

THE ROLE OF PHYSICAL AND FUNCTIONAL CHARACTERISTICS OF  
NINEVEH STREET, MOSUL CITY CENTRE, IRAQ, AS THE SENSE OF PLACE

MUSAAB SAMI YOUNUS AL-OBEIDY

A thesis submitted in fulfillment of the  
requirements for the award of the degree of  
Master of Architecture

Faculty of Built Environment  
Universiti Teknologi Malaysia

AUGUST 2015

To My Father, Sami (may Allah be merciful to him)

To My Mother, Aqilah

To My Brother, Layth

To My Sisters, Iman and Noor

To My Beloved Wife, Rawia

To My Daughter, Asma

Who are the main sources of my happiness in this life

## ACKNOWLEDGEMENT

Praise be to Allah through whose mercy and favours all good things are accomplished. Esteemed praise to Allah, who says in Surat Al-Tawbah, 105, “Say: 'Allah will see your works and so will His Messenger and the believers’”, for helping me and surrounding me fine, kind and intelligent people while carrying out my study which epitomizes the role of physical and functional characteristics of Nineveh Street as the sense of place. One of those people is my supervisor, Assoc. Prof. Dr. Shuhana Shamsuddin who guided me step by step to be a good researcher. I would like to thank her for the continuous support for my Master study, for her patience, motivation, enthusiasm, and immense knowledge.

I also express my profound gratitude to everyone who truthfully helped me with their valuable advice, shared in the success of this thesis to its fullest, and made du'aa especially Dr. Turki Hassan. I also express my warm thanks to my university Universiti Teknologi Malaysia for giving me the opportunity to be one of its Master students. I will never forget PSZ library, and the road between UTM-KL and UTM-JB that was full of hope and ambition.

Last but not the least I would like to thank my beloved family, especially my mother Aqilah who I cannot thank enough for her kindness, moral and spiritual support throughout my life. Mom, I am so grateful for everything that you did. My sincere thanks also goes to my wife and princess Rawia who is my best friend, the starting point of everything, and source of motivation. My beauty Rawia without you I could not able to conduct this research. Thank you all from the bottom of my heart for being there for me.

## ABSTRACT

The street is the most important element which determines the urban pattern of cities by creating its 'sense of place'. It plays a multi-dimensional function in the city. Its essential role can be seen not only through its function as a channel of movement, commercial, social and cultural place, but also through its physical characteristics such as location, appearance, and views in making the street legible and accessible, and in providing a safe, comfortable and orientated environment. In the face of rapid urbanisation, many of these roles of streets have changed, which affect the users' feelings and perception of the street, thus disrupting the sense of place of cities. The aim of this study was to establish the role of Nineveh Street in relation to the sense of place. The objectives of the research are to identify the role of two different characteristics of Nineveh Street; firstly physical and secondly functional characteristics in giving the sense of place. Nineveh Street was selected as a case study based on its physical and functional importance as well as its location in the core of Mosul City Centre in Iraq. A mixed methods approach was adopted in this research. The quantitative method was applied by using 330 questionnaire surveys, while the qualitative method was applied by using 30 semi-structured interviews, and direct observation. The data was quantitatively analysed using SPSS version 21 and qualitatively analysed using descriptive and self-interpretation analysis. The results showed that physically the location, appearance, and quality of views of Nineveh Street plays a significant role in making the street accessible, recognizable, visible and oriented respectively. Meanwhile, functionally the street plays an important role as a commercial space, a channel of movement, and some roles as a cultural and social space. The study concludes that these roles represent qualities that distinguish Nineveh Street and make it unique in terms of sense of place of Mosul City Centre. The major implication of the research is that in order to secure the sense of place of Mosul City Centre, the role of physical and functional characteristics of its streets should be considered in the design and redevelopment policy.

