UNIVERSITI PUTRA MALAYSIA

TOURIST ROUTE CHOICE BEHAVIOR AND THE WALKABILITY OF HISTORIC AREAS IN KUALA LUMPUR CITY CENTER

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FRSB 2016 9

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By

ZEINAB MOLLAZADEH

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirement for the Degree of Doctor of Philosophy

July 2016

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I dedicate this thesis to my beloved mother and father,

also my sweetheart siblings,

for their constant support and unconditional love

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

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July 2016

Chairman : Norsidah Ujang, PhD
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In Asian cities, ability to walk (walkability) has depreciated because of a sharp increase in usage of the motorized vehicle. These days in urban design studies, walking and walkability interweaved with debates on the quality of urban spaces, urban life and urban tourism. In cities with a high level of walkability, individuals could reach their destination easily, while they could enjoy their walking experience. Following that, urban tourism offered one of the prominent concerns of urban design in recent decade. For visitors to experience a city, walkability could act as a catalyst, which provides them with a better image of the city. In the context of Kuala Lumpur as a premier city of Malaysia, it is crucial to make improvement in the condition of the city to create "A World-Class City". Regard to Kuala Lumpur Structure Plan 2020, it is a necessity to investigate the quality of tourists' activities at the micro-level that covers the state of pedestrian experience, which is affected by quality of visual and configurational elements in the tourist places. It is demanding to concern about walkability issues to create a more conductive environment to movement pattern, purposes and needs of visitors.

In this regard, to ameliorate the condition of existing route, there is a need to determine visual and configurational attributes of the route and pedestrian movement pattern, along with visitors' preference for choosing a particular route. Investigation on the effect of route attributes on route choice of pedestrian will illuminate how to provide visitors with walkable routes. The goal of this study is to improve the walkability of tourist areas in the city center of Kuala Lumpur through identification of route choice behavior of visitors. Following aspects were considered as major concerns of the research to answer the research question: Spatial movement of the visitors, visitors' preferences, visual and configurational attributes of the routes.

Totally 330 valid questionnaires gathered which determined tourist preferences and their spatial movement, along with their socio-demographic and trip characteristic. Through usage of audit instrument on urban design quality, visual attributes of the routes were measured, while configurational attributes of the route measured through Space Syntax. Findings of the study suggested that while both visual attribute (imageability and transparency) and configurational attributes (local integration) were

influential attributes for choosing a route; for repeated visitors, the effectiveness of the local integration was increased. It is expected that findings of the study pioneer urban designers with an evidence-based method for better planning and designing of pedestrian routes, which cater for needs and experience of visitors to improve the walkability of tourist places.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

TINGKAHLAKU PILIHAN LALUAN PELANCONG DAN *WALKABILITY* KAWASAN BERSEJARAH DI PUSAT BANDAR KUALA LUMPUR

Oleh

ZEINAB MOLLAZADEH

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Di bandar Asia, keupayaan untuk berjalan kaki *(walkability)* tidak dititiberatkan kerana peningkatan mendadak dalam penggunaan kenderaan bermotor. Kini, dalam kajian reka bentuk bandar, berjalan kaki dan *walkability* saling berkaitan dalam perbahasan kualiti ruang bandar, kehidupan bandar dan pelancongan bandar. Di dalam bandar yang mempunyai tahap *walkability* yang tinggi, seseorang individu boleh sampai ke destinasi mereka dengan mudah, dalam masa yang sama, mereka dapat menikmati pengalaman perjalanan berjalan kaki. Berikutan itu, sejak kebelakangan ini, pelancongan bandar diberi keutamaan dalam reka bentuk bandar. Bagi pengunjung yang ingin mengalami bandar, *walkability* boleh bertindak sebagai pemangkin yang memberi imej bandar yang baik kepada mereka. Dalam konteks Kuala Lumpur sebagai bandar raya terulung di Malaysia, penambahbaikan keadaan bandar untuk mewujudkan "Sebuah Bandar Raya Bertaraf Dunia " adalah sangat penting. Merujuk kepada Pelan Struktur Kuala Lumpur 2020, adalah menjadi satu keperluan untuk mengkaji kualiti aktiviti pelancong di peringkat mikro yang meliputi keadaan pengalaman pejalan kaki, yang dipengaruhi oleh kualiti elemen visual dan *configurational* di tempat pelancongan. Selain itu, ia juga menuntut untuk menekankan isu *walkability* untuk menjadikan persekitaran yang dibina lebih kondusif untuk corak pergerakan, tujuan dan keperluan pengunjung.

Dalam hal ini, untuk memperbaiki keadaan jalan yang sedia ada, terdapat keperluan untuk menentukan atribut visual dan *configurational* jalan dan corak pergerakan pejalan kaki serta pilihan utama pengunjung untuk memilih jalan tertentu. Kajian kesan atribut jalan kepada pilihan jalan pejalan kaki akan menerangkan bagaimana untuk menyediakan laluan berjalan kaki kepada pengunjung, matlamat utama kajian ini adalah untuk meningkatkan *walkability* kawasan pelancongan di pusat bandar Kuala Lumpur dengan mengenal pasti tingkah laku pengunjung dalam pemilihan jalan. Berikut adalah aspek yang diberi penekanan utama dalam kajian untuk menjawab persoalan kajian iaitu: pergerakan *spatial* pengunjung, pilihan utama pengunjung, sifat visual dan *configurational* jalan.

Sebanyak 330 borang kaji selidik yang sah dikumpulkan untuk menentukan pilihan utama pengunjung dan pergerakan *spatial* mereka, bersama-sama dengan ciri sosio-demografi dan ciri perjalanan mereka. Pengukuran atribut visual laluan dijalankan

menggunakan instrumen audit kualiti reka bentuk bandar, manakala pengukuran sifat configurational jalan adalah menggunakan perisian *Space Syntax*. Hasil dapatan kajian menyarankan, di mana kedua-dua sifat visual (*imageability* dan *transparency*) serta sifat configurational (*local integration*) adalah atribut paling mempengaruhi pemilihan jalan, keberkesanan *local integration* meningkat bagi pengunjung berulang. Adalah dijangkakan bahawa dapatan kajian akan merintis pereka bandar dengan berdasarkan bukti untuk merancang dan merekabentuk laluan pejalan kaki yang lebih baik, yang memenuhi keperluan dan pengalaman pengunjung untuk meningkatkan *walkability* tempat pelancongan.

ACKNOWLEDGEMENTS

First and above all, I praise God, the almighty for providing me this opportunity and granting me the capability to proceed successfully.

While a completed dissertation bears the single name of the student, the process that leads to its completion is always accomplished in combination with the dedicated work of other people. I would therefore, like to offer my sincere thanks to them. I would like to express my sincere appreciation to Prof. Norsidah Ujang for her encouragement, guidance, critics, caring and patience during the whole period of the study. Without her help, this thesis would not have been the same presented. I would like to thank the members of the committee, Dr. Mohd Johari Mohd Yusof, and Dr. Suhardi Maulan, for their advice during the preparation of this thesis. Also, I would like to thank Prof. Kamariah Dola, as my committee member whom, unfortunately, we missed two years ago. I also thank Juriah Zakaria for helping me in translation into Malay.

Finally, but by no means least, my deepest gratitude goes to my beloved parents, and my gorgeous sisters, Nasibeh and Sakineh, also my brother, Roohollah for their unflagging love and unconditional support -both spiritually and materially- throughout my life and my study.

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

CAI-Asia	Clean Air Initiative for Asian Cities
DBKL	Dewan Bandaraya Kuala Lumpur (City Hall of Kuala Lumpur)
DfT	Department for Transport
GIS	Geographic Information Systems
GPS	Global Positioning System
IMI	Irvine-Minnesota Inventory
JTAR	Jalan Tuanku Abdul Rahman
KL	Kuala Lumpur
KLCC	Kuala Lumpur City Center
KLSP	Kuala Lumpur Structure Plan
LOS	Level of Service
LRT	Light Rail Transit
MICE	Meetings, Incentives, Conferencing, Exhibitions
PEDS	Pedestrian Environmental Data Scan
PERS	Systematic Pedestrian and Cycling Environmental Scan
SQRT	Square Root of a number
TFL	Transport for London
VFR	Visiting Friends and Relatives
WTO	World Tourism Organization

GLOSSARY OF TERMS

Jalan	Street
Masjid	Mosque
Visitor / tourist	someone who is making a visit to a main destination outside his/her usual environment for less than a year for any main purpose [including] holidays, leisure and recreation, business, health, education or other purpose.
Domestic (local) visitor	Those whose country of residence is the country visited; but their destinations is not placed in their living city.
International visitor	Those who travel to a country other than that in which they have their usual residence, but outside their usual environment.
Tourism	The activities of persons identified as visitors.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Asian cities have traditionally been places for walkers, plenty of city dwellers rely on walking, cycling and public transportation for their daily trip. Among all modes of transport, walking is a one of the significant ones. All human beings could be considered as a pedestrian for varying time spent on walking, despite rapid pace of motorization growth. Even individuals who use motorcycles and cars, depending on their necessities, walk short or long distances, and it offers mobility to a large proportion of people in urban areas (Wong, 2011). Albeit, with the exponential rise in motorization, there has been limited attention to pedestrian and public transport facilities. As a result, many Asian cities encountered urban transport crises because of this rapid urbanization and economic growth. (Leather, Fabian, Gota, & Mejia, 2011). Also, the ability to walk (walkability) has been gradually deteriorated due to the increment of motorized vehicles (Wong, 2011). While improving pedestrian facilities is one of the least prioritized measures for sustainable urban transport in Asia. Nowadays walkability is not only defined by stimulating walking as a mode of transportation (Forsyth & Southworth, 2008), it also associated with improving people's health and experience by just walking in cities (Wong, 2011). In modern discourse, walking and walkability, intertwined with the debates on the quality of urban space and life, tourism and diverse fields of commercial activity in cities. Boosting walkability could be one of the options to change the existing public-private transportation modal share and, therefore, this option possibly assists in relaxing environmental, social and economic tensions in cities, especially congested cities. One of the advantages of cities that have a high level of walkability is that people can reach their destinations without difficulty; more importantly, they can enjoy their walking journeys besides increasing physical activity that maintains their health (Gehl, *et al.*, 2006).

