12(2), pp. 219–245.

Foster, L. (2013) Access to the Historic Environment. New York: Routledge.

Fraser, N. (2003) 'Social justice in an age of identity politics: Redistribution, recognition and participation', in Fraser, N. and Honneth, A. (eds) *Redistribution or Recognition?* London: Verso.

Friedner, M. (2015) 'New Disability Mobilities and Accessibilities in Urban India', *City & Society*, 27(1), pp. 9–29.

Frye, A. (2011) *Disabled and Older Persons and Sustainable Urban Mobility*. Available at: www.unhabitat.org/grhs/2013.

Gaete-Reyes, M. (2015) 'Citizenship and the embodied practice of wheelchair use', *Geoforum*. Elsevier Ltd, 64, pp. 351–361..

GaWC (2012) 'The World According to GaWC'. Available at: http://www.lboro.ac.uk/gawc/gawcworlds.html.

Gleeson, B. (2001) 'Disability and the Open City', Urban Studies, 38(2), pp. 251–265.

Goodall, B. (2010) Disability and Inclusive Access to the Built Environment, Inclusive Access for Higher Performing Buildings.

Google (2017) 'Google Map'. Available at: https://www.google.com.my

Greed, C. (2011) 'Planning for sustainable urban areas or everyday life and inclusion', *Proceedings of the ICE - Urban Design and Planning*, 164(2), pp. 107–119.

Grewal, I. et al. (2002) 'Disabled for life?' attitudes towards, and experiences of, disability in Britain. Norwich.

Grimshaw, J. M. et al. (2012) 'Disseminating and Implementing Guidelines', *Proc An Thorac Soc*, 9(5), pp. 298–303.

Gullick, J. M. (1994) *Old Kuala Lumpur, Images of Asia.* Kuala Lumpur: Oxford University Press.

Hanson, J. (2004) The inclusive city: delivering a more accessible urban environment through inclusive design. Available at: http://discovery.ucl.ac.uk/3351/.

Harnacke, C. (2013) 'Disability and Capability: Exploring the Usefulness of Martha Nussbaum's Capabilities Approach for the UN Disability Rights Convention', *Journal of Law, Medicine and Ethics*, 41(4), pp. 768–780.

Harun, S. N. (2011) 'Heritage building conservation in Malaysia: Experience and challenges', *Procedia Engineering*, 20, pp. 41–53.

Hashim, A. E. *et al.* (2012) 'Access and Accessibility Audit in Commercial Complex: Effectiveness in Respect to People with Disabilities (PWDs)', *Procedia - Social and Behavioral Sciences*, 50(July), pp. 452–461.

Häyry, M. and Vehmas, S. (2015) 'Disability as a test of justice in a globalising world', *Journal of Global Ethics*, 11(1), pp. 90–98.

Hazreena, H. (2006) 'Encouraging A' Barrier-free Built Environment' In A Malaysian University', *Journal of Design and the Built Environment*, pp. 33–39.

Healey, P. (2003) 'Collaborative planning in perspective', *Planning Theory*, 2(2), pp. 101–123.

Heritage (2018) *Bangunan Warisan Kebangsaan*. Available at: http://www.heritage.gov.my (Accessed: 11 October 2018).

Heylighen, A. and Bianchin, M. (2018) 'Building justice: How to overcome the inclusive design paradox?', *Built Environment*, 44(1), pp. 23–35.

Heylighen, A., Van der Linden, V. and Van Steenwinkel, I. (2017) 'Ten questions concerning inclusive design of the built environment', *Building and Environment*. Elsevier Ltd, 114, pp. 507–517.

Holmes-Siedle, J. (1996) *Barrier-free Design: A manual for building designers and managers*. Oxford: Butterworth-Heinemann Ltd.

Honneth, A. (2004) 'Recognition and Justice: Outline of a Plural Theory of Justice', *Acta Sociologica*, 47(4), pp. 351–364.

Hussein, H. and Yaacob, N. M. (2012) 'Development of Accessible Design in Malaysia', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 68, pp. 121–133.

Imrie, R. (1996) 'Equity, social justice, and planning for access and disabled people: An international perspective', *International Planning Studies*, 1(1), pp. 17–34.

Imrie, R. (2001) 'Barriered and Bounded Places and the Spatialities of Disability', *Urban Studies*, 38(2), pp. 231–237.

Imrie, R. (2012) 'Universalism, universal design and equitable access to the built environment', *Disability and rehabilitation*, 34(10), pp. 873–82.

Imrie, R. (2015) 'Doing disability differently: an alternative handbook on architecture, dis/ability and designing for everyday life', *Disability & Society*, 30(3), pp. 486–488.

Imrie, R. and Hall, P. (2001) 'An Exploration of Disability and the Development Process', *Urban Studies*, 38(2), pp. 333–350.

Imrie, R. and Kumar, M. (1998) 'Focusing on Disability and Access in the Built Environment', *Disability & Society*, 13(3), pp. 357–374.

Isa, H. M. et al. (2016) 'Provisions of Disabled Facilities at The Malaysian Public Transport Stations', MATEC Web of Conferences, 16.

Iwasaki, Y. and Mactavish, J. B. (2005) 'Ubiquitous Yet Unique: Perspectives of People With Disabilities on Stress', *Rehabilitation Counseling Bulletin*, 48(4), pp. 194–208.

Jabatan Rekabentuk Bandar dan Bangunan (2013) *Garis panduan butiran kemudahan akses bagi orang kurang upaya*. Kuala Lumpur: Dewan Bandaraya Kuala Lumpur.

Jamaludin, M., Ali, H. M. and Mohammad, E. (2010) 'Accessibility for person with disability in tourism', in Kozak, M. (ed.) *The 5th World Conference for Graduate Research in Tourism, Hospitality and Leisure*. Coppadocia.

Jamaludin, M. and Kadir, S. A. (2012) 'Accessibility in Buildings of Tourist Attraction: A case studies comparison', *Procedia - Social and Behavioral Sciences*, 35(December 2011), pp. 97–104.

Jamil, R. and Saidin, S. (2018) 'Employment of Persons with Disabilities (PWDs) in Malaysia: Moving Policy Rhetoric into Action', *Asian Journal of Management Cases*, 15, pp. 1S-16S.