## ABSTRAK

Jalan merupakan elemen terpenting yang menentukan corak urbanisasi sesebuah bandar dengan mewujudkan 'nilai setempatnya'. Ia memainkan fungsi pelbagai dimensi di bandar. Peranan asasnya boleh dilihat bukan hanya melalui fungsinya sebagai laluan pergerakan, perdagangan, sosial dan tempat kebudayaan, tetapi juga melalui ciri-ciri fizikal seperti lokasi, keberadaannya dan pemandangan untuk menjadikan jalan lebih jelas dan mudah dilalui, dan dalam menyediakan jalan berorientasikan persekitaran yang selamat, dan selesa. Bagi menghadapi pembangunan bandar yang rancak, banyak fungsi jalan telah berubah, keadaan ini melibatkan perasaan pengguna dan persepsi terhadap jalan. Oleh yang demikian, ia mengganggu nilai setempat di bandar-bandar. Tujuan utama kajian ini adalah untuk membuktikan peranan Jalan Nineveh dan kaitannya dengan nilai setempat. Dua objektif kajian ini adalah untuk mengenal pasti peranan; pertama, fizikal dan kedua, fungsi ciri-ciri Jalan Nineveh dalam memberikan nilai setempat. Jalan Nineveh dipilih sebagai kajian kes berdasarkan kepentingan fizikalnya serta lokasinya yang terletak di tengah-tengah pusat bandar Mosul, di Iraq. Pendekatan kaedah campuran digunakan dalam kajian ini. Kaedah kuantitatif dijalankan dengan menggunakan 330 soalan soal selidik, manakala kaedah kualitatif, dijalankan dengan menggunakan 30 temu bual separa berstruktur dan pemerhatian secara langsung. Data dianalisa secara kuantitatif menggunakan SPSS versi 21; kualitatif dianalisa menggunakan analisis deskriptif dan tafsiran sendiri. Keputusan menunjukkan bahawa lokasi fizikal, penampilan dan kualiti pandangan terhadap Jalan Nineveh memainkan peranan signifikan untuk menjadikan jalan mudah diakses, dikenali, dan dilihat dan mempunyai orientasi tersendiri. Sementara itu, fungsi jalan memainkan peranan penting sebagai ruang komersial, laluan pergerakan dan sedikit peranan sebagai ruang kebudayaan dan sosial. Kajian menyimpulkan bahawa peranan-peranan ini mewakili kualiti yang membezakan Jalan Nineveh dan menjadikannya unik dari segi nilai setempat di pusat bandar Mosul. Implikasi utama kajian ini adalah untuk mewujudkan nilai setempat pusat bandar Mosul, peranan fizikal dan ciri-ciri fungsi jalan-jalan harus diambil kira dalam polisi mereka bentuk dan pembangunan semula.

## TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	<b>DECLARATION OF THESIS</b>	
	<b>DECLARATION BY SUPERVISOR</b>	
	<b>THESIS TITLE</b>	
	<b>DECLARATION BY RESEARCHER</b>	ii
	<b>DEDICATION</b>	iii
	<b>ACKNOWLEDGEMENT</b>	iv
	<b>ABSTRACT</b>	v
	<b>ABSTRAK</b>	vi
	<b>TABLE OF CONTENTS</b>	vii
	<b>LIST OF TABLES</b>	xiii
	<b>LIST OF FIGURES</b>	xiv
	<b>LIST OF APPENDICES</b>	xviii
<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
	1.1 Introduction	1
	1.2 Research Problems	2
	1.2.1 Problems Related to Physical Characteristics of the Streets	3
	1.2.2 Problems Related to Functional Characteristics of the Streets	5
	1.3 Main and Subsidiary Research Questions	6
	1.4 Research Aim	6
	1.5 Research Objectives	7
	1.6 Methodology	7
	1.7 Research Assumptions	8
	1.8 Significance of the Study	9