Along with walkability, one of the leading issues of today's world is tourism. It is one of the principals and most prominent industries that improved after the drop of manufacturing and quite a few other industries, which were formerly dominated by the world's commercial and social system (Goeldner, & Ritchie, 2009; Mohamed, 2005). It is one of several economic and social boosters in most urban areas. It covers a sector that administers and markets different experience and products to individuals who hold a vast range of preferences and motivations (Edwards, Griffin, & Hayllar, 2008).

As similar to other countries in the world, tourism industry plays a vital role in boosting the economic condition of Malaysia. As a significant economic booster, the potential of tourism section should be improved and stimulated to exhaust the underlying strength of the country to appoint it as a magnetic international tourist target. Based on World Bank report presented in 2012, the number of arrivals in Malaysia was last declared at 24,577,000 in 2010, comparing to the number of arrivals in 2003, there was a sharp escalation in the number of arrivals that was about 11,000,000, which become 2.5 times more.

It should be considered that tourism encompasses a broad range of categories, according to a different point of views, in which each category covers different types of activities. For instance, it could consist of urban tourism, agro-rural tourism or eco-tourism. Among these classifications, the growing demand for urban tourism has been offset by the large variety of available attractions, which give rise to increasing competition between cities that can be expected to continue growing in the near future (Alegre, & Juaneda, 2006). It refers to activities, which happens in urban areas and encompasses interactions between visitors and urban environments, characterized by heavy concentrations of population. A range of purposes stimulates visitors to cities consists of conference, business, VFR (visiting friend and relatives), and leisure and special interest such as sport, culture or education (King, & Jago, 2003).

Kuala Lumpur as a capital city of Malaysia is the greatest populated and one of the most urbanized cities in the country. During this decade, the city advanced into a marketable core and changed into a popular tourist destination for both international and its domestic market (Henderson & Singh, 2009; Tourism Malaysia, 2010). The number of domestic tourists from different parts of Malaysia who sojourned the city escalated from 2,493,100 in 1997 to 2,803,300 in 2000. International tourist arrivals similarly increased from 3,536,300 in 1997 to 3,946,900 in 2000 (DBKL, 2004). Kuala Lumpur offers many tourist places, which are mostly concentrated in the city center. Tourist attractions encompass a wide range of functions, such as historical (Merdeka Square, Sultan Abdul Samad buildings), religious (Masjid Jamek, Indian and Chinese temples) and commercial (Petaling Street, China Town, Central Market). These places attract both domestic and international visitors who walk around these attractions.

Walking as the most sustainable modes of transportation should play a significant role in making cities livable. In this regard, a substantial amount of urban design and tourism planning researchers worldwide focus on walkability studies to improve the walking environment and to promote walking to destinations that are within walking distances. (Gehl, 2010; Matan, & Newman, 2012; Newman & Matan, 2012; Pucher, & Buehler, 2010). Walking will bring many benefits to the individuals and society, improving the health condition of people, more chance of having social interaction, less pollution and so on (Frank *et al.*, 2006). In the context of pedestrian experience, to have a better understanding of the city and capture its image, walking is a proper mode of transport in which assist tourist to have a strong interaction with the built environment while other modes are less influential (Lynch, 1960).

The term 'Walkability' delivers a principle of good urban design, in which anchored individuals' perception, affect and alter their point of view and behavior. As one part of walking behavior, individuals' route choice might be influenced by the design of the built environment (Borst *et al.*, 2009). Route choice explores travelers' decisions over various route possibilities between the same origin and destination (Guo, 2009). For the street to be chosen and used by individuals, there is a need that street be designed to suit the activities (Rahman, Shamsuddin, & Ghani, 2015). Also, as claimed by Rahman, Shamsuddin and Health (2012), individuals from different groups and cultures inclined to do diverse activities and behaviors in streets. Attributes that could be supportive to walking behavior in European and Western countries might not be that much influential to the walking behavior in the context of Malaysia. Mostly, studies in which concerned about individuals' preferences did not specifically concentrate on streets (Rahman, *et al.*, 2012). There is a possibility that users' needs in Malaysian streets differentiate from

needs of users in other places. Therefore, it is significant to probe actual activities and uses, as well as, their preferences to investigate individuals' choices and behavior in the streets. Moreover, it is a necessity to evaluate quality and characteristic of streets and activity of users to assure the prospering design for the urban streets.

Considering city center of Kuala Lumpur as a place, which encompasses different attractions mostly commercial streets, they are not well linked and readily available for its users specifically for pedestrian movement, and the whole spectrum of the attractions are segmented (DBKL, 2004). Also, there is an absence of clarification in the movement pattern of the pedestrians. In this regard, DBKL tends to maximize the intrinsic assets of Kuala Lumpur to create an attractive international tourist destination and extend the pedestrianization policies in the city center. So that, identification of movement pattern and preferences of its users particularly its visitors (both domestic and international) to choose a route should be taken into account. While there is a need to investigate the relationship between physical attributes of the streets in the city center with users activities and choices. This research is crucial in making tourist places more attractive in such a way that individuals decide on walking long distances within it. It will bring new insight on how to make an improvement on the level of the walkability through identification of tourists' choices of routes.

1.2 Research background

For more than 50 years, numerous amounts of research have been done on motorized transportation, in term of accessibility, connectivity and safety of the roads. Since, post-modernism period, planning for pedestrian came into attention and walkability identified as one of the major components of the sustainable cities (Lo, 2009). In this regards, Carmona (2010) asserted that in city planning and design, pedestrians should be given more attention rather than cars. In recent decades, the concepts of sustainability and sustainable urban design have been much explored in planning, urban design and tourism fields. One of the crucial factors in making sustainable cities is the use of sustainable modes of transport, which include walking and cycling. Gehl (2010), in his project of the Christchurch, asserted that walking as a sustainable mode of transport has a strong effect on health which leads toward a more sustainable lifestyle. Walking is not just a necessity for sustainable mobility, but also, it offers direct implications beyond transportation, consisting of social capital and public health (Leyden, 2003). In addition, improving walkability could benefit in conserving environment, stimulating physical activity, alleviating congestion and enhancing the livability of communities (Blanco *et.al*, 2009).

Regardless of the recent pedestrian-oriented tendency in urban planning, still there are not adequate and sufficient methods applied in planning processes to predict spatial movement patterns of pedestrians (Kitazawa, & Batty, 2004). There is a need for urban planners who incline to implement walking-friendly -in another word, walkable- urban environment schemes to assist them with perceiving current condition of individuals while walking in city centers. It will be achieved by quantifying flows and investigating their walking patterns. In addition, there is a necessity for an instrument to provide a precise estimation of the effect of built environment attribute on pedestrian behavior especially their route choice decision. In this regard, Ewing, Handy, Brownson, Clemente and Winston (2006) designed an instrument to measure urban design qualities, which seemed related to walkability and route choice behavior. These

qualities consist of imageability, enclosure, human scale, transparency and complexity. However, still little evidence (Ameli, *et al.*, 2015; Ewing, & Clemente, 2013) were provided to check the productivity of such an instrument for exploring the walking behavior of individuals. For validating the usefulness of this tool, Ewing and Clemente (2013) presented that only human scale and transparency deliver significant relationship with walkability. While, this is in partial contradiction to the recent study by Ameli *et al.* (2015), which showed transparency and imageability offered the significant association with walkability. Along with that, human scale was found to be significant at the 90% probability level. In this regard, as recommended by Ameli *et al.* (2015), further investigation of the association between the built environment and pedestrian activity is deemed necessary. It also is beneficial for such a study to conduct a survey in parallel for better understandings of individuals' motivations and preferences (Ameli, *et al.*, 2015).

Empirical evidence about the relationship between walking, and the built environment mostly concentrated on neighborhoods (Azmi, Abdul Karim, 2012; Witten *et al.*, 2012; Sallis *et al.*, 2009; Rodriguez, Aytur, Forsyth, Oakes, & Clifton, 2008). However, only a few number of studies focused on the different setting of the cities such as business districts, commercial or tourist places. While individuals experience the built environment along the traversed routes out of their neighborhoods (Isaacs, 2001). It should be asserted that inhabitants are not the only users of the city; visitors and tourist also are the ones whom the city should cater for and meet their demands. Visitors use urban areas, services and facilities intensively, however, little of these places were designed specifically for usage of visitors (Ujang, & Muslim, 2014).

In this regard, along with walkability, urban tourism has been one of the leading issues of urban design in recent decades. In the contemporary society, the tourism manifested via its role and content, a distinct area of activities and a key element of the social life and economic regeneration for a spreading number of countries in the world, which play a crucial role in boosting the livability of the cities and the quality of life. While, the influence of tourism in generating the financial sector and its potential as a sound wealth generator for the urban areas adds to its importance (Gospodini, 2001). Urban tourism, if accurately planned, developed and administered, could bring benefits and advantages not just for urban communities but also to the entire society (Iordache, & Cebuc, 2009). Stanciulescu (2009) asserted that the tourism stimulates the growth of several new commercial and cultural facilities and development that both inhabitants and tourists could take advantage of it. The tourism allows the accumulation of essential investments to preserve the natural, historical and archeological monuments; cultural and artistic traditions and the greatest; it contributes to the environment quality to be improved.

Apart from the significance of walkability for a healthy lifestyle, for visitors to experience the city, it could play a role as a magnet, which makes the routes inviting to pedestrian (Ujang, & Muslim, 2014). Through walking, visitors could interact more deeply with their surroundings and local people will receive more rewarding experience (Wan Omar, Patterson, & Pegg, 2012). It also provides leisure setting and activity places in which could assist visitors to define their sense of place and strengthen tourism product in the urban areas (Williams, 2003). In this regard, it is important for urban designers to ameliorate the condition of the cities, in particular, tourist places, in

a way that induces visitors to consider walking around the places and appreciate the quality of routes they experience.

As Kuala Lumpur is the premier city and the capital of the Malaysia, its social and economic catchment encompasses the whole nation. Since then, several initiatives have been taken into account to establish Kuala Lumpur as "A World-Class City" (DBKL, 2004) (p.xv). Following that the key vision of City Hall Kuala Lumpur become making improvement in the living, business and working environment which offers profit to its residence, businessman, entrepreneurs and tourists. As a world-class city, the city should assure that environment, social, cultural and community facilities, city management and the infrastructure cover the full expectations of the most of its inhabitant, tourists and investors.