Kadir, S. A. and Jamaludin, M. (2012a) 'Applicability of Malaysian Standards and Universal Design in Public Buildings in Putrajaya', *Procedia - Social and Behavioral Sciences*, 36 (June 2011), pp. 659–669.

Kadir, S. A. and Jamaludin, M. (2012b) 'Users' Satisfaction and Perception on Accessibility of Public Buildings in Putrajaya: Access Audit Study', *Procedia - Social and Behavioral Sciences*, 50(July), pp. 429–441.

Kadir, S. A. and Jamaludin, M. (2013) 'Universal Design as a Significant Component for Sustainable Life and Social Development', *Procedia - Social and Behavioral Sciences*, 85, pp. 179–190.

Kadir, S. A. and Jamaludin, M. (2018) 'The Significance of Staff Assistance in Accessibility of Public Buildings', *Asian Journal of Quality of Life*. e-IPH Ltd., 3(9), p. 175.

Kadir, S. A., Jamaludin, M. and Rahim, A. A. (2012) 'Building Managers' Perception in Regards to Accessibility and Universal Design Implementation in Public Buildings: Putrajaya case studies', *Procedia - Social and Behavioral Sciences*, 35(December 2011), pp. 129–136.

Kamarudin, H. (2007) The implementation of the SIRIM codes of practice for disabled persons by DBKL. Universiti Teknologi MARA.

Kamarudin, H. *et al.* (2012) 'The implementation of the Malaysian Standard Code of Practice on Access for Disabled Persons by local authority', *Procedia - Social and Behavioral Sciences*, 50(July), pp. 442–451.

Kamarudin, H. et al. (2014) 'Malaysian Scenario on Access and Facilities for Persons with Disabilities: A literature review', *MATEC Web of Conferences*, 15(September), p. 01019.

Kamarudin, H. *et al.* (2015) 'Malaysian Standard Conformity on Access and Facilities for Person with Disabilities in Public Bus Terminal Buildings', *Proceedings of the International Symposium on Research of Arts, Design and Humanities (ISRADH 2014)*, pp. 393–403.

Kastenholz, E., Eusébio, C. and Figueiredo, E. (2015) 'Contributions of tourism to social inclusion of persons with disability', *Disability & Society*, 30(8), pp. 1259–1281.

Kementerian Pembangunan Wanita Keluarga dan Masyarakat (2016) *Pelan tindakan OKU 2016-2022*. Kuala Lumpur.

Khalid, U. A. *et al.* (2014) 'User Perceptions of Rail Public Transport Services in Kuala Lumpur, Malaysia: KTM Komuter', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 153, pp. 566–573.

KLIA2 (no date a) *Bukit Badak KTM Komuter Station*. Available at: http://www.klia2.info/rail/ktm-komuter/stations/bukit-badak (Accessed: 1 December 2017).

KLIA2 (no date b) *KLIA Transit, fast commuter train between KL and KLIA*. Available at: https://www.klia2.info/rail/klia-transit/ (Accessed: 18 September 2017).

Kose, S. (1998) 'From Barrier-Free to Universal Design: An International Perspective', *Assistive Technology*, 10(1), pp. 44–50.

Kuala Lumpur City Hall (2017a) *KLCH History*. Kuala Lumpur. Available at: http://www.dbkl.gov.my (Accessed: 11 October 2017).

Kuala Lumpur City Hall (2017b) *Vision and mission*. Available at: http://www.dbkl.gov.my (Accessed: 17 October 2017).

Kuljiš, M. B. (2014) 'Justice for disabled persons', The Holistic Approach to Environment, 4,

pp. 153-170.

Kurniawan, H. (2011) Familiarity in Designing a Mosque: A Practice of Universal Design, UIA 2011 World Congress. Tokyo.

Kusenbach, M. (2003) 'Street Phenomenology: The go-along as ethnographic research tool', *Ethnography*, 4(3), pp. 455–485.

Kutesa, S. (2015) Transforming our world: The 2030 agenda for sustainable development.

Larson, D. (2014) 'Access to Justice for Persons with Disabilities: An Emerging Strategy', *Laws*, 3(2), pp. 220–238.

Lewis, C., McQuade, J. and Thomas, C. (2005) 'Measuring physical access barriers to services: "Snapshot" research in 4 town/city centres in Britain', *International Congress Series*, 1282, pp. 1034–1037.

Lid, I. M. and Solvang, P. K. (2016) '(Dis)ability and the experience of accessibility in the urban environment', *Alter.* Association ALTER, 10(2), pp. 181–194.

Llewellyn, A. and Hogan, K. (2000) 'The Use and Abuse of Models of Disability', *Disability* & *Society*, 15(1), pp. 157–165.

Low, L. (2016) Malaysia. Available at: http://www.malaysia.my (Accessed: 16 May 2018).

Mace, R. L., Hardie, G. J. and Place, J. P. (1991) *Accessible Environments: Towards Universal Design*. North Carolina: The Center for Universal Design.

Maidin, A. J. (2012) 'Legal Framework Regulating for Improving Accessibility to Built Environment for Disabled Persons in Malaysia', pp. 1–14.

Majlis Raja-raja (2010) *Pejabat Penyimpan Mohor Besar Raja-Raja - Pemilihan Yang di-Pertuan Agong*. Available at: http://www.majlisraja-raja.gov.my (Accessed: 20 December 2021).

Malaysian Government (2008) *Persons with Disabilities Act 2008*. Malaysia. Available at: http://www.jkm.gov.my/.

Manley, S. (2011) 'Creating an accessible public realm', in Preiser, W. F. E. and Smith, K. H. (eds) *Universal Design Handbook*. Second. New York: McGraw Hill.

Marcuse, P. (2010) 'Rights in Cities and the Right to the City', in Sugranyes, A. and Mathivet, C. (eds) *Cities for All: Proposals and Experiences towards the Right to the City*. Chile: Habitat International Coalition (HIC), pp. 87–98.

Marston, J. R. (2002) 'Towards an Accessible City: Empirical Measurement and Modeling of Access to Urban Opportunities for those with Vision Impairments, Using Remote Infrared Audible Signage', *University of California Transportation Center*.

McDonnell, M. J. and MacGregor-Fors, I. (2016) 'The ecological future of cities', *Urban Planet*, 352(6288), pp. 936–938.

McKenzie, S. (2004) 'Social sustainability: towards some definitions', *Working Paper Series*, (27), p. 31.