1.9	The Study Area and Justifications	10
1.10	Research Scope	11
1.11	The Structure of Thesis	13
<b>2</b>	<b>LITERATURE REVIEW</b>	<b>15</b>
2.1	Introduction	15
2.2	Definitions of Sense of Place	15
2.3	The Definition of Quality	19
2.4	Concept of City Centre	19
2.5	Street as a Component of the City	21
2.5.1	Street Propotions	22
2.5.2	Types of Streets	24
2.5.2.1	Commercial Streets	24
2.6	The Role of the Street Characteristics Relating to the Sense of Place	25
2.6.1	The Physical Characteristics of Streets and their Roles Associated with the Sense of Place	27
2.6.1.1	Location: Making the Street Accessible and Recognisable	29
2.6.1.2	Appearance: Making Street Recognisable	31
2.6.1.3	Landscape Feature: Making the Street Safe and Comfortable	37
2.6.1.4	Quality of Views: Making the Street Visible and Orientated	39
2.6.2	The Functional Characteristics of Streets and their Roles Associated with the Sense of Place	41
2.6.2.1	Streets as Channel of Movement	44
2.6.2.2	Streets as Commercial Spaces	46
2.6.2.3	Streets as Social Spaces	47
2.6.2.4	Streets as Cultural Spaces	49

2.7	People's Perception and Cognition	50
2.8	Theoretical Framework	52
2.9	Summary	55
<b>3</b>	<b>METHODOLOGY</b>	<b>57</b>
3.1	Introduction	57
3.2	The Research Process	57
3.2.1	The First Phase: Deciding What to Research	58
3.2.2	The Second Phase: Planning How to Conduct the Study	58
3.2.3	The Third Phase: Conducting a Research Study	60
3.3	The Research Design	60
3.4	The Methodological Approach	63
3.4.1	Previous Methodology	65
3.4.2	The Scope of Research	67
3.4.3	The Choice of Case Study	69
3.5	The Design of Mixed Methods	70
3.6	The Purpose of Mixed Methods Design	72
3.7	Research Approach	72
3.7.1	Quantitative Approach	73
3.7.1.1	The Questionnaire Survey Design	75
3.7.1.2	Pilot Survey	79
3.7.1.3	The Questionnaire Survey	81
3.7.2	Qualitative Approach	86
3.7.2.1	Field Interview: Semi-Structured Approach	86
3.7.2.2	Direct Observation	91
3.8	Data Analysis Techniques	96
3.8.1	Quantitative Techniques	97
3.8.2	Qualitative Techniques	98

3.9	Validity and Reliability of Mixed Methods	99
3.10	Summary	101
<b>4</b>	<b>CASE STUDY – NINEVEH STREET</b>	
4.1	Introduction	<b>102</b>
4.2	Urban Morphology Definition	102
4.2.1	The Morphology of Mosul City	103
4.2.2	Morphological Changes in the Urban Fabric of the Old City Centre of Mosul City	106
4.3	The Importance of Mosul City	109
4.4	Morphological Changes in the Urban Fabric of the Old City Centre of Mosul City	110
4.5	Nineveh Street as a Case Study	115
4.5.1	The Emergence Phases of Nineveh Street	117
4.5.2	Functional Features of Nineveh Street	121
4.5.3	Physical Features of Nineveh Street	123
4.6	Summary	126
<b>5</b>	<b>ANALYSIS AND FINDINGS</b>	<b>127</b>
5.1	Introduction	127
5.2	Profiles of the Respondents	128
5.3	The Role of the Physical Characteristics of the Street	129
5.3.1	The Role of Location	130
5.3.1.1	Making the Street Accessible	130
5.3.1.2	Making the Street Recognisable	132
5.3.2	The Role of Street Appearance (building, and non-building elements and structures) in Making the Street Recognisable	134
5.3.2.1	The Role of Building Appearance	136
5.3.2.2	The Role of Non-Building	

	Elements	145
5.3.3	The Role of Traffic Systems and Street Design Making the Street Recognisable	150
5.3.4	The Role of the Quality of Views	152
5.3.4.1	Making the Street Recognisable	153
5.3.4.2	Making the Street Oriented	157
5.3.5	The Role of Landscape Features	160
5.3.5.1	Making the Street Safe	160
5.3.5.2	Making the Street Comfortable	162
5.3.6	Retaining Street Features	165
5.4	The Role of the Functional Characteristics of the Street	168
5.4.1	As a Channel of Movement	169
5.4.2	As a Commercial Space	175
5.4.3	As a Social Space	179
5.4.4	As a Cultural Space	182
5.5	Summary	184
<b>6</b>	<b>CONCLUSION</b>	<b>186</b>
6.1	Introduction	186
6.2	Main Findings of the Research	186
6.2.1	Obj. 1: To Identify the Role of Nineveh Street in terms of the Physical Characteristics in Giving Sense of Place in Mosul City Center	187
6.2.2	Obj. 2: To Identify the Role of Nineveh Street in terms of the Functional Characteristics in Giving a Sense of Place in Mosul city Center	188
6.3	Planning and Urban Design Implications	189
6.4	Recommended Guidelines for Improving Nineveh Street	192
6.5	Suggestions for Further Research	194