In this regard, DBKL (2004) offers several policies from urban design and tourism point of view to support the principal goal. It should design and implement friendly and green street network for walking within urban centers, city center, primary activity nodes and surrounding areas around transit nodes. There should be maintenance and enhancement of the character and serial vision experience along main street corridors especially those, which are linked to the city center. Also, Rahman *et al.* (2015) proposed that in the case of the city center, there is a necessity to provide a more walkable environment in order to lessen the heavy dependency to the vehicle for traversing within the city center.

In terms of tourism, domestic and international tourism can play a fundamental role in Kuala Lumpur's achievement, where it can bring collections of economic activities and aspects that can boost the local economy. In addition, the city makes a profit from its exposure. Visitors (both international and domestic) capture a higher understanding and appreciation of the achievements, culture and image of the city than its resident. The impressions that are brought back to their place of residence could do greatly to enhance the profile of the city and the whole nation. Meanwhile, as Lynch (1960) claimed, pedestrian capture a better image of urban spaces. The uniqueness of a place could better be discovered and experienced by walking within it rather than using the car (Middleton, 2010). So that walking is the most appropriate modes of transport for visitors to boost their interactions with their surrounding and the city, since then, improve their experiences.

Therefore, DBKL (2004) proposed that to accommodate the experience and demands required by visitors, improving the walking conditions is one of the visitors needs which should be met. It indicates a very close connection between visitors' experience as pedestrian and the image of the city as major tourist attraction. So that there is a necessity to consider both terms visitors and pedestrians together to identify visitor preferences as a pedestrian while choosing a particular route. Also, as stated by DBKL (2004), the movement pattern of visitors was not clarified in the city center, so that it is demanding to identify movement pattern of visitors while walking, to understand which streets were more inviting to visitors.

Relative to individuals walking trip, the built environment has been investigated for its effect on destination choice, travel mode choice and trip-making behavior. However, as claimed by Rodriguez *et al.* (2015), within the body of research on the active travel and the built environment, there has been little attention to characteristics of the built

environment which determine route choices of the pedestrians and still it continues to be relatively unexamined. Investigating route choice has the great importance since it offers a distinct perspective on walking behavior compare to conventional studies of active travel and the built environment (Rodriguez *et al.*, 2015).

In addition, route choice analysis hones in on the question of what types of environments are preferred by active travelers' population, based on their observed behavior (Rodriguez *et al.*, 2015). Therefore, studying attributes of a route as an element of the built environment is meaningful to refine the understanding of what facilitates and motivates active travel modes (walking). The current study addresses this gap by investigating how characteristics of the built environment in route-level are related to route choices of visitors while walking within tourist places.

1.3 Problem statement

While walking accounts for significant proportions of individuals' daily trip, it considers as a secondary mode of travel, in which planning authorities pay less attention to (Litman, 2010). However, in current years, substantial number of researches were conducted to make progress on the level of walking in the cities and provide people with the walkable neighborhood (e.g. Alfonzo, Boarnet, Day, McMillan, & Anderson, 2008; Frank, *et al.*, 2010; Matan, & Newman, 2012). While, most studies focused on walking within residential areas and for its residence rather than to other settings. It is important to provide visitors -as other users of the cities- with inviting route to encourage walking in the tourist places. Moreover, the role of these areas in creating the respective image of the urban areas is obvious, which can attract or distract individuals for sightseeing, shopping and other activities. However, there is insufficient consideration of pedestrian movement in those places.

In addition, as tourism generates the economic sector, a great deal of studies focuses on this subject and areas around it. For instance, investigating the spatial behavior of tourist inside and between cities covers the significant part of the researches about tourist and tourism (Edwards, *et al.*, 2010; Edwards, & Griffin, 2013; Shoval, & Isaacson, 2007). These studies mostly probed tourism at macro level such as movement within the whole city or between cities that did not consider walking pattern specifically (Edwards *et al.*, 2010; McKercher, Shoval, Ng & Birenboim, 2012). While both walking and urban tourism play essential roles in the life of the cities, still there are few studies in which explore walking pattern of the visitors at the micro level -street level- (Taczanowska, Arnberger, & Muhar, 2006).

The city center of Kuala Lumpur encounters some problems in terms walking of which should be taken into account. In words of Rahman *et al.* (2015), in urban space development, an absence of understanding of individuals needs could cause a decrease in public spaces, make them unfriendly to its users. Moreover, the sharp increase in construction in the urban areas influences the relationship between social spaces and city users. This concern constitutes one of the crucial issues in Kuala Lumpur city center. Rahman *et al.* (2015) declared that in Kuala Lumpur, there is a deficiency in the number of public spaces in the city center. It makes streets play a role as public spaces, and streets become vital elements of the urban areas in which play a significant role in the city center (Rahman, 2013). However, according to Rahman (2013), there is a lack of examples of streets, which can accommodate needs of its users. In supporting with,

preliminary observation shows that in the city center, particular routes seemed capable (wide sidewalks, convenient and accessible) to be chosen for walking. While they cater for few numbers of users as a place for walking. The streets need to be designed to suit the activities in which to be used by pedestrians (Rahman, *et al.*, 2015). It could be claimed that for a route to accommodate visitors' needs, what matters it is not just accessibility or convenience of the route, the presence of these attributes are necessary. However, it is not enough.

For the domestic and international market, Kuala Lumpur offers popular touristic attractions (Henderson, 2009). However, Wan Omar *et al.* (2012) noted that being so densely occupied by residences and rising in the number of visitors, the city suffers from pollution and traffic congestion. They offered that presence of a network of walking trails around city center for both residents and visitors could be a strategy to address the issues on pollution and congestion. Regarding tourism resources, also, DBKL, (2004) indicated that there is a deficiency in pedestrian linkage and continuity in the city center. As a whole, in the city center, not all tourist attractions are well linked that individuals could walk easily throughout the site. It might discourage pedestrians to choose particular routes to reach their destinations. Consequently, some routes become underused. While the city encompasses numerous variety of potential or factual momentous tourism assets, the current product is segmented (DBKL, 2004).

In addition, deficiency in provisions of amenities for visitors who walk in the area adds to the problem. Moreover, there is a need to rectify the visual and perceptual linkage in the city to ease pedestrian orientation. There is an indication by DBKL (2004) that current pedestrian routes should be developed and extended by focusing on tourist resources. While, there is a need to implement new routes to shape the pedestrian network. Therefore, to make a better improvement in existing routes condition, the current situation of the routes and movement pattern of the visitors should be determined along with considering visitors preferences for choosing a particular route for walking. Despite growing concern on urban tourism in Malaysia, there is an absence of understanding on how visitors consume the urban areas and what affect walking experience of visitors (Ujang, & Muslim, 2014). In the case of visitors' experience, their perception could be determined through visual experience being in the places. So that, there is a necessity to scrutinize the tourism activities at the micro-scale level that consist of the quality of the pedestrian experience, which is affected by the quality of visual and configurational attributes in the tourist places (DBKL, 2004). Table 1.1 highlights urban design and tourism issues and objective for Kuala Lumpur city as mentioned by DBKL (2004) which is presented Kuala Lumpur Structure Plan 2020 in tourism and urban design sections.

Table1.1: Urban design and tourism issues and objectives for Kuala Lumpur city
(Source: DBKL (2004))

		Statement
Urban design	Existing Situation	• The road system has been developed in a piecemeal fashion and therefore, linkages between major and minor roads lack clarity in movement pattern. • A major deficiency, especially in the City Centre, is the lack of pedestrian linkages. Activities such as unlicensed hawkers and vendors encroach into pedestrian walkways.
	Issues	• A lack of clarity in the movement pattern particularly in relation to on/off ramps and one-way systems. • Lack of streetscape consistency and landscape amenity along major roads. • Lack of legible pedestrian patterns. • Lack of continuity of pedestrian and open space linkages. • General lack of amenity and provision for pedestrians. • Absence of an overall urban design framework and guidelines.
	Objectives	• To create a memorable and highly imageable city which engenders a strong sense of ownership and pride and gives appropriate expression to its vision as A World-Class City. • To create a city which is highly legible and comprehensible to its users to enable more effective use of its facilities and a fuller appreciation of its visual and other environmental qualities. • To create a distinctive city identity and image for Kuala Lumpur.
Tourism	Existing Situation	• Kuala Lumpur has a wide diversity of resources suitable for tourism although these are at varying degrees of development or attractiveness. • Some resources are long established and positioned well, while others have been more recently developed or are not yet oriented strongly for tourism. • Similarly some are more attractive or more accessible than others.
	Issues	• Tourist resources are not easily accessible, coherent, well linked for pedestrian movement. • There are accessibility problems to some of Kuala Lumpur's tourist destinations due to traffic congestion on a number of major routes.
	Objective	• To create a city which conserves the best of its environmental, architectural and cultural heritage and which offers a rich blend of both the modern and traditional.

In case of Kuala Lumpur, most focus of studies on walking behavior confined to an area in the city center, specifically Jalan Tuanku Abdul Rahman (JTAR) (e.g. Rahman, *et al*., 2015; Bahari, Arshad, & Yahya, 2014; Ujang, 2014; Wan Omar, *et al*., 2012). JTAR is known as one of the major traditional streets in the city center because of its historical significance and intrinsic socio-cultural stronghold as being amongst initial streets in the Kuala Lumpur city center (Shamsuddin, Rahman, & Sulaiman, 2010). This street accept high concentration of visitors, shoppers and pedestrians (DBKL, 2004) and is placed within an area in which has been chosen for revitalization initiative (Ujang, 2008). However, the highest number of the user of the streets just refers to locals and domestic visitors and scarce numbers of international visitors use the streets. So that while these study contributed significant implications into the investigation of walking behavior of visitors and its relation to built environment, international visitors could not be considered as one of major users of tourist places. In this regard, to shed light on walking behavior of visitors for choosing a particular route, it is demanding to cover wider tourist places in which both domestic and international visitors use the streets. Investigation the influence of walking condition on route choice of pedestrians in tourist places will shed more light on how to provide visitors with walkable routes.

1.4 Goal of the research

The goal of this research is to improve the walkability of tourist places in the city center of Kuala Lumpur through identification of route choice behavior of visitors.

1.5 Research questions and objectives

To investigate the issue, this study has come up with following questions:

Sub research questions:

(i) What is the movement pattern of visitors while walking in the tourist areas?

(ii) Why do visitors choose particular routes and what factors do influence their route choice behavior?

(iii) How visual and configurational features of the routes intertwine in influencing first-time and repeated visitor's preference for route choice in tourist places?

Research Objectives

(i) To identify the route choice behavior of visitors while walking within tourist places.