Menarakl (2016) KL Tower - Observation Deck. Available at: https://www.menarakl.com.my (Accessed: 20 June 2018).

Meyers, A. R. *et al.* (2002) 'Barriers, facilitators, and access for wheelchair users: substantive and methodologic lessons from a pilot study of environmental effects', *Social Science & Medicine*, 55(8), pp. 1435–1446.

Meyers, S. J. (2014) 'The Social Model of Disability Under the Shadow of the Revolution: Ex-combatants Negotiating Identity in Nicaragua', *Qualitative Sociology*, 37(4), pp. 403–424.

Mitra, S. (2006) 'The Capability Approach and Disability', *Journal of Disability Policy Studies*, 16(4), pp. 236–247.

Mobiliti (2014) Welcome to Persatuan Mobiliti Selangor dan Kuala Lumpur. Available at: http://www.mobiliti.org.my/transportservice.php.

Moceviciene, A. and Strods, G. (2015) 'Sustainability and empowerment in context of inclusion of disabled people', *Society. Integration*. *Education*, 3, pp. 173–183.

Mohamed, M. (1991) 'Perspektif Wawasan 2020', in Perspektif Wawasan 2020, pp. 21–22.

Mothiravally, V. *et al.* (2014) 'Attitude and Perception of Visually Impaired Travelers: A Case of Klang Valley, Malaysia', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 144, pp. 366–377.

Mowl, G. and Fuller, D. (2014) *Geographies of disability, Introducing Social Geographies*. London: Taylor & Francis.

Mygov (2019) Welfare institution for persons with disabilities. Available at: https://www.malaysia.gov.my (Accessed: 10 January 2021).

Myhoponhopoff (2018) *KL HOP ON HOP OFF*. Available at: https://www.myhoponhopoff.com/kl/ (Accessed: 1 May 2018).

Nag, N. S. (2018) 'Government, Governance and Good Governance', *Indian Journal of Public Administration*, pp. 122–130.

Van Nes, F. *et al.* (2010) 'Language differences in qualitative research: Is meaning lost in translation?', *European Journal of Ageing*, 7(4), pp. 313–316.

Neuman, W. L. (2003) Social research methods. Boston: Pearson Education.

Newton, R. *et al.* (2002) 'Moving from theory to practice in inclusive design', *CIB W84*, pp. 1–18.

Newton, R. et al. (2010) 'Increasing independence for older people through good street design', *Journal of Integrated Care*, 18(3).

Niya, M. D., Utaberta, N. and Maulan, S. (2015) 'Significance of the Application of Universal Design in Mosque Buildings in Malaysia', *Applied Mechanics and Materials*, 747, pp. 72–75.

North Carolina State University, T. C. for U. D. (1997) 'The Center for Universal Design - Universal Design Principles', the Principles of Universal Design.

Nussbaum, M. C. (2006) *Frontier of Justice*. Cambridge: The Belknap Press of Harvard University Press.

O'Neill, M. J. (1991) 'Effects of signage and floor plan configuration on wayfinding accuracy', *Environment and Behaviour*, 23(5), pp. 553–574.

OECD (no date) OECD. Available at: http://www.oecd.org/ (Accessed: 28 February 2021).

Oliver, M. (1986) 'Social Policy and Disability: Some Theoretical Issues', *Disability, Handicap & Society*, pp. 5–17.

Oliver, Mike (1990) 'The Individual and Social Models of Disability', in *Joint Workshop of the Living Options Group and the Research Unit of the Royal College of Physicians*, pp. 1–7.

Oliver, Michael (1990) The Politics of Disablement. London: Macmilan Education Ltd.

Oliver, M. (1997) 'Emancipitory research: realistic goal or impossible dream?', in Barnes, C. and Mercer, G. (eds) *Doing Disability Research*. Leeds: The Disability Press, pp. 15–31.

Oliver, M. (2004) 'If I had a Hammer: The Social Model in Action', in Swain, J. et al. (eds) *Disabling Barriers - Enabling Environments*. Second Edi. SAGE Publication, pp. 7–12.

Oliver, M. and Barnes, C. (2008) "Talking about us without us?". A response to Neil Crowther', *Disability & Society*, 23(4), pp. 397–399.

Omar, Z. et al. (2011) Manual Audit Akses 1Malaysia sebagai Garispanduan untuk Fasilitator Rekabentuk Sejagat. Edisi 1.

Ormerod, M. and Newton, R. (2006) 'Embracing diversity through the employment of disabled people: the missed opportunity?', in W. Gale, A. and Davidson, M. J. (eds) *Managing Diversity and Equality in Construction: Initiatives and Practice*. Oxon: Taylor & Francis, pp. 209–226.

Osman, M. M., Bachok, S. and Bakri, N. I. M. (2015) 'Social Regeneration through Physical Facilities Provided to the Vulnerable and Disadvantaged Groups', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 170, pp. 308–319.

Oxforddictionaries (2019) *Definition of resource*. Available at: https://www.google.com/search?q=Definition+of+resource&oq=Definition+of+resource&aq s=chrome..69i57j0l5.1729j0j7&sourceid=chrome&ie=UTF-8 (Accessed: 5 January 2019).

Peat, C. (2015) *Improving accessibility - Bus & Coach Buyer, www.busanndcoachbuyer.com.* Available at: http://www.busandcoachbuyer.com (Accessed: 5 January 2018).

Pemandu (2011) *Economic Transformation Programme Annual Report*. Available at: http://etp.pemandu.gov.my.

Power, A. (2013) 'Understanding the complex negotiations in fulfilling the right to independent living for disabled people', *Disability and Society*, 28(2), pp. 204–217.

Prasarana Malaysia Berhad (2017) *Products and customer service*. Available at: https://www.myrapid.com.my (Accessed: 30 October 2017).

Prime Minister's Department (2010) *Economic Planning Unit, Tenth Malaysian Plan (2011 - 2015*).

Rahim, A. *et al.* (2017) 'Malaysian plan of action for people with disabilities 2016-2022: Way forward', in *UIA 2017 Seoul Word Architects Congress*. Seoul, pp. 1–6.

Rahim, A. A. *et al.* (2014) 'Universal Design and Accessibility: Towards Sustainable Built Environment in Malaysia', in Caltenco, H. A., Hedvall, P.-O., and Larsson, A. (eds) *Proceedings of the International Conference on Universal Design, UD 2014 Lund, Sweden.* IOS Press.