**REFERENCES**

**195**

Appendices A- D2

213-246

## LIST OF TABLES

<b>TABLE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
1.1	Research methodology used in the study	8
2.1	HWP ratio and place making	23
2.2	Street as a channels of movement	45
3.1	Table of design methodology by researchers	66
3.2	Comparison between open-ended and closed-ended questions of survey	75
3.3	Questionnaire survey design	77
3.4	Sample size required for various percent error at 95% confidence level	83
3.5	A systematic schedule for field questionnaire	85
3.6	Characteristics of structured, semi-structured and unstructured interviews	87
3.7	Field semi-structured interviews framework	90
3.8	A systematic schedule for field of observation	94
3.9	Field observation framework	96
5.1	Accessibility of Nineveh Street	130
5.2	The most distinctive aspects of building on the Street by Respondents	137
5.3	The most distinctive aspects of non-building elements/structures on the Street	146

## LIST OF FIGURES

<b>FIGURE NO.</b>	<b>TITLE</b>	<b>PAGE</b>
1.1	Top view of case study area	11
2.1	Theoretical framework	54
3.1	Research process	59
3.2	The research design	62
3.3	Methods of data collection	63
3.4	The questionnaire survey process of the study	74
3.5	Field observation process	92
3.6	Location of observation	93
3.7	Steps in processing data	97
4.1	Mosul City	104
4.2	The stages of morphological changes of Mosul City Centre	108
4.3	Nineveh Street in the end of 2013 following the American Forces' Occupation of the City in 2003	113
4.4	Case study area (Nineveh Street)	116
4.5	The two sides of Mosul City	117
4.6	The Bridge of Boats and the Iron Bridge	118
4.7	Nineveh Street between 1929-1965	119
4.8	Nineveh Street 2013	120
4.9	A Recent View of the Two Parts of Nineveh Street	121
4.10	A variety of goods in the Street	122
4.11	Spring Festival in the Street in the sixties of the twentieth century	123
4.12	Street buildings	124

4.13	Surrounding streets and alleys associated with Nineveh Street	125
5.1	Summary of the profile of respondents participating in the questionnaire survey	128
5.2	Reasons that make the street accessible	131
5.3	Features or streets that help respondents to find the Street	133
5.4	Comparison among physical appearance of the street in users' recognition	134
5.5	Changing and erosion of the buildings on the Street	135
5.6	Distinctive buildings found by survey respondents	136
5.7	The most distinctive aspects of buildings on the Street	137
5.8	The age of the Latin Church and Al-Aghawat Mosque on Nineveh Street	138
5.9	The height of the Latin Church and Al-Aghawat Mosque	140
5.10	Architectural feature of the Latin Church	141
5.11	Architectural feature of Al-Aghawat Mosque	142
5.12	The part of elevation of the Multi-Storey Parking	143
5.13	Material and colour of Al-Rafedain Bank	144
5.14	The distinctive non-building elements/structures of the Street	145
5.15	Photos show the age of the Old Bridge	147
5.16	Photos show the materials of the Mosul City's bridges	148
5.17	Photos show the location of the Old Bridge	149
5.18	The lighting of the Old Bridge at night	150
5.19	Street features in terms of traffic systems and street design	151