(ii) To understand the influence of specific factors, namely background of visitors, visual and configurational attributes of the route, on visitors' route choice behavior.

(iii) To examine the interaction of visual and configurational attributes of the route on route choice behavior of first-time and repeated visitors.

1.6 Significance of the study

Since the 1990s, urban walkability has come into sight as a major concern of urban planning and design for academics and professionals. As concerns for future urban sustainability increased, walking is being recognized as an important mode of urban transport.

Along with walkability, urban tourism emerged through a process when tourism industry was seen in danger in 1970's, as a defensive approach to tourism (Ashworth, 1989). The economic conditions after the 1970's were the most significant phenomenon in the city, which allowed tourism to be placed as an important urban function. Experiences are considered to be important contributors to the success of the tourism. Since they are responsible for a significant portion of the income from tourism, a growing number of scholars have shown concerns about this topic. Tourist experiences consist of emotional and cognitive reactions that differentiate depending both on the individuals themselves and on the environment in which they occur. Thus, by investigating more about individual differences in such experiences, the tourism industry can gain valuable insights into how to improve the design and marketing of its products (Andereck, Bricker, Kerstetter, & Nickerson, 2006).

The tourism industry has made a profit to Malaysia regarding its economic development. It has observed through the movement of international visitors, also domestics that have given rise to the enlargement of the tourism destination in the nation. Malaysia possesses plenty of tourism resources that offer a high quality of space, activity and product. However, there are some tourism destinations, which met with failure to deliver an excellent outcome to the tourists. The reason behind this is a deficiency of planning aspect in the tourism development, which fails in accomplishing needs and request of the tourists. The position of Kuala Lumpur as a principal city of the nation should be maintained in the long run, so that it could continue to strive and remain competitive in Malaysia, in attracting international and domestic tourist.

It should be asserted that for a visitor, walking in a strange city is one of the principal ways to experience the city, as tourist have the most interaction with the built environment. Since he or she has enough time to notice all the details in the cityscape while choosing routes which passing places of his or her interests. Tourists usually spend a few days in their holiday destination and have to plan their routes to visit as many interesting places as possible within the given time. Therefore, improving the quality of the route and making walking friendly route -in another word walkable- could allow tourist to boost their experience.

With the lack of literature concerning walkability of tourist places, it is timely for this research to take place. This study is conducted to utilize available insights gained from the vantage point of the international perspective in the local setting. It is expected that the findings of the study will be beneficial to the local authorities to develop policies, also to assist developers and other professionals in designing the tourist places in such a way, which meet tourists' demands in terms of walking and promote walking long distances. The implication of current study suggests better insight into the factors that affected the formation of tourist friendly routes, which invites individuals to walk within it. Those who are responsible for the development of tourism destination should follow the needs and demands of visitors as a pedestrian, which is the basic practice in

the tourist friendly destination concept. In this regard, as Selstad (2007) claimed, it can assist tourists to move from being interested visitors, to become tourists with experiences who wish to return.

1.7 Scope and limitation of the study

As mentioned earlier the goal of this research is to improve the walkability of tourist places in the city center of Kuala Lumpur through identification of route choice behavior of visitors. The term walkability is a multi-faceted concept, which covers a wide span of elements of the built environment. Furthermore, it should be asserted that while the study focused on a walkability, which is an extensive and complex term, this study focuses on investigating route choice of pedestrian specifically, visitors of the historical areas of the city center. The following sections illustrate the scope and limitation of the study.

(a) Study area

The current policy of Kuala Lumpur demonstrated the prominence of tourism in the city. Regard to DBKL (2004), the city center of cover a high concentration of tourism destination. As a tourist destination, the city center should be more inviting to visitors mostly as a pedestrian to experience and gain an image of the city. In this regard, to investigate the route choice behavior of visitors, due to the time constraint and the relevancy of the topic to the chosen context, the boundary of the investigation is limited to historical areas of the city center of Kuala Lumpur. It can be stated that the expansion of tourist places in Kuala Lumpur did not allow this research to cover all tourist places in the city center as it made conducting direct observation, time-consuming and exhausting which might give rise to human error. Historical area of the city covers various types of attractions in which could be stimulating for both international and domestic visitors. While, also presence of attractions in walkable distance from transit station make the area convenient for walking.

(b) Route choice behavior

Route choice behavior could cover different types of investigations regard to aim of the researches. For instance, modeling route choice, focusing on taken between specific origin and destination (OD), or investigating pedestrian movement pattern. Regard to concerns and issues related to the city center and objectives of the study, current study focused on movement pattern of visitors and how they move within city center (spatial behavior) to investigate route choice behavior of visitors.

(c) Route attributes and characteristics

In the context of environmental design, the attributes and components related with walkability and walkable places are wide-ranging based on assortment of approaches and principles. Current study will limit its scope to the attributes of the routes which are more relevant to route choice behavior of visitors while walking in tourist places (refer to Chapter 2). The main attributes comprise configurational (pattern of the streets) and visual attributes (imageability, enclosure, human scale, transparency and complexity).

1.8 Structure of the thesis

The structure of the thesis comprises of six chapters. The first chapter includes the background of the study, identifying issues related to walking and urban tourism. Moreover, this chapter presents goal of the study and identifying research aims and objectives. Finally, it describes the significances of the study, also its scopes and limitations. The second chapter consists of reviews of the literature on walkability and walking behavior and its relation to urban tourism. It also will present different spatial behavior of visitors within tourist places, along with the importance of Kuala Lumpur as a touristic city. In addition, this chapter discusses route choice as part of walking behavior and explores the influential factors (external and internal) related to route choice. Since then visual and configurational attributes of the routes, which are related to route choice will be illustrated exhaustively. Eventually, the conceptual framework of the study and hypothesis will be presented. The third chapter covers the methodology of this research, which describes the scope of the study, previous methodological approaches and methods of the study. This chapter also illustrates the characteristic of the study area, survey instrument design and the measurement criteria in detail. Since then, data collection procedure and data analysis approaches will be indicated. Chapter four focuses on the analysis of gathered data to answer the research question. While chapter five covers the discussion of the research findings. The last chapter provides implication of the study and recommendations for future researches.

REFERENCES

Abbate, A. *Changes in Latitude, Changes in Attitude: A Paradigm Shift in Southern Florida*. In conference proceedings of Achieving Ecologically Sustainable Urbanism in a Subtropical Built Environment. Queensland University of Technology (QUT) Centre for Subtropical Design, Brisbane, QLD. November 2006.

Al Bashir, K. M. (2008). *The use of walkable street in the area around Masjid India, Kuala Lumpur, Malaysia.* (MS), University Technology Malaysia, Johor, Malaysia.

Aldridge, A., & Levine, K., (2001). *Surveying the social world: Principles and practice in survey research*. Buckingham: Open University Press.

Alegre, J., & Juaneda, C. (2006). Destination loyalty: Consumers' economic behavior. *Annals of tourism research*, 33(3): 684-706.

Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A Pattern Language: Towns, Buildings, Construction* (Vol. 2). New York: Oxford University Press.

Alfonzo, M. A. (2005). To walk or not to walk? The hierarchy of walking needs. *Environment and Behavior*, 37(6): 808-836.

Alfonzo, M., Boarnet, M. G., Day, K., McMillan, T., & Anderson, C. L. (2008). The relationship of neighbourhood built environment features and adult parents' walking. *Journal of Urban Design*, 13(1): 29-51.

Ameli, S. H., Hamidi, S., Garfinkel-Castro, A., & Ewing, R. (2015). Do Better Urban Design Qualities Lead to More Walking in Salt Lake City, Utah? *Journal of Urban Design*, 20(3): 393-410.

Amir, A. F., Ismail, M. N. I., & See, T. P. (2015). Sustainable Tourist Environment: Perception of International Women Travelers on Safety and Security in Kuala Lumpur. *Procedia-Social and Behavioral Sciences*, (168): 123-133.

Andereck, K., Bricker, K. S., Kerstetter, D., & Nickerson, N. P. (2006). Connecting Experiences to Quality: Understanding the Meanings behind Visitors' Experiences. In G. Jennings, N.P. Nickerson (Eds.), *Quality Tourism Experiences*, (pp. 81-98). Oxford: Elsevier Butterworth-Heinemann.

Anuar, A. N. A., Ahmad, H., Jusoh, H., & Hussain, M. Y. (2012). Understanding the factors influencing formation of tourist friendly destination concept. *Journal of Management and Sustainability*, 2(1): 106-114.

Anuar, A. N. A., Ahmad, H., Jusoh, H., & Hussain, M. Y. (2013). Policy and tourism development strategy towards tourist friendly destination in Kuala Lumpur. *Asian Social Science*, 9(2): 180-190.

Argin, G. & Ozbil, A. (2015). Pedestrian route choice by elementary school students: The role of street network configuration and pedestrian quality attributes in walking to school. *International Journal of Design Creativity and Innovation.* doi:10.1080/21650349.2015.1123120

Asakura, Y., & Iryo, T. (2007). Analysis of tourist behaviour based on the tracking data collected using a mobile communication instrument. *Transportation Research Part A: Policy and Practice*, 41(7): 684-690.

Ashworth, G. (2009). Questioning the Urban in Urban Tourism. In G. Maciocco, S. Serreli (Eds.), *Enhancing the City: New Perspectives for Tourism and Leisure.* (pp. 207-220). London: Springer Science & Business Media.

Ashworth, G. (2012). Do we understand urban tourism? *Journal of Tourism & Hospitality*, 1(4): e117.

Ashworth, G.J. (1989). Urban Tourism: an Imbalance in Attention. In C. P. Cooper (Ed.) *Progress in Tourism, Recreation and Hospitality Management* (pp. 33-54). London: Belhaven.

Atirah, S., Norsidah, U. *Perception of Comfort and Walkability of Urban Walkways in Kuala Lumpur Commercial District*. Paper presented at 4th International Conference on Built Environment in Developing Countries, Universiti Sains Malaysia. November 2010.

Azmi, D. I., & Karim, H. A. (2012). Implications of walkability towards promoting sustainable urban neighbourhood. *Procedia-Social and Behavioral Sciences*, *50*, 204-213.

Bahari, N. I., Arshad, A. K., & Yahya, Z. (2014). Assessing pedestrian profile according to age and gender in Central Business District, Kuala Lumpur, Malaysia. In *Advanced Materials Research.* (905): 768-772. doi:10.4028/www.scientific.net /AMR.905.768

Baker, T. L., & Risley, A. J. (1999). *Doing Social Research*. New York: McGraw-Hill.