Rahim, A. A. and Abdullah, F. (2009) 'Access audit on universal design: The case of Kota Kinabalu Water Front', *The International Journal of Interdisciplinary Social Sciences*, 4.

Rahim, A., Amirah, N. and Samad, A. (2010) 'Accessible Built Environment for the Elderly and Disabled in Malaysia: Hotels as Case Studies', *Journal of Construction in Developing Countries*, 15(2), pp. 1–21.

Rani, W. N. M. W. M. (2012) Modelling the Relationship between Urban Form and Social Sustainability in Malaysian Cities – Access to Local Services and Public Facilities. Hariot-Watt University.

Rawls, J. (1999) A Theory of Justice. Revised Ed. Oxford: Oxford University Press.

Rawls, J. (2003) *Justice as fairness: A restatement*. Massachusetts: The Belknap Press of Harvard University Press.

Razak, M. S. (2007) 'Sejarah OKU Tercipta', *Utusan Online*. Available at: http://ww1.utusan.com.my/utusan

Reeve, D. (2004) 'Psycho-emotional dimensions of disability and the social model', in Barnes, C. and Mercer, G. (eds) *Implementing the social model of disability: theory and research*. Leeds: The Disability Press, pp. 83–100.

Reeve, D. (2010) 'Negotiating psycho-emotional dimensions of disability and their influence on identity constructions', *Disability & Society*, 17, pp. 493–508.

Reeve, D. (2014) 'Psycho-emotional disablism and internalised oppression', in Swain, J. et al. (eds) *Disabling Barriers – Enabling Environments*. Third. London: Sage, pp. 92–98.

Repeva, A. and Adjidé, N. (2020) 'The challenge of inclusive cities', E3S Web of Conferences, 157, pp. 1–11.

Retief, M. and Letšosa, R. (2018) 'Models of disability: A brief overview', *HTS Teologiese Studies / Theological Studies*, 74(1), pp. 1–8.

Rimmer, J. H. *et al.* (2004) 'Physical activity participation among persons with disabilities: Barriers and facilitators', *American Journal of Preventive Medicine*, 26(5), pp. 419–425.

Robeyns, I. (2005) 'The Capability Approach: a theoretical survey', *Journal of Human Development*, 6(1), pp. 93–117.

Robeyns, I. (2006) 'The Capability Approach in Development', *The Journal of Political Philosophy*, 14(3), pp. 351–376.

Rosenberg, D. E. et al. (2013) 'Outdoor built environment barriers and facilitators to activity among midlife and older adults with mobility disabilities', *Gerontologist*, 53(2), pp. 268–279.

Roulstone, A. and Prideaux, S. (2009) 'Constructing reasonableness: Environmental access policy for disabled wheelchair users in four European Union countries', *Alter*, 3(4), pp. 360–377.

Rydin, Y. (2010) Governing for Sustainable Urban Development. London: Earthscan.

Saad, A. (2013) Exploratory study of accessibility to public bus transport by disabled people in Klang Valley. Universiti Utara Malaysia.

Salikha, A. (2016) 2018 Economies & Ranking of GDP Per Capita of Southeast Asian Countries.

Salkeld, D. R. F. (2015) Access to sustainable lifestyles: disability and environmental citizenship. University of Leeds.

Samad, N. A. A., Ja'afar, N. H. and Rahim, A. A. (2018) 'MS1184:2014 compliance of basic accessibility for persons with disabilities (PwDs) and elderly in traditional mosque at Melaka historical street', in *Conference of Regional Architecture and Built Environment 2018*, pp. 153–162.

Sawadsri, A. (2010) Accessibility and disability in the built environment: Negotiating the public realm in Thailand. Newcastle University.

Schwandt, T. A. (2000) 'Three epistemological stances for qualitative inquiry: interpretivism, hermeneutics, and social constructionism', in Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of qualitative research*. 2nd edn. California: SAGE Publications, pp. 189–213.

Sen, A. (1993) 'Capability and well-being', in Nussbaum, M. and Amartya, S. (eds) *The Quality of Life*. Oxford: Clarendon Press.

Sen, A. (2011) *The idea of justice*. Massachusetts: The Belknap Press of Harvard University Press.

Shakespeare, T. (2015) 'Human rights and disability', *Disability & Society*, 7599 (February), pp. 37–41.

Shakespeare, T. (2018) Disability the basics. Oxon: Routledge.

Shakespeare, T. and Watson, N. (2002) 'The social model of disability: an outdated ideology?', Research in Social Science and Disability, 2, pp. 9–28.

Shakespeare, T. and Watson, N. (2016) 'Beyond models: Understanding the complexity of disabled people's lives', in Scambler, G. and Scambler, S. (eds) *New Directions in the Sociology of Chronic and Disabling Conditions: Assaults on the Lifeworld*. London: Palgrave Macmillan, pp. 57–76.

Singh, P., Fook, C. Y. and Sidhu, G. K. (2009) *A comprehensive guide to writing a research proposal*. Batu Caves: Venton Publishing.

Smeltzer, S. C. (2007) 'Improving the health and wellness of persons with disabilities: A call to action too important for nursing to ignore', *Nursing Outlook*, 55(4), pp. 189-195.e2.

Smith, D. J. (2014) The challenge of creating sustainable development process for large scale urban regeneration projects: Exploring different experiences in major European cities. University of Birmingham.

SPAD (2013) Panduan Dasar Pelesenan.

SPAD (2017) *Taxi Circulars*. Available at: https://www.spad.gov.my/transport-operators/taxis/circulars (Accessed: 24 November 2017).

SPAD (no date) *Go KL*. Available at: https://www.gokl.com.my/main/about\_us/index.html (Accessed: 4 December 2017).

Spoden, C. (2017) Differentiating between policies, standards, procedures, and guidelines. Available at: https://frsecure.com/blog/differentiating-between-policies-standards-procedures-and-guidelines/ (Accessed: 18 September 2018).

Squires, A. (2009) 'Methodological challenges in cross-language qualitative research: A research review', *Int J Nurs Stud*, pp. 277–287.

Tellis, W. (1997) 'Introduction to case study', *The Qualitative Report*, 3(2), pp. 1–14.