5.20	Street junctions with other main streets	151
5.21	Interesting views of the Street	154
5.22	Reasons why views are interesting	155
5.23	Undesirable views of the Street	156
5.24	Reasons why views are undesirable	156
5.25	Fish market	156
5.26	Reasons why respondents have been and have not been lost in this street	158
5.27	Billboards	158
5.28	Street features or elements used to go to another place	159
5.29	Reasons respondents feel safe and unsafe when they walk along the Street	161
5.30	The only traffic light in Nineveh Street	162
5.31	Reasons why respondents feel uncomfortable when they walk along the street	164
5.32	Features or elements need to be retained	166
5.33	Street features or elements that need to be retained	167
5.34	Street features or elements that need to be improved	168
5.35	The purpose of going to the Street	169
5.36	The purpose of using the Street	170
5.37	Frequency of going to the Street	170
5.38	Modes of travel to this Street from a distance and the reasons of selecting them	171
5.39	Modes of travel used by respondents in the Street and the reasons of selecting them	172
5.40	Nineveh Street before the two Eids	173
5.41	The role of the Street as a channel of movement	174
5.42	Preferred shops for shopping	176
5.43	Variety of goods in the Street	176
5.44	Diversity of shops and goods on the Street	177

5.45	The reasons why respondents prefer to do shopping in the Street	178
5.46	The connections of Nineveh Street with surrounded places and streets	178
5.47	Preferred place / street (s) associated with social activities	180
5.48	The reasons of choosing the place / street (s) by respondents as associated with social activities	181
5.49	The most distinctive features in the Street associated with the cultural role	182
5.50	The cultural and artistic goods	183
5.51	The importance of the Street in religious and cultural celebrations	184

**LIST OF APPENDICES**

<b>APPENDIX NO.</b>	<b>TITLE</b>	<b>PAGE</b>
A	Questionnaire survey	213
B1	A list of interview respondents	225
B2	One interview (respondent number five)	226
C	Maps and photos of Mosul City Centre and Nineveh street	230
D1	Interesting views of the street	243
D2	Undesirable views of the street	245

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Streets are an important part of open public spaces that reflect the character and the sense of place of cities (Najafi and Shariff, 2011). The topic of this research refers to "Role", which means a function or the degree to which someone or something is involved in a situation or an activity and the effect that they have on it (Oxford, 2012). Streets have many functions that give them their sense of place, thus this sense is reflected generally in the city. People depend on streets for functional, social, cultural and leisure activities, as well as for travel, shopping, playing, and meeting other people (Abbaszadeh, 2011; Sholihah, 2006; Moughtin, 2006). Meanwhile, the physical characteristics of streets, such as building and landscape features, contribute not only to make the street legible and accessible (Abbaszadeh, 2011), but also to provide a safe, comfortable, visible, and orientated environment in the street (Ja'afar, et al., 2012; Shamsuddin, 1997). Therefore, it is vital to understand that street character and its role in urban studies is important to reinforce the sense of place of city centres (Cadw, 2010). Based on the statement, the main feature of this research is to identify the role of the physical and functional characteristics of the commercial street in contributing to the sense of place in Mosul City Centre.

Nowadays, rapid development has made an impact towards streets' development that acts as a public space, particularly the streets of the city centres. In Iraq, Mosul City Centre has witnessed a negligence crisis that can threaten the character of the city and reduce the functional and physical roles of public spaces (Mustafa, 2013). Although, in the last years, there were serious attempts by architects, planners, and sociologists for renewal and rehabilitation, but until now

Mosul City Centre has not witnessed factual and visual changes in its context. This issue puts the architects and designers in front of difficult challenges to strengthen the character, identity, and sense of place of Mosul City Centre. Hence, this study is significant in further informing the street character of the city. This research creates a framework to help architects, planners, psychologists and sociologists in identifying and understanding the role of Nineveh Street based on the impact of physical characteristics and functional characteristics on the sense of place.

This chapter is the most important part of the research because it describes what is planned in the study, what questions it will raise and how it will answer them, what the purpose of the study is, and what the methods of the proposed study are (Babbie, 2013). Thus, this chapter represents the main base of the study. This chapter represents the foundation and the major headlines of the whole research and briefly explains the direction of the overall thesis structure. This chapter is accordingly divided into five sections. The first section presents the global and local problems of research. The second, third, and fourth sections outline the research agenda, including the questions, aim, and the objectives of the research. The fifth section explains the methodology used in the proposed study. It is followed by the review of assumptions in the sixth section, and the case study and its justification in the seventh section. The next section presents the research scope and limitation. The last section draws the overall structure of this study.