Baran, P. K., Rodríguez, D. A., & Khattak, A. J. (2008). Space syntax and walking in a new urbanist and suburban neighbourhoods. *Journal of Urban Design*, *13*(1), 5-28.

Benfield, F. K (2014, June 10). Remembering the Human Scale in Walkable City Neighborhoods. Retrieved from http://www.huffingtonpost.com/f-kaid-benfield/ remembering-the-human-sca_b_5938516.html

Berkani, Y. (2013). *Urban Morphology and Pedestrian Movement of Traditional Market Place in Casbah Algiers.* (PhD). Universiti Teknologi Malaysia, Malaysia.

Berrigan, D., Pickle, L. W., & Dill, J. (2010). Associations between street connectivity and active transportation. *International Journal of Health Geographics*, 9(1): 1.

Bissell, D. (2009). Travelling vulnerabilities: mobile timespaces of quiescence. *Cultural Geographies*, 16(4): 427-445.

Blanco, H., Alberti, M., Forsyth, A., Krizek, K. J., Rodriguez, D. A., Talen, E., & Ellis, C. (2009). Hot, congested, crowded and diverse: Emerging research agendas in planning. *Progress in Planning*, 71(4): 153-205.

Boerwinkel, H. W. J. (1995). Management of Recreation and Tourist Behaviour at Different Spatial Levels. In G.J. Ashworth & A.G.J. Dietvorst (Eds.), *Tourism and Spatial Transformations-Implications for Policy and Planning* (pp. 241-263). Wallingford: CAB International.

Borgers, A. W. J., & Timmermans, H. J. P. *Simulating pedestrian route choice behavior in urban retail environments*. Paper presented at Walk21-V Conference "Cities for People", Copenhagen. June 2004.

Borst, H. C., de Vries, S. I., Graham, J., van Dongen, J. E., Bakker, I., & Miedema, H. M. (2009). Influence of environmental street characteristics on walking route choice of elderly people. *Journal of Environmental Psychology*, 29(4): 477-484.

Bovy, P. H., & Stern, E. (1990). *Route Choice. Wayfinding in Transport Networks. Studies in Operational Regional Science*. London: Kluwer Academic Publishers.

Bowden, J. (2003). A Cross-National Analysis of International Tourist Flows in China. *Tourism Geographies*, 5(3): 257-279.

Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality*, 54(1): 106-148.

Carmona, M., Heath, T., Tiesdell, S., & Oc, T. (2010). *Public Places-urban Spaces*: *the Dimensions of Urban Design*. Oxford: Architectural Press.

Cerin, E., Frank, L. D., Sallis, J. F., Saelens, B. E., Conway, T. L., Chapman, J. E., & Glanz, K. (2011). From neighborhood design and food options to residents' weight status. *Appetite*, 56(3): 693-703.

Chang, D. (2002). Spatial choice and preference in multilevel movement networks. *Environment and Behavior*, 34(5): 582-615.

Chau, L. W., Ismail, H. N., & Hamidi, S. (2010). Effects of Trip Purpose on Preferred Walking Environment & Route Choice of Pedestrians in Narmak, Tehran. CIDP Monograph, Universiti Teknologi Malaysia

Choi, E. (2013). Understanding Walkability: Dealing with the complexity behind pedestrian behavior. Proceeding of *9th International Space Syntax Symposium, Seoul, Sejong University 2013*. Sejong University.

Christchurch Public Space Public Life (2010). Christchurch City Council: New Zealand

Clifton, K. J., & Livi, A. D. (2004). Pedestrian Environment Data Scan Audit Protocol. University of Maryland.

Clifton, K. J., Livi Smith, A. D., & Rodriguez, D. (2007). The development and testing of an audit for the pedestrian environment. *Landscape and Urban Planning*, 80(1): 95-110.

Clifton, M. B. (2013). *Placemaking and Walkability in Austin's Capitol Complex*. (M.Sc.). The University of Texas at Austin, United States.

Cochran, W. G. (1977). *Sampling Techniques*. New York City: John Wiley & Sons.

Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. New York: Lawrence Erlbaum Associates, Publishers.

Craig, C. L., Brownson, R. C., Cragg, S. E., & Dunn, A. L. (2002). Exploring the effect of the environment on physical activity: a study examining walking to work. *American Journal of Preventive Medicine*, 23(2): 36-43.

Creswell, J. W. (1999). Mixed-method research: Introduction and Application. In G.J. Cizek (Ed.), *Handbook of Educational Policy*, (pp. 455-472). San Diego, CA: Academic Press.

Creswell, J. W. (2007). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches.* Lincoln: Sage.

Creswell, J. W. (2009). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches.* Lincoln: Sage.

Cronk, B. C. (2004). *How to Use SPSS: A Step-by-step Guide to Analysis and Interpretation*. California: Pyrczak Pub.

Daamen, W., & Hoogendoorn, S. P. (2003). Research on pedestrian traffic flows in the Netherlands. In Proceedings of Walk 21, 101-117.

Day, K., Boarnet, M., Alfonzo, M., & Forsyth, A. (2006). The Irvine–Minnesota inventory to measure built environments: development. *American Journal of Preventive Medicine*, 30(2): 144-152.

De Vaus, D. A. (2014). *Surveys in Social Research.* Crows Nest, NSW: Allen & Unwin

Dewan Bandaraya Kuala Lumpur (2004). *Kuala Lumpur Structure Plan 2020: A World Class City*. City Hall Kuala Lumpur.

Edwards, D., Dickson, T., Griffin, T., Hayllar, B., Richards, G., & Munsters, W. (2010). Tracking the Urban Visitor: Methods for Examining Tourists' Spatial Behaviour and Visual Representations. In G. Richards & W. Munsters (Eds.), *Cultural Tourism Research Methods*, (pp. 104-114). Oxfordshire: CAB International.

Edwards, D., & Griffin, T. (2013). Understanding tourists' spatial behaviour: GPS tracking as an aid to sustainable destination management. *Journal of Sustainable Tourism.* 21(4): 580-595.

Edwards, D., Griffin, T., & Hayllar, B. (2008). Urban Tourism Precincts; an Overview of Key Themes and Issues. In Hayllar, T. Griffin, & D. Edwards (Eds.), *City Spaces -Tourist Spaces: Urban Tourism Precincts*, (pp. 95-105). Oxford: Elsevier Butterworth-Heinemann.

European Travel Commission (2005), City Tourism & Culture: The European Experience. Report prepared for the Research group of the European Travel Commission (ETC) and the World Tourism Organization (WTO), Brussels, Belgium

Ewing, R., & Clemente, O. (2013). *Measuring Urban Design: Metrics for Livable Places.* Washington: Island Press

Ewing, R., & Handy, S. (2009). Measuring the unmeasurable: urban design qualities related to walkability. *Journal of Urban Design*, 14(1): 65-84.

Ewing, R., Hajrasouliha, A., Neckerman, K. M., Purciel-Hill, M., & Greene, W. (2016). Streetscape features related to pedestrian activity. *Journal of Planning Education and Research*, 36(1): 5-15.

Ewing, R., Handy, S., Brownson, R. C., Clemente, O., & Winston, E. (2006). Identifying and measuring urban design qualities related to walkability. *Journal of Physical Activity & Health*, 3(1): S223-S240.

Fanek M. F. (1997). *The Use of Space Syntax Methodology in Predicting the Distribution of Crime in Urban Environments.* (PhD). Texas Tech University, USA.

Fennell, D. A. (1996). A tourist space-time budget in the Shetland Islands. *Annals of tourism research*, 23(4): 811-829.

Field, A. (2009). *Discovering statistics using SPSS*. London: Sage publications.

Figueiredo, L., & Amorim, L. *Continuity lines in the axial system*. Paper presented at the Fifth Space Syntax International Symposium. Delft University of Technology, Delft, The Netherlands. June 2005.

Fisher-Gewirtzman, D., & Wagner, I. A. (2003). Spatial openness as a practical metric for evaluating built-up environments. *Environment and Planning B, 30*(1): 37-50.

Flognfeldt Jr, T. (1999). Traveler geographic origin and market segmentation: The multi trips destination case. *Journal of Travel & Tourism Marketing*, 8(1): 111-124.

Forsyth, A., & Southworth, M. (2008). Cities Afoot-Pedestrians, Walkability and Urban Design. *Journal of urban design*, 1(13): 1-3.

Fox, N., Hunn, A., & Mathers, N. (2007). *Sampling and sample size calculation*. UK: The NIHR RDS for the East Midlands/Yorkshire & the Humber.

Frank, L. D., Sallis, J. F., Conway, T. L., Chapman, J. E., Saelens, B. E., & Bachman, W. (2006). Many pathways from land use to health: associations between neighborhood walkability and active transportation, body mass index, and air quality. *Journal of the American Planning Association*, 72(1): 75-87.

Frank, L. D., Sallis, J. F., Saelens, B. E., Leary, L., Cain, K., Conway, T. L., & Hess, P. M. (2010). The development of a walkability index: application to the Neighborhood Quality of Life Study. *British journal of sports medicine*, 44(13): 924-933.

Gallin, N. (2001). Quantifying pedestrian friendliness: guidelines for assessing pedestrian level of service. *Road and Transport Research*, 10(1): 47-55.

Gärling, T., & Gärling, E. (1988). Distance minimization in downtown pedestrian shopping. *Environment and Planning A*, 20(4): 547-554.

Gebel, K., King, L., Bauman, A., Vita, P., Gill, T., Rigby, A., & Capon, A. (2005). *Creating healthy environments: A review of links between the physical environment, physical activity and obesity*. Sydney: NSW Health Department and NSW Centre for Overweight and Obesity.

Gehl Architects (2010). *Christchurch public space public life*. Christchurch City Council: Christchurch, NW.

Gehl, J. 1987. Life Between Buildings. New York, Van Nostrand Reinhold.

Gehl, J., & Gemozoe, L. (2000). New city spaces. Copenhagen, Denmark: Danish Architectural Press

Gehl, J., Gemzøe, L., Kirknaes, S., & Søndergaard, B. S. (2006). *New city life*. Copenhagen: The Danish Architecture Press.

Gitelson, R. J., & Crompton, J. L. (1984). Insights into the repeat vacation phenomenon. *Annals of Tourism Research*, 11(2): 199-217.