Temple, B. and Young, A. (2004) 'Qualitative Research and Translation Dilemmas', *Qualitative Research*, 4(2), pp. 161–178.

The Board of Architects Malaysia (2008) 'Certificate of Completion and Compliance', p. 3. Available at: http://www.lam.gov.my/download/1 2008.pdf.

Thomas, C. (2004) 'How is disability understood? An examination of sociological approaches', *Disability and Society*, 19(6), pp. 569–583.

Thomas, C. (2012) 'Theorising disability and chronic illness: Where next for perspectives in medical sociology?', *Social Theory and Health*, 10(3), pp. 209–228.

Thomas, C. (2016) 'Medical sociology and disability theory', in Scambler, G. and Scambler, S. (eds) *New Directions in the Sociology of Chronic and Disabling Conditions: Assaults on the Lifeworld*. London: Palgrave Macmillan, pp. 37–56.

Tiun, L. T. and Khoo, S. L. (2013) 'Challenges Faced by Malaysians with Disabilities in the

World of Employment', 24(1), pp. 6-21.

Tobi, S. U. M. (2014) *Qualitative research & NVIVO 10 exploration*. Kuala Lumpur: Aras Publisher.

Transport for London (2018) Avoiding stairs Tube guide. London.

Transportforall (2018) London Underground > Transport for all > Accessible Transport in London.

Turmusani, M. (2004) 'An eclectic approach to disability research: a majority world perspective', *Asia Pacific Disability Rehabilitation Journal*, 15, pp. 3–12.

Uber Technologies Inc. (2017) *Drive or Ride with Uber in Kuala Lumpur | Uber.* Available at: https://www.uber.com/en-GB/cities/kuala-lumpur/ (Accessed: 30 December 2017).

UNESCO (2017) *Concept of governance*. Available at: http://www.ibe.unesco.org/en/geqaf/technical-notes/concept-governance (Accessed: 12 July 2018).

UN (2006) Convention on the Rights of Persons with Disabilities and Optional Protocol, Treaty Series. doi: UN Doc. A/61/611 (2006).

UN (2007) *Accessibility: A guiding principle of the Convention*. Available at: http://www.un.org/esa/socdev/enable/disacc.htm (Accessed: 14 October 2015).

Vehmas, S. and Watson, N. (2013) 'Moral wrongs, disadvantages, and disability: a critique of critical disability studies', *Disability & Society*, 7599(November), pp. 1–13.

Vilar, E., Rebelo, F. and Noriega, P. (2014) 'Indoor human wayfinding performance using vertical and horizontal signage in virtual reality', *Human Factors and Ergonomics in Manufacturing & Service Industries*, 24(6), pp. 601–615.

Wakiya, T. (2011) Overcoming the barriers towards inclusive design of tourism. University of Surrey.

Ward, M. and Jacobs, K. (2016) "Policies that Fail – Words that Succeed": The Politics of Accessible Housing in Australia, *Australian Journal of Public Administration*, 76(1), pp. 80–92.

Watson, N. (2002) 'Well, I Know this is Going to Sound Very Strange to You, but I Don't See Myself as a Disabled Person: Identity and disability', *Disability & Society*, 17(5), pp. 509–527.

Watt, D. (2007) Building pathology: principles and practice. Second Edi. London: Wiley-Blackwell.

Wee, S. a/p S. & S. T. (2008) 'Kajian Penyediaan Fasiliti Orang Kurang Upaya (OKU) di Institusi Kerajaan di Nusajaya, Johor Bahru', *Universiti Tun Hussein Onn Malaysia*, pp. 1–11.

Weingaertner, C. and Moberg, A. (2014) 'Exploring social sustainability: Learning from

perspectives on urban development and companies and products', *Sustainable Development*, 22(2), pp. 122–133.

WHO and World Bank (2011) World Report on Disability.

Wilson, J. (2004) 'Justice and disability', *European Journal of Special Needs Education*, 19 (1) (February), pp. 99–106.

Wonderfulmalaysia (2017) Transportation within Kuala Lumpur.

World Health Organization (1980) *International Classification of Impairments, Disabilities, and Handicaps.* 

World Health Organization (2002) 'Towards a Common Language for Functioning , Disability and Health ICF', *International Classification*, 1149, pp. 1–22.

Yaacob, N. M. (2010) 'An Overview of Policies on Accessibility and Universal Design', in *Embracing Diversity and Creating Disability-Sensitive Communities*. Kuching: Universiti Malaysia Sarawak.

Yigitcanlar, T. and Teriman, S. (2015) 'Rethinking sustainable urban development: towards an integrated planning and development process', *International Journal of Environmental Science and Technology*, 12(1), pp. 341–352.

Yiing, C. F., Yaacob, N. M. and Hussein, H. (2013) 'Achieving Sustainable Development: Accessibility of Green Buildings in Malaysia', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 101, pp. 120–129.

Yin, R. K. (2003) *Applications of a case study research*. Second. London: SAGE Publications.

Yusof, M. and Jones, D. (2014) 'Universal Design Practice in Malaysia: Architect 's Perceptions of its Terminology', in *Universal Design 2014: Three days of creativity and diversity*.

Zahari, N. F. *et al.* (2018) 'Wheelchair traveller's accessibility in National Heritage building: the discovery via go-along interview method', in *Conference of Regional Architecture and Built Environment 2018*, pp. 76–84.

Zajadacz, A. (2015) 'Evolution of models of disability as a basis for further policy changes in accessible tourism', *Journal of Tourism Futures*, 1(3), pp. 189–202.

Zhuang, K. (2016) 'Inclusion in Singapore: a social model analysis of disability policy', *Disability & Society*, 31(5), pp. 622–640.