## **1.2 Research Problems**

This section explains the local and global problems that are related to the physical characteristics and functional characteristics of the commercial street respectively, which in turns contributes in making the sense of place in Mosul City Centre.

### **1.2.1 Problems Related to the Physical Characteristics of Streets**

#### **a) Global Issues**

Many of the physical features of our public open spaces have changed (Ja'afar et al., 2012). According to Abbaszadeh (2011), modern physical characteristics have changed the traffic patterns and size of streets to create wider spaces for vehicles and, as a result, have reduced pedestrian spaces. However, due to the unfit development of street characteristics, the sense of place is interrupted, thus, affecting the people's feelings and perception of the streets (Shamsuddin and Ujang, 2008). In most cases, changes in the physical setting, the types of uses and the streets' activities may consequently erase what is precious.

#### **b) Local Issues**

Kharuffa and Bashi (2013) stated that the emergence of the contemporary urban environment in the old Mosul City is wholly different from the traditional environment. Although the city of Mosul has a deep historic legacy of civilisation and a distinct identity, its growth stages were not without negative effects and mess which still infest the city and contribute intentionally or unintentionally in increasing its decay. Nowadays, the old Mosul City suffers from big, worsening problems that increase with the passage of days. On one hand, the buildings, especially the historical buildings, have become mouldered, largely due to negligence. These issues led to the elimination of the element of astonishment that is strongly experienced in the urban environment of traditional Islamic cities.

On the other hand, the study pointed to the existence of the movement system complexity and difficulty in availability of access via the pathways which suffer from severe congestion for both pedestrians and vehicles. Also, the lack of isolation in the network of movement between pedestrians and vehicles resulted in a lot of accidents, thus a sense of comfort in the streets of the city became less. The other problems, such as the using of extraneous and strange building materials in modern

buildings, have negatively impacted the physical and contextual environment of the city (Kharuffa and Bashi, 2013).

Mustafa (2013) explained some problems of Mosul's scenario. He confirms that Mosul City has suffered from the lack of thoughtful maintenance, causing the demise of many of its ancient monuments, besides the repulsion of its buildings, lack of feeling secure, and the large number of un-aesthetic, undesirable scenes. He also mentioned that the presence of negligence and the destruction of what remains of landmarks, such as buildings, has led to the collapse of the traditional environment in Mosul City Centre.

The narrowness of street pavements in Mosul City Centre, which is caused by the display of the goods on the sidewalk either by stall owners or shop owners, has led to the loss of the pavements' features in people's perception, thus pavements or sidewalks of the street lose their role as one of the landscape features which make the street recognisable (Al-Janabi, 2013). Furthermore, the illegibility of the pavement and its narrowness force street users to leave the pavement and use the street for walking. This issue creates an uncomfortable environment for street users. Meanwhile, the street user faces difficulty for access when he wants to pass by or shop to (Al-Janabi, 2013).

Occupied areas in front of shops and stalls, the lack of parking area, and mixing traffic movements with pedestrian movement all create an annoying feeling to everyone who uses the street, such as feeling of being upset, fatigue and exhaustion. New buildings and their front facades in the streets do not emphasise the character of Mosul City. Some have changed the physical appearance by the use of different materials and colours. Moreover, random signs and billboards on the building facades reduce the significance of these facades in enhancing the character of Mosul City, making it difficult to notice (Jawad, 2011; Haider, 2012).

### **1.2.2 Problems Related to Functional Characteristics of the Streets**

#### **a) Global Issues**

Sammas (2008) quoted from Jacobs (1961), recognised the role of streets as communication spaces, public spaces, places of social and commercial encounters and exchanges, places to do business, political spaces and symbolic and ceremonial spaces in the city. Nowadays, one of the main reasons is that narrow streets accommodate old buildings, which as a result creates traffic congestion. For this reason the street expansion policy has been introduced (Ja'afar et al., 2012). Moreover, streets are the fundamental public space in every city, the lifeblood of social and economic exchange. Yet today, more and more streets are simply choked with car traffic vying for space with pedestrians and bicyclists. (PPS, 2012, pp.7). This means that priority is given to the function of the streets as a channel of movement for motor vehicles. The destruction of flats and the transfer of residents have given a negative impact to street life (Ja'afar et al., 2012). The simple activities such as walking, talking and eating have been confined to parks, restaurants, and public buildings. This makes the street an uninteresting space (Sammas, 2008).