Goeldner, C. R., & Ritchie, J. B. (2009). *Tourism: Principles, practices, philosophies*. New York City: John Wiley & Sons.

Golledge, R.G. (1995). Path selection and route preference in human navigation: a progress report. In Frank A.U., Kuhn, W. (Eds.), *Spatial Information Theory: A Theoretical Basis for GIS* (pp. 182–199). Berlin: Springer

Gómez, L. F., Parra, D. C., Buchner, D., Brownson, R. C., Sarmiento, O. L., Pinzón, J. D., ... & Lobelo, F. (2010). Built environment attributes and walking patterns among the elderly population in Bogotá. *American journal of preventive medicine*, 38(6): 592-599.

González, M. C., Hidalgo, C. A., & Barabási, A. L. (2009). Understanding individual human mobility patterns. *Nature*, 458(7235): 238-238.

Gospodini, A. (2001). Urban design, urban space morphology, urban tourism: an emerging new paradigm concerning their relationship. *European Planning Studies*, 9(7): 925-934.

Groat, L., & Wang, D. (2002). *Architectural Research Methods.* New York: John Wiley & Sons

Guidance on the Appraisal of Walking and Cycling Schemes. (2009). Department for Transport: London. http://www.webtag.org.uk/webdocuments/3_Expert/14_ Walking_Cycli ng/3.14.1.htm

Gravetter, F.J. & Wallnau, L.B. (2004). Statistics for the behavioral sciences (6th edn). Belmont, CA: Wadsworth

Guo, Z. (2009). Does the pedestrian environment affect the utility of walking? A case of path choice in downtown Boston. *Transportation research part D: Transport and Environment, 14*(5): 343-352.

Guo, Z., & Loo, B. P. (2013). Pedestrian environment and route choice: evidence from New York City and Hong Kong. *Journal of transport geography*, (28): 124-136.

Hairul, I., Baum, T., & Kokranikkal, J. (2004). *Urban Tourism in Developing Countries: A case of Malaysia.* Glasgow: University of Strathclyde.

Handy, S. L. (1996). Understanding the link between urban form and nonwork travel behavior. *Journal of planning education and research*, 15(3): 183-198.

Handy, S., Cao, X., & Mokhtarian, P. L. (2006). Self-selection in the relationship between the built environment and walking: Empirical evidence from Northern California. *Journal of the American Planning Association*, 72(1): 55-74.

Hayllar, B.,&Griffin, T. (2009). Urban tourist precincts as sites of play. In G. Maciocco & S. Serreli (Eds.), *Enhancing the City: New Perspectives for Tourism and Leisure* (pp. 65–81). Dordrecht: Springer.

Hedman, R. (1984) *Fundamentals of Urban Design.* Chicago, IL: American Planning Association.

Hein, J. R., Evans, J., & Jones, P. (2008). Mobile methodologies: Theory, technology and practice. *Geography Compass*, 2(5): 1266-1285.

Henderson, J. C., & Singh, S. (2009). Cultivating domestic tourism with global advantage: Malaysia and Singapore compared. In S. Singh (Ed.), *Domestic Tourism in Asia: Diversity and Divergence* (pp. 283-297). London: Earthscan

Herzog, T. R., Kaplan, S., & Kaplan, R. (1976). The prediction of preference for familiar urban places. *Environment and Behavior*, 8(4): 627-645.

Hill, M. (1982). *Spatial structure and decision-making of pedestrian route selection through an urban environment.* (PhD). University Microfilms International.

Hill, M. R. (1984). Stalking the Urban Pedestrian: A Comparison of Questionnaire and Tracking Methodologies for Behavioral Mapping in Large-Scale Environments. *Environment and Behavior*, 16(5): 539-550.

Hillier, B. (1985). The nature of the artificial: the contingent and the necessary in spatial form in architecture. *Geoforum*, 16(2): 163-178.

Hillier, B. (1996). *Space is the Machine: a Configurational Theory of Architecture*. Cambridge, UK: Cambridge University Press.

Hillier, B. (1998). From research to design: re-engineering the space of Trafalgar Square. *Urban Design Quarterly*, (68): 35-37.

Hillier, B., & Hanson, J. (1984). *The Social Logic of Space*. Cambridge: Cambridge University Press.

Hillier, B., & Vaughan, L. (2007). The city as one thing. *Progress in Planning*, *67*(3): 205-230.

Hillier, B., Burdett, R., Peponis, J., & Penn, A. (1987). Creating life: or, does architecture determine anything?. *Architecture et Comportement/Architecture and Behaviour*, 3(3): 233-250.

Hillier, B., Hanson, J., & Graham, H. (1987). Ideas are in things: an application of the space syntax method to discovering house genotypes. *Environment and Planning B: planning and design*, 14(4): 363-385.

Hillier, B., Penn, A., Hanson, J., Grajewski, T., & Xu, J. (1993). Natural Movement or, configuration and attraction in urban pedestrian movement. *Environ Plann B*, 20(1): 29-66.

Hillier, B.; Iida, S.; (2005). *Network and psychological effects in urban movement.* In: A.G. Cohn & D.M. Mark (Eds.), COSIT'05 in Proceedings of the 2005 International Conference on Spatial Information Theory (pp. 475-490). Berlin, Germany: Springer-Verlag. doi:10.1007/11556114_30

Holden, A. (2007). *Environment and Tourism*. New York: Routledge.

Hoogendoorn, S. P., & Bovy, P. H. (2005). Pedestrian travel behavior modeling. *Networks and Spatial Economics*, 5(2): 193-216.

Hoogendoorn, S. P., & Bovy, P. H. L. (2004). Pedestrian route-choice and activity scheduling theory and models. *Transportation Research Part B: Methodological*, 38(2): 169-190.

Hung, W., Manandhar, A., & Ranasinghege, S. A. A. Walkability Survey in Hong Kong. In proceeding APSA 2011 / 11th International Congress of Asian Planning Schools Association. Tokyo, Japan. September 2011.

Iordache, C. and Cebuc, I. (2009). The influence of juridical regulations upon tourist town planning. *Theoretical and Empirical Researches in Urban Management*, 1(10): 86-92.

Isaacs, R. (2001). The subjective duration of time in the experience of urban places. *Journal of Urban Design*, 6(2): 109-127.

Jacobs, J. (1961). *The Death and Life of Great American Cities*. UK: Vintage.

Jaskiewicz, F. (2000). *Pedestrian level of service based on trip quality.* In Transportation Research Board Circular. E-C019: Urban Street Symposium. Washington, D.C.

Jiang, B. (2009). Ranking spaces for predicting human movement in an urban environment. *International Journal of Geographical Information Science,* 23(7): 823-837.

Jiang, B., & Liu, X. (2010). Automatic generation of the axial lines of urban environments to capture what we perceive. *International Journal of Geographical Information Science,* 24(4): 545-558.

Kawada, K., Yamada, T., & Kishimoto, T. (2014). Street Choice Logit Model for Visitors in Shopping Districts. *Behavioral Sciences,* 4(3): 154-166.

Kelly, C. E., Tight, M. R., Hodgson, F. C., & Page, M. W. (2011). A comparison of three methods for assessing the walkability of the pedestrian environment. *Journal of Transport Geography*, 19(6): 1500-1508.

Kim, H. J. & Yoo, J. Y. (2000). Urban tourism development research.

King, A. C., Stokols, D., Talen, E., Brassington, G. S., & Killingsworth, R. (2002). Theoretical approaches to the promotion of physical activity: forging a transdisciplinary paradigm. *American Journal of Preventive Medicine*, 23(2): 15-25.

King, B. E., & Jago, L. K. (2003). A tale of two cities: urban tourism development and major events in Australia. *Centre for Hospitality and Tourism Research. Victoria University*.

Kitazawa, Kay, and Batty M. Pedestrian Behavior Modeling: An application to retail movement using a generic algorithm. In the Proceedings of the 7th International Conference on Design and Decision Support Systems (DDSS) in Architecture and Urban Planning. Conference Centre De Ruwenberg, Sint-Michielsgestel, Netherlands. July 2004.

Klarqvist, B. (1993). A space syntax glossary. *Nordisk Arkitekturforskning*, (2): 11-12.

Koohsari, M. J., Karakiewicz, J. A., & Kaczynski, A. T. (2013). Public open space and walking the role of proximity, perceptual qualities of the surrounding built environment, and street configuration. *Environment and Behavior*, 45(6): 706-736.

Kubat, A. S., Ozer, O., & Ozbil, (2013), A. Defining a strategical framework for urban pedestrianization projects. *In Conference Proceedings of the Ninth International Space Syntax Symposium, Seoul.*

Kumar, R. (2010). *Walkability of neighborhoods: a critical analysis of the role played by zoning codes in creating a walkable environment.* Germany: Lambert Academic Publishing.

Kusenbach, M. (2003). Street phenomenology the go-along as ethnographic research tool. *Ethnography*, 4(3): 455-485.

Land Transport & Safety Authority. 2004. Pedestrian Network Planning and Facilities Design Guide. Preliminary Consultation Draft, New Zealand. www.ltsa.govt.nz/consultation/ped- network-plan.

Latif, N. S. A., (2011). *Contextual integration in waterfront development*. (PhD). University of Nottingham, Malaysia.

Lau, A. L., & McKercher, B. (2004). Exploration versus acquisition: A comparison of first-time and repeat visitors. *Journal of Travel Research*, 42(3): 279-285.

Lau, G., & McKercher, B. (2006). Understanding tourist movement patterns in a destination: A GIS approach. *Tourism and Hospitality Research*, 7(1): 39-49.

Lew, Leather, J., Fabian, H., Gota, S., & Mejia, A. (2011). Walkability and Pedestrian Facilities in Asian Cities: State and Issues. *ADB Sustainable Development Working Paper Series* (17).

Lehto, X. Y., O'Leary, J. T., & Morrison, A. M. (2004). The effect of prior experience on vacation behavior. *Annals of Tourism Research*, 31(4): 801-818.

Lew, A., & McKercher, B. (2006). Modeling tourist movements: A local destination analysis. *Annals of Tourism Research,* 33(2): 403-423.

Leyden, K. M. (2003). Social capital and the built environment: the importance of walkable neighborhoods. *American Journal of Public Health*, 93(9): 1546-1551.

Li, X. R., Cheng, C. K., Kim, H., & Petrick, J. F. (2008). A systematic comparison of first-time and repeat visitors via a two-phase online survey. *Tourism Management*, 29(2): 278-293.