### **APPENDICES**

### INTERVIEW SCHEDULE SECTION A

## REGULATORY/ENFORCEMENT AUTHORITIES ASSOCIATED WITH PHYSICAL ACCESS FOR DISABLED PEOPLE (PLANNING AND URBAN DESIGN/PUBLIC TRANSPORTATION /ARCHITECTURAL DESIGN)

#### **PERSONAL CONTEXT**

- Educational background
- Role in the institution
- Role in ensuring physical access for disabled people to the city centre

#### **AWARENESS AND PERCEPTION**

Personal awareness of user with disability in approving planning/building plan/facilities To what extent action taken for personally experiencing barrier in physical access? Perception on:

- the current physical access provided in/to Kuala Lumpur city centre for disabled people inclusion in society
- the importance of having physical access for disabled inclusion to the city centre

#### REGULATION/ENFORCEMENT

- To what extent:
  - the institution/department/unit regulate/enforce physical access for disabled people to the city centre
  - universal design/accessible design for disabled people being imposed to the providers/implementers
  - physical barriers for accessibility in the built environment are enforced to be removed
  - complaints related to physical access for disabled people (if any) are catered/handled to rectify the condition
  - action taken to implementers for not providing physical access for disabled people
- Staff technical knowledge/training/competency in universal design/accessible design for disabled people (regulation/enforcement)
- Response from implementers/service providers related to regulation imposed for disabled people access
- Regulatory/enforcement strength, weakness and challenges in facilitating physical access for disabled people

#### **AUTHORITY**

- Actors in authority body that determine the success of physical access for disabled people inclusion to the city centre
- Institution/authority needs to be improved in order to achieve a more accessible/inclusive built environment for disabled people

#### **INCLUSION**

- To what extend:
  - participation/voices from disabled people are taken into account in disabled people access regulation/enforcement process
- Factors affecting the development of physical access for the inclusion of disabled people in society
- Recommendation for inclusive built environment for disabled people

#### **SECTION B**

### IMPLEMENTERS/SERVICE PROVIDERS ASSOCIATED WITH PHYSICAL ACCESS FOR DISABLED PEOPLE

- IMPLEMENTERS IN LOCAL AUTHORITY ARCHITECTS, ENGINEERS, PLANNERS AND LANDSCAPE ARCHITECTS
- CONTRACTORS
- TRANSPORT OPERATORS
- REPRESENTATIVES OF PROFESSIONAL BODIES

#### PERSONAL CONTEXT

- Educational background
- Role in planning/design for public space/building/facilities

#### **AWARENESS AND PERCEPTION**

- Personal awareness of user with disability in planning/designing public space/building/facilities
- Implementation of universal/accessible design without regulatory requirement from the local authority
- Perception for having to include access for disabled people in planning/design (regulatory requirement)
- To what extent action taken for personally experiencing barrier in physical access?

#### **IMPLEMENTATION**

- To what extent:
  - · regulatory requirement for disabled people access being conformed
  - physical access for disabled people being implemented on site
  - measures taken by the department/professional bodies and members of professional bodies for granting physical access for disabled people
  - rectification undertaken for physical barriers founded (self-noticed or instructed)
- Staff/professional bodies/members technical knowledge/training/competency in universal design/accessible design for disabled people
- Implementation challenges encountered in providing disabled people access in planning/design (e.g. design brief, site constraint, budget etc.)
- Strength and weakness encountered in implementing physical access for disabled people
- Efficiency of the implementation of universal design/accessible design for disabled people

#### **INCLUSION**

- To what extent:
  - equity and social justice by design being implemented
  - participation/voices from disabled people are taken into account in planning/design
- Factors affecting the development of physical access for the inclusion of disabled people in society
- Recommendation for inclusive built environment for disabled people

#### **SECTION C**

### COLLABORATORS/OTHER STAKEHOLDERS ASSOCIATED WITH PHYSICAL ACCESS FOR DISABLED PEOPLE

#### PERSONAL CONTEXT

- Educational background
- Role in promoting physical access for disabled people

#### AWARENESS AND PERCEPTION

- Perception on:
  - universal design/accessible design for disabled people being enforced/ implemented by local authority and service providers
  - the importance of having physical access for disabled inclusion to the city centre
- To what extent action taken for personally experiencing barrier in physical access?

#### **COLLABORATION EXPERIENCE**

- To what extent:
  - · the institution helps in promoting physical access for disabled people
  - views from the institution are considered/accepted in promoting physical access for disabled people
- Feedback from collaborative body and the end users (disabled people) related to institutional effort in promoting physical access for disabled people
- Physical access before collaboration with regulatory/enforcement body or implementers/service providers
- Outcomes of physical access after collaboration
- Actors/authority body determine the success of physical access for disabled people inclusion to the city centre
- Institution/body needs to be improved in order to achieve a more accessible/inclusive built environment

#### **INCLUSION**

- Assess on disabled people involvement in promoting physical access for inclusion
- Factors affecting the development of physical access for the inclusion of disabled people in society
- Recommendation for inclusive built environment for disabled people

#### **SECTION D**

#### REPRESENTATIVES OF DISABLED PEOPLE

#### **ENGAGEMENT**

- Role in promoting physical access for disabled people
- Response from collaborative body related to participants' participation
- Physical access before collaboration with regulatory/enforcement body or implementers/service providers
- · Outcomes of physical access after collaboration

#### **EXPERIENCE AND PERCEPTION**

- The importance of having physical access to the city centre
- Physical access experienced (urban design/public transportation/architectural design)
- Perception on:
  - the provision of physical access to the city centre by regulatory/enforcement body
  - universal design/accessible design implemented by service providers
- Effectiveness of the current physical access for disabled people to the city centre

#### **ACCESSIBILITY**

- The most accessible public realm in Kuala Lumpur city centre
- Accessible criteria of the area chosen
- Accessible criteria for a journey to city centre

#### **INCLUSION**

- To what extent:
  - opportunity given for disabled people to participate in planning/design process in providing physical access
  - disabled people voices being heard in defending the rights for inclusive access in the built environment
  - accessibility to the city centre promote disabled people to live equally in society
  - inaccessibility contributes to the exclusion and marginalisation of disabled people in urban environments that could lead to poverty, deprivation and exclusion
  - access to the city centre empowers disabled people life
- Disabled people awareness on rights to access public places

#### PHYSICAL BARRIERS

- Common physical barriers encountered by disabled people as the end user of the physical access provided to the city centre in
  - Urban design (pedestrian environment)
  - Transportation
  - Architectural design
- Way forward in the enhancement of physical access for disabled people

#### **SECTION E**

### WALKING INTERVIEW DISABLED PEOPLE AS THE END USER OF PHYSICAL ACCESS TO THE CITY CENTRE

#### **PART A (IN-DEPTH INTERVIEW)**

#### SIGNIFICANCE OF CITY CENTRE

- Main reason for travelling to city centre
- The importance of the city centre in life