#### **b) Local Issues**

Al-Sa'adon and Al-Mosawi (2012) justified that the deterioration of Iraq's urban centres in terms of their character and identity resulted from the dramatic increase in commercial roles compared with their social and cultural roles. This issue led to the creation of new commercial buildings with poor facades that do not reflect the urban characteristics of these cities. Al-Ta'ay and Al-Azawi (2013) mentioned that the old city of Mosul has a big functional importance as it provides housing for a large number of the population, as well as it contains many commercial markets. This issue led to the migration of businesses from its central location in the old focus to new locations where accessibility for people is easily flexible (Al-Janabi, 2013). At the same time, Nineveh Street has a central location in Mosul City, thus it is expected to be a crowded street for the movement from one place to another using

various types of transportation such as cars, buses, and carts (Al-Janabi, 2013). With the development of the transportation modes, streets of Mosul City could not accommodate the large numbers of cars. As a result, the city streets have become pathways for cars creating traffic jams. Thus, the city has suffered from the loss of the local identity and character instead of enhancing harmony and originality (Muzahim, 2013).

In addition, Sadek (2012) mentioned regarding Nineveh Street that the presence of adjacent shops and stalls contradictory to each other in the kind of goods they sell, such as shops selling detergents and pesticides in front of grocery and fish carts in the Al-Maidan area, made this area an undesirable area for walking, leisure or sightseeing activities. This is because of its odorous smell and uncleanness, thus this issue reduces the importance of the Street as a social space.

### **1.3 Main and Subsidiary Research Questions**

What are the roles of Nineveh Street in giving the sense of place to Mosul City Centre in Iraq?

The subsidiary questions are as follows:

1. What are the roles of the physical characteristics of Nineveh Street in giving the sense of place in Mosul City Centre?
2. What are the roles of the functional characteristics of Nineveh Street in giving the sense of place in Mosul City Centre?

### **1.4 Research Aim**

To establish the role of Nineveh Street in giving the sense of place to Mosul City Centre in Iraq.

## **1.5 Research Objectives**

1. To identify the role of Nineveh Street in terms of physical characteristics in giving a sense of place to Mosul City Centre.
2. To identify the role of Nineveh Street in terms of functional characteristics in giving a sense of place to Mosul City Centre.

## **1.6 Methodology**

This research depends on two types of techniques, quantitative and qualitative techniques respectively. These types of methods are determined by many factors, namely the nature of research, research objectives, research questions and methodology used in previous research. The role of the research questions and objectives is to establish the limitations on what will be studied next (Charmaz, 2006). Thus, data collection techniques used in this research is to establish the aim of research, which is to establish the role of Nineveh Street in giving the sense of place to Mosul City in Iraq.

The first stage of techniques used was a questionnaire survey as a quantitative method to identify two features and qualities of Nineveh Street, namely physical characteristics and functional characteristics. In this case, the quantitative method used the 330 questionnaire surveys technique, based on 5.5% sampling error at 95% confidence level, which are employed by many considerable researchers (Shuhana 1997; Hilmilia 2005; Alford, 2011; Ja'afar, 2006; Ja'afar and Usman, 2009; Ja'afar, et al., 2012; Ujang and Dola, 2007; Ujang, 2011). After that, these qualities were re-measured using the qualitative method which included 30 semi-structured interviews, direct observations as in many previous studies (Ja'afar and Usman, 2009; Ja'afar, et al., 2012) and photos.

Table 1.1 Research methodology used in the study

Research questions	Research objectives	Technique	Method
What are the roles of the physical characteristics of Nineveh Street in giving the sense of place in Mosul City Centre?	To identify the role of Nineveh Street in terms of physical characteristics in giving a sense of place to Mosul City Centre.	Questionnaire	Quantitative
		Direct observation	Qualitative
What are the roles of the functional