Litman, T. (2010). Quantifying the benefits of nonmotorized transportation for achieving mobility management objectives. *Victoria Transport Policy Institute*, (30): 1-39.

Litman, T. A. (2003). Economic value of walkability. *Transportation Research Record: Journal of the Transportation Research Board*, 1828(1): 3-11.

Lo, R. H. (2009). Walkability: what is it? *Journal of Urbanism*, 2(2): 145-166.

Lobo, C. (2004). *The Role of Environmental Perceptions in Sense of Place: Case Studies of Neighborhoods* .Phoenix, Arizona. (PhD). Arizona State University, USA.

Long, Y. (2007). *The Relationships between Objective and Subjective Evaluations of The Urban Environment: Space Syntax, Cognitive Maps, and Urban Legibility.* (PhD). North Carolina State University, USA.

Lumsdon, L. *Walking and tourism: The imagery of European cities.* Paper presented to Walk 21-V Cities for People, The Fifth International Conference on Walking in the 21st Century. Copenhagen, Denmark. June 2004,

Lumsdon, L., Tolley, R., & Page, S. J. (2004). Non-motorised transport and tourism: a case study-cycle tourism. Tourism and transport: issues and agenda for the new millennium, 147-156.

Lynch, K. (1960). *The Image of the City*. London: MIT press.

Lynch, K. (1984). *Good City Form*. London: MIT press.

Mackett, R. L., Gong, Y., Kitazawa, K., & Paskins, J. *Children's local travel behavior-how the environment influences, controls and facilitates it.* Paper presented at the 11th World Conference on Transport Research. Berkeley, California. June 2007.

Making London a Walkable City: The Walking Plan for London. (2004). Transport for London: London.

Making Tourism More Sustainable: A Guide for Policy Makers. (2005). United Nations Environment Programme and World Tourism Organization

Marshall, S. (2005). *Streets & patterns.* London, England: Spon Press

Matan, A. (2011). Rediscovering urban design through walkability: an assessment of the contribution of Jan Gehl. (PhD). Curtin University, Perth WA.

Matan, A., & Newman, P. (2012). Jan Gehl and New Visions for Walkable Australian Cities. In J. Whitelegg (Ed.) *World Transport, Policy & Practice World Transport, Policy & Practice- Special Edition: A Future Beyond the Car* (pp. 30-41). Lancaster, U.K: Eco-Logica Ltd.

Matos Wunderlich, F. (2008). Walking and Rhythmicity: Sensing Urban Space. *Journal of Urban Design*, 13(1): 125-139.

McIntosh, A. J. (1997). *The Experiences and Benefits Gained by Tourists Visiting Socio-Industrial Heritage Attractions.* Buckingham: Open University Press.

McKercher, B., Shoval, N., Ng, E., & Birenboim, A. (2012). First and repeat visitor behaviour: GPS Tracking and GIS Analysis in Hong Kong. *Tourism Geographies*, 14(1): 147-161.

McKercher, B., Wong, C., & Lau, G. (2006). How tourists consume a destination. *Journal of Business Research*, *59*(5), 647-652

Mecredy, G., Pickett, W., & Janssen, I. (2011). Street connectivity is negatively associated with physical activity in Canadian youth. *International Journal of Environmental research and public health*, *8*(8): 3333-3350

Meyer, M. D., & Miller, E. J. (2001). *Urban Transportation Planning: A Decision-Oriented Approach*. New York: McGraw-Hill.

Middleton, J. (2010). Sense and the City: exploring the embodied geographies of urban walking, *Social and Cultural Geography*, 11(6): 575–96.

Millonig, A., & Schechtner, K. *City Tourism: Pedestrian Orientation Behaviour.* In International Conference on Walking and Liveable Communities, 7th, Melbourne, Victoria, Australia. October 2006.

Millonig, A., Schechtner, K. (2007). Developing Landmark-based Pedestrian Navigation Systems. IEEE Transactions on Intelligent Transport Systems (ITS). *Special Selection on ITSC'05*, 8(1): 43–49.

Millonig, A., & Schechtner, K. *Understanding Walking Behaviour- Pedestrian Motion Patterns and Preferences in Shopping Environments.* In Walk21 - 9th International Conference on Walking, Barcelona. October 2008.

Mohamed, B. *The Analysis of Malaysian domestic travelers*. In International Conference on Tourism Development. Penang, Malaysia. January 2005.

Moudon, A. V., & Lee, C. (2003). Walking and bicycling: an evaluation of environmental audit instruments. *American Journal of Health Promotion*, 18(1): 21-37.

Mullins, P. (1999). International tourism and the cities of Southeast Asia. In S. Fainstein, D. Judd (Eds.), *The Tourist City* (pp. 245–260). Yale University Press: New Haven

Muraleetharan, T., & Hagiwara, T. (2007). Overall level of service of urban walking environment and its influence on pedestrian route choice behavior: analysis of pedestrian travel in Sapporo, Japan. *Transportation Research Record: Journal of the Transportation Research Board*, 2002(1): 7-17.

Nasar, J. L. (1998). *The Evaluative Image of the City*. Thousand Oaks, CA: Sage Publications.

Newman, P., & Matan, A. (2012). Human mobility and human health. *Current Opinion in Environmental Sustainability*, *4*(4): 420-426.

Nunally, J. C., & Bernstein, I. H. (1978). *Psychometric Theory*. New York: McGraw-Hill

Oakes, J. M., Forsyth, A., & Schmitz, K. H. (2007). The effects of neighborhood density and street connectivity on walking behavior: the Twin Cities walking

Oppermann, M. (1995). A model of travel itineraries. *Journal of Travel Research*, 33(4): 57-61.

Özbil, A. (2013). Modeling walking behavior in cities based on street network and land-use characteristics: the case of İstanbul. *METU Journal of the Faculty of Architecture*, 30(2): 17-33.

Ozer, O., & Kubat, A. S. *Walking initiatives: A Quantitative Movement Analysis*. In proceeding of 6th International Space Syntax Symposium. Istanbul, Turkey. June 2007.

Pallant, J. (2013). *SPSS survival manual*. New York: McGraw-Hill

Papinski, D., Scott, D. M., & Doherty, S. T. (2009). Exploring the route choice decision-making process: A comparison of planned and observed routes obtained using person-based GPS. *Transportation Research Part F: Traffic Psychology and Behaviour*, 12(4): 347-358.

Park S. Y. How to use metropolitan tourism to improve quality of life and urban conditions in Asia. Proceedings of the UNWTO International Conference on Metropolitan Tourism, Busan. September 2007.

Park, S. (2008). *Defining, Measuring, and Evaluating Path Walkability, and Testing Its Impacts Oon Transit Users' Mode Choice and Walking Distance to the Station.* (PhD). University of California, Berkeley.

Pedestrian Environment Review Software, V2. (2009). Transport Research Laboratory: London. http://www.trl.co.uk/software/software_products/environment/pers_pedestrian_ environment_review_system.htm

Penn, A., Hillier, B., Banister, D., & Xu, J. (1998). Configurational modelling of urban movement networks. *Environment and Planning B-Planning & Design*, 25(1): 59-84.

Peponis, J., & Wineman, J. (2002). Spatial structure of environment and behavior. In R. B. Bechtel & A. Churchman (Eds.), *Handbook of environmental psychology* (pp. 271-291). New York, NY: John Wiley.

Peponis, J., Bafna, S., & Zhang, Z. (2008). The connectivity of streets: reach and directional distance. *Environment and planning. B, Planning & design*, 35(5): 881.

Peponis, J., Hadjinikolaou, E., Livieratos, C., & Fatouros, D. (1989). The spatial core of urban culture. *Ekistics*, 56(334/335): 43-55.

Pikora, T. J., Bull, F. C., Jamrozik, K., Knuiman, M., Giles-Corti, B., & Donovan, R. J. (2002). Developing a reliable audit instrument to measure the physical environment for physical activity. *American Journal of Preventive Medicine*, 23(3): 187-194.

Pooley, C., Whyatt, D., Walker, M., Davies, G., Coulton, P., & Bamford, W. (2010). Understanding the school journey: integrating data on travel and environment. *Environment and Planning. A*, 42(4): 948.

Powell, K. (2010). Making sense of place: mapping as a multisensory research method. *Qualitative Inquiry*, 16(7): 539-555.

Pucher, J., & Buehler, R. (2010). Walking and cycling for healthy cities. *Built Environment*, 36(4): 391-414.

Purciel, M., & Marrone, E. (2006). Observational Validation of Urban Design Measures for New York City: Field Manual. *Active Living Research Program (ALR)*. New York: Columbia University. http://activelivingresearch.org/node/10635.

Purciel, Purciel, M., Neckerman, K. M., Lovasi, G. S., Quinn, J. W., Weiss, C., Bader, M. D., ... & Rundle, A. (2009). Creating and validating GIS measures of urban

design for health research. *Journal of Environmental Psychology*, 29(4): 457-466.

Raford, N., & Ragland, D. R. (2006). *Pedestrian Volume Modeling for Traffic Safety and Exposure Analysis: The Case of Boston, Massachusetts*. In Transportation Research Board 85th Annual Meeting (No. 06-1326).

Rahman, J. I., Ismail, H. N., & Wai, C. L. *Inquiry into Tourists' Movement Flow Pattern in the Melaka World Heritage Site: A Space Syntactic Analysis.* In APSA 2011 / 11th International Congress of Asian Planning Schools Association. Tokyo, Japan. September 2011.

Rahman, N. A. (2013). *User-friendly Street in Malaysia.* (PhD). University of Nottingham, Malaysia.

Rahman, N. A., Shamsuddin, S., & Ghani, I. (2015). What Makes People Use the Street? Towards a Liveable Urban Environment in Kuala Lumpur City Centre. *Procedia-Social and Behavioral Sciences*, (170): 624-632.

Rahman, N. A., Shamsuddin, S., & Heath, T. *Peoples' choices and behaviour in urban streets*. Paper presented at the International Conference on Innovation and Technology for Sustainable Built Environment (ICITSBE). Perak, Malaysia. April 2012.

Ramadanta, A., Sunarti, E. T., & Darjosanjoto, B. (2012). Application of Space Syntax as Presentation and Analysis Technique in the Study of Spatial Integration in Contoured Landform. *Journal of Basic and Applied Scientific Research*, 2(7): 6850-6856.

Rapoport, A. (2013). *History and Precedent in Environmental Design.* London: Springer Science & Business Media.