#### **EXPERIENCE AND PERCEPTION**

- Most commonly used transport to the city centre
- Physical access experienced (urban design/ transportation/architectural design)
- Barriers encountered in:
  - Urban design (pedestrian environment)
  - Transportation
  - Architectural design
- Complaint made regarding barriers in physical access
- Response given from complaint
- Improvement expected
- Effectiveness of the current physical access for disabled people to the city centre
- Improvement noticed from past experience

#### **JUSTICE**

- Awareness on rights to access public places
- Accessibility issue being discussed by authority/service providers
- Inaccessible environment feelings
- To what extent does the current physical access to the city centre promote:
  - freedom of choice
  - · being able to have good health
  - move freely
  - pleasurable experience
  - being able to have attachment to space/place/nature
  - enjoy recreational activities
  - being able to work
  - empower/disempower life

#### PART B (GO-ALONG METHOD)

After the in-depth interview session, participant will lead for a go-along interview method. The go-along method enables researcher for observing, exploring and subsequently improving understanding of disabled people experience to the city centre through a journey from participant's residence by using their usual mode of transportation.

Conversation related to participant response from in-depth interview conducted prior the go-along method might include:

- participant experience sharing
- further explanation needed based on researcher observation
- evidences of interview responses

#### PARTICIPANT INFORMATION SHEET

# (Regulators/Implementers/Collaborators) Study Title: Physical Access for Disabled People's Inclusion in Kuala Lumpur City Centre

You are invited to take part in this research study by Hikmah Kamarudin, Researcher in Human Geography at the University of Birmingham, under the supervision of Dr. Rosie Day and Dr. Lauren Andres. The purpose of this research is to explore various stakeholders' perspectives on the provision of physical access for disabled people that affects the inclusion of disabled people in society, particularly in Kuala Lumpur city centre. The research involves in-depth interviews with professionals working in related areas and with disabled people as the end users.

You have been identified as one of the professionals working in a related field, involved in facilitating/promoting physical access for disabled people and the researcher is interested to obtain your perspectives regarding physical access for disabled people's inclusion in Kuala Lumpur city centre. Your participation in this project will add valuable insight to the research and will be greatly appreciated but is entirely voluntary.

If you decide to take part, you will be interviewed, in your office or other suitable place convenient for you, and the interview will last for about 60-75 minutes. You don't have to answer any questions that you don't want to answer. If you consent, the interview will be recorded in order to fully capture the information. The information gathered will be used in the researcher's doctoral thesis and may also be included in other academic publications, but you will not be named. Quotations from your interview can be used in future publications without your real name being given. In some cases, it may be possible that you will be indirectly identifiable from the nature of your job and the information you give. If this is a concern, please let the researcher know.

If after the interview you change your mind and don't want to take part in the study, you can let the researcher know up to 3 months after the completion of the interview. You can ask for part or all of the information you gave to be removed from the research and destroyed. If more than 3 months have passed since the interview, it may not be possible to remove your data from the study.

All data gathered, will be held securely and anonymously for ten years following the study, in line with the University of Birmingham's regulations. The transcripts of the interview and personal information about the participants will never be disclosed to a third party without the participant's express written permission to do so. Please feel free to ask any questions you may have about the study or about your participation, either before or after the interview takes place.

Researcher:	Lead Supervisor:	
Hikmah Kamarudin	Dr. Rosie Day	
School of Geography, Earth & Environmental	Senior Lecturer in Environment and Society	
Sciences	Email:	
Email:	Telephone:	
Mobile phone/SMS:		

#### PARTICIPANT INFORMATION SHEET

# (Disabled People Representatives) Study Title: Physical Access for Disabled People's Inclusion in Kuala Lumpur City Centre

You are invited to take part in this research study by Hikmah Kamarudin, Researcher in Human Geography at the University of Birmingham, under the supervision of Dr. Rosie Day and Dr. Lauren Andres. The purpose of this research is to explore various stakeholders' perspectives on the provision of physical access for disabled people that affects the inclusion of disabled people in society, particularly in Kuala Lumpur city centre. The research involves in-depth interviews with the professionals and disabled people as the end users.

You have been asked to take part because you have been identified as one of the representatives of disabled people and the researcher is interested to obtain your perspectives regarding physical access for disabled people inclusion to the city centre. Your participation in this project will add valuable insight to the research and greatly appreciated but is entirely voluntary.

If you decide to take part, you will be interviewed, if preferable, in your office that will last for about 60-75 minutes. You don't have to answer any questions that you don't want to answer. The interview will be recorded and transcribed verbatim. The information gathered including photographs will be used in researcher's doctoral thesis and may also be included in other academic publications, but you will not be identifiable at all. Quotations from your interview can be used in future publications without your real name being given.

If you change your mind and don't want to take part in the study, you can let the researcher know up to 3 months after the completion of the task, for the recordings and transcripts to be excluded from the project and all copies destroyed. If more than 3 months have passed since the interview, it may not be possible to remove your data from the study.

All data gathered, will be held securely and anonymously for ten years following the study, in line with the University of Birmingham's regulations. The transcripts of the interview and personal information about the participants will never be disclosed to a third party without the participant's express written permission to do so.

Please feel free to ask any questions you may have about the study or about your participation, either before or after the interview takes place.

Researcher:	Lead Supervisor:
Hikmah Kamarudin	Dr. Rosie Day
School of Geography, Earth & Environmental	Senior Lecturer in Environment and Society
Sciences	Email:
Email:	Telephone:
Mobile phone/SMS:	

#### PARTICIPANT INFORMATION SHEET

(Go-along Interviews)
Study Title: Physical Access for Disabled People's Inclusion in
Kuala Lumpur City Centre

This research study is conducted by Hikmah Kamarudin, Researcher in Human Geography at the University of Birmingham, under the supervision of Dr. Rosie Day and Dr. Lauren Andres. The purpose of this research is to explore various stakeholders' perspectives on the provision of physical access for disabled people that affects the inclusion of disabled people in society, particularly in Kuala Lumpur city centre. The research involves in-depth interviews with the professionals and goalong interviews with disabled people as the end users. People with mobility difficulties aged 18 and above are eligible to take part in the go-along interview.

We would like to invite you to take part in a go-along interview. A go-along interview involves you as the participant and the researcher going on a journey together to and around Kuala Lumpur City Centre. This will include transportation by your usual mode, and getting around in the pedestrian environment. The researcher will meet you at your home or convenient nearby place, and you will lead the journey. If you need another person as support, that can be arranged. The duration of the go-along interview is flexible and will depend on the travelling time to the city centre and break taken during the journey. During the trip, the researcher will talk to you about your experiences of moving around in the environment and any difficulties you find. There will also be some conversation before the journey starts and after it is completed. The researcher will also make some notes and take some photographs with your permission. You don't need to be in the photographs if you prefer not, and you don't have to answer any questions that you don't want to. We would like to record the interview to make sure all the information is captured. The information gathered will be used in the researcher's doctoral thesis and may also be included in other academic publications, but you will not be identifiable at all. Quotations from your interview can be used in future publications without your real name being given.

Your participation in this project will add valuable insights to the research and greatly appreciated but is entirely voluntary. If you don't want to take part, that is fine and nothing further will happen. For your time and effort taking part in this study you will receive a gift of RM70. Transport costs for the interview journey to and from the city centre and food and drink taken during the trip will also be covered by the researcher. If you change your mind and don't want to take part in the study, you can let the researcher know up to 3 months after the completion of the task, for the recordings, photographs and transcripts to be excluded from the project and all copies destroyed. If more than 3 months have passed since the interview, it may not be possible to remove your data from the study.

All data gathered, will be held securely and anonymously for ten years following the study, in line with the University of Birmingham's regulations. The transcripts of the interview and personal information about the participants will never be disclosed to anyone else without your written permission to do so. Please feel free to ask any questions you may have about the study or about your participation, either before or after the interview takes place.

Researcher:	Lead Supervisor:
Hikmah Kamarudin	Dr. Rosie Day
School of Geography, Earth & Environmental	Senior Lecturer in Environment and Society
Sciences	Email:
Mobile phone/SMS:	Telephone:

#### PARTICIPANT CONSENT FORM

#### Study Title: Physical Access for Disabled People's Inclusion to the City Centre

After reading the information sheet and asking any questions that you have, please tick each of the statements that you agree to. If there are any that you don't want to agree to, please do not tick then but let the researcher know.

I agree to take part in this study.	•••••
I agree to be recorded.	
• I agree that quotations from my interview can be used in future publications without my name being given.	
• I agree that photographs taken during my interview can be used in research outputs on the basis that I will not be identifiable (face blurred).	
Name	
Signature	
Date	

#### **APPENDIX 4**

### **Example of coding frame**

No	Code	Example	Category
1.	Transportation barriers	Wide gap between the train and platform	
2.	Building/architectural barriers	Ramp too steep	
3.	Urban design barriers	Disjointed facilities from one building/place to another	
4.	Overcome strategies	Strategy to overcome or avoid barriers	
5.	Emotion/feelings	Feeling unsafe, frustrated, angry etc.	
6.	Reasons for visiting the city centre	Reason and frequency of visit	
7.	Best practice/positive features	Physical support/facilitators e.g. lift, escalator, gentle gradient ramp	Accessibility
8.	Implementation	Facilities not according to standards	
9.	Regulation	Person with Disabilities Act has no claws	
10.	Enforcement	No penalty for not providing access	
11.	Effectiveness of physical access	Many places are still not easily accessed	
12.	Satisfaction of the current access	Poor access experienced	
13.	Past experience in KL	No low floor bus in the '90s	]
14.	Past experience in other places	Sharing the past e.g. in school days /childhood	
15.	Comparison between transport modes	Comparison of taxi and uber service	]
16.	Future expectations	The improvement of the physical access	1

#### Provision of by-law 34A of the Uniform Building By-Law 1991

#### STREET, DRAINAGE AND BUILDING ACT 1974

#### UNIFORM BUILDING (AMENDMENT) BYLAWS 1991

In exercise of the powers conferred by section 133 of the Street, Drainage and Building Act 1974, the State. Authority Makes the following By-laws:

- These By-laws may be cited as the Uniform Building (Amendment), By-laws 1991.
- By-law 2 of the Uniform Building By-laws 1984 which in this Bylaws is referred to as "the principal By-laws" is amended by inserting immediately after interpretation "detached building" the following interpretation.
  - "disabled persons" means people; with a physical, hearing or sight impairment which affects their mobility or their use of buildings as referred to under by-law 34A;".
- The principal By-laws is amended by inserting immediately after bylaw 34, the following new by-law 34A:
  - 34A (1)Any building or part thereof to which this by-law applies
    - (a) be provided with access to enable disabled persons to get into, out of and within the: building except for any part of the building for which access is provided wholly or mainly for the inspection, maintenance or repair of the building, its services or fixed plant or machinery; and
    - (b)be designed with facilities for used by disabled persons.
    - (2)The requirements of this by-law shall be deemed to be satisfied by compliance with Malaysian Standard MS 1184 and MS 1183.

- (3)Buildings to which this by-law applies and which on .the date of commencement of this by-law have been erected, are being crected or have not been erected but plans have been submitted and approved shall be modified or altered to comply with this by-laws within 3 years from the date of commencement of this by-law.
- (4)Notwithstanding paragraph (3) the local authority may where it is satisfied that it is justifiable to do so-
  - (a) allow an extension or further extensions of the period within which the requirements of this by-law are to be complied with: or
  - (b)allow, variations, deviations, or exemptions as it may specify from any provisions of: this by-law.
- (5)Any persons aggrieved by the decision of the local authority under paragraph (4) may within 30 days of the receipt of the decision appeal in writing to the State Authority whose decisions shall be final.
- (6)The requirements of this by-law shall apply to any of the following buildings or any part thereof —
  - (a) offices, banks, post offices, shops, department stores, supermarkets and other administrative anti-commercial buildings, except shop-houses existing, at the commencement of this by-law;
  - (b)rail, road, sea ad air travel buildings and associated concourses, car parking, buildings and factories;
  - (c)hospitals, medical centers, clinic, and other health and welfare buildings;
  - (d)restaurants, concert halls, theatres, cinemas, conference buildings, community buildings, swimming pools, sports buildings and other refreshment, entertainment and recreation buildings;
  - (e)religious buildings;
  - (f) schools, colleges, universities, zoos, museums, art galleries, libraries, exhibition buildings and other educational, cultural and scientific buildings; and
  - (g)hostels, hotels and other residential buildings other than single family private dwelling houses.

#### **APPENDIX 6**

### **Examples of physical barriers**