Read, S. (1999). Space syntax and the Dutch city. *Environment and Planning B*, (26)2: 251-264.

Rodriguez, D. A., Aytur, S., Forsyth, A., Oakes, J. M., & Clifton, K. J. (2008). Relation of modifiable neighborhood attributes to walking. *Preventive Medicine*, 47(3): 260-264.

Rodríguez, D. A., Merlin, L., Prato, C. G., Conway, T. L., Cohen, D., Elder, J. P., ... & Veblen-Mortenson, S. (2015). Influence of the built environment on pedestrian route choices of adolescent girls. *Environment and behavior*, 47(4): 359-394. doi: 10.1177/0013916513520004

Rohrer, J., Pierce, J., & Denison, A. (2004). Walkability and self-rated health in primary care patients. *BMC Family Practice*, 5(1): 1-7.

Saelens, B. E., & Handy, S. L. (2008). Built environment correlates of walking: a review. *Medicine and Science in Sports and Exercise*, 40(7): S550-S566.

Salheen, M., & Forsyth, L. (2001). Addressing distance in the space syntax syntactical model. *Urban Design International*, 6(2): 93-110.

Sallis, J. (2002). Neighborhood Environment Walkability Scale (NEWS).

Sallis, J. F., Bowles, H. R., Bauman, A., Ainsworth, B. E., Bull, F. C., Craig, C. L., ... & Matsudo, S. (2009). Neighborhood environments and physical activity among adults in 11 countries. *American Journal of Preventive Medicine*, 36(6): 484-490.

Sallis, J. F., Millstein, R. A., & Carlson, J. A. (2011). Community design for physical activity. In A.L. Dannenberg, H. Frumkin, R.J. Jackson (Eds.), *Making Healthy Places* (pp. 33-49). Washington DC: Island Press/Center for Resource Economics.

Schmitz, A., & Scully, J. (2006). *Creating Walkable Places: Compact Mixed-Use Solutions.* Washington, DC: Urban Land Institute

Sekaran, U. (2006). *Research Methods for Business: A Skill Building Approach*. New York City: John Wiley & Sons.

Selstad, L. (2007). The social anthropology of the tourist experience. Exploring the "Middle Role". *Scandinavian Journal of Hospitality and Tourism*, 7(1): 19-33.

Seneviratne, P. N., & Morrall, J. F. (1985). Analysis of factors affecting the choice of route of pedestrians. *Transportation Planning and Technology*, 10(2): 147-159.

Seneviratne, P., & Morrall, J. (1985). Analysis of factors affecting the choice of route of pedestrians. *Transportation Planning and Technology*, 10(2): 147-159.

Seto, D. (2008). *Are pedestrian path choices during exploration contingent on measures of shape complexity and visual content of the environment?*. (MSc). Concordia University, Quebec, Canada.

Shamsuddin, S., Hassan, N. R. A., & Bilyamin, S. F. I. (2012). Walkable Environment in Increasing the Liveability of a City. *Procedia-Social and Behavioral Sciences*, (50): 167-178.

Shamsuddin, S., Rahman, N. A., & Sulaiman, A. B. *How Walkable is Our City? Its Influence in Creating Sustainable City Centre Design.* In proceeding of the 1st International onference on Sustainable Architecture and Urban Design (ICSAUD 2010). Penang, Malaysia. March 2010.

Shay, E., Spoon, S. C., Khattak, A. J., & Center, S. T. (2003). Walkable environments and walking activity. *Final Report for Seed Grant Submitted to Southeastern Transportation Center, University of Tennessee*.

Shoval, N., & Isaacson, M. (2007). Tracking tourists in the digital age. *Annals of Tourism Research*, 34(1): 141-159.

Silverman, D. (2013). *Doing Qualitative Research: A Practical Handbook*. Lincoln: Sage Publications Limited.

Singh, S. (1992). Urban development and tourism: case of Lucknow, India. *Tourism Recreation Research*, 17(2): 71-78.

Southworth, M. (1997). Walkable suburbs? An evaluation of neotraditional communities at the urban edge. *Journal of the American Planning Association*, 63(1): 28-44.

Southworth, M. (2005). Designing the walkable city. *Journal of Urban Planning and Development*, 131(4): 246-257.

Spek, S. C. van der. (2006). *Legible City-Walkable City-Liveable City. Observation of Walking Patterns in City Centres*. In conference Proceedings 7th International Walk21 Conference, Melbourne.

Stamps, A. E. (2003). Advances in visual diversity and entropy. Environment and Planning B, 30(3): 449-464.

Stănciulescu, G. C. (2009). The role of urban marketing in the local economic development. Theoretical and Empirical Researches in Urban Management. Romania, 1(10): 114-135.

Stevens, J. P. (2012). *Applied Multivariate Statistics for the Social Sciences*. New York: Routledge.

Tabachnick, B., & Fidell, L. S. (2007). *Using Multivariate Statistics*. New York: Pearson Education Inc.

Taczanowska, K., Arnberger, A., & Muhar, A. Exploring spatial behaviour of visitors in peri-urban recreational areas: multi-attribute analysis of individual route profiles. In *CORP, 2006*, Sustainable Solutions for the Information Society - 11th International Conference on Urban Planning and Spatial Development for the Information Society .Vienna, February 2006.

Taleghani, M. (2010). Tourism as an Economic Development Tool. *Journal of American Science*, 6(11): 412-416

Teddlie, C., & Yu, F. (2007). Mixed methods sampling a typology with examples. *Journal of Mixed Methods Research*, 1(1): 77-100.

Telfer, D. J., & Sharpley, R. (2002). Tourism and regional development issues. *Tourism and development: Concepts and issues*, 112-148.

Tenth Malaysia Plan 2011-2015. (2011). Economic Planning Unit, Economic Planning Unit, Prime Minister's Department: Malaysia

Tourism Malaysia. (2010). Highlight: Malaysia tourist arrivals 2010: Tourism Malaysia, viewed.

Trancik, R. (1986). *Finding Lost Space: Theories of Urban Design.* New York City: John Wiley & Sons.

Turner A. (2009), The role of angularity in route choice: an analysis of motorcycle courier GPS traces. In: S.K. Hornsby, C. Claramunt, M. Denis M. & G. Ligozat (Eds.), *Spatial Information Theory*, (pp: 489-504). Berlin/ Heidelberg, Germany: Springer Verlag,

Turner, A. (2006). UCL Depthmap: spatial network analysis software, version 6.0818 b. *University College London, VR Centre of the Built Environment*.

Ueno, J., Nakazawa, A., & Kishimoto, T. (2009). An analysis of pedestrian movement in multilevel complex by space syntax theory-in the case of Shibuya Station. In D. Koch, L. Marcus & J. Steen, (Eds.), *The proceeding of 7th International Space Syntax Symposium.* Stockholm: KTH

Ujang, N. (2008). *Place Attachment towards Shopping District in Kuala Lumpur City Centr*e, *Malaysia. (PhD)*. Univeresiti Putra Malaysia, Malaysia.

Ujang, N. (2014). Place meaning and significance of the traditional shopping district in the city centre of Kuala Lumpur, Malaysia. *International Journal of Architectural Research: ArchNet-IJAR*, 8(1): 66-77.

Ujang, N., & Muslim, Z. (2014). Walkability and attachment to tourism places in the city of Kuala Lumpur, Malaysia. *Athens Journal of Tourism.* X(Y): 53-65.

Ujang, N., Salim, A., & Maulan, S. (2012). The Influence of Context and Urban Structure on the Walkability of Bukit Bintang Commercial District, Kuala Lumpur. ALAM CIPTA, International Journal of Sustainable Tropical Design Research and Practice, 5(1).

Uoosang, Y., Choi, H.-Y., & Oh, J. (2012). *Analysis on city tour routes in relation to urban spatial structure and pedestrian movement.* Paper presented at the Conference of the International Forum on Urbanism.

Vaughan, L. (2007). The spatial syntax of urban segregation. *Progress in Planning*, 67(3): 205-294.

Wan Omar, R. W., Patterson, I., & Pegg, S. (2012). A green pathway for future tourism success: Walking trails in Kuala Lumpur. *Tourism Planning & Development*, 9(1): 57-76.

Weaver, D. B. (1993). Model of urban tourism for small Caribbean islands. *Geographical Review*, 83(2): 134-140

Weinstein Agrawal, A., Schlossberg, M., & Irvin, K. (2008). How far, by which route and why? A spatial analysis of pedestrian preference. *Journal of Urban Design*, 13(1): 81-98.

Wiley, D. (2010). A Walk about Rome: tactics for Mapping the urban periphery. *Architectural Theory Review*, 15(1): 9-29.

Williams, S. (2003) *Tourism and Recreation.* Harlow: Prentice Hall

Witten, K., Blakely, T., Bagheri, N., Badland, H., Ivory, V., Pearce, J., ... & Schofield, G. (2012). Neighborhood built environment and transport and leisure physical activity: findings using objective exposure and outcome measures in New Zealand. *Environmental Health Perspectives*, 120(7): 971.

Wong, P.W. (2008). Marketing Kuala Lumpur as an urban destination: Improving marketing effectiveness through increased competitiveness. *Revue Tourisme (Tourism Review)*, (17): 117-129

Wong, S. F. (2011). *Walkability and Community Identity in the City Centre of Kuala Lumpur*: University of Melbourne,.

Zacharias, J. (2001). Path choice and visual stimuli: signs of human activity and architecture. *Journal of Environmental Psychology*, 21(4): 341-352.

Zakariya, K., Mohyuddin, A., & Yaman, M. (2007). Refining tourist's place experience through placemaking: Concepts and correlations. *The International Journal of Diversity in Organisations, Communities and Nations*, (7): 249-258.

Zakaria, J., & Ujang, N. (2015). Comfort of walking in the city center of Kuala Lumpur. *Procedia-Social and Behavioral Sciences*, *170*, 642-652

Zang L., Chiradia, A, & Zhuang, Y. (2013). *The Intelligibility Maze of Space Syntax: A Space Syntax Analysis of Toy Models, Mazes and Labyrinths*. In proceedings of the Ninth International Space Syntax Symposium, Seoul: Sejong University.

Zeisel, J. (1984). Inquiry by design: tools for environment-behaviour research (No. 5). CUP Archive.

Zook, J. B., Lu, Y., Glanz, K., & Zimring, C. (2012). Design and pedestrianism in a smart growth development. *Environment and Behavior*, 44(2): 216-234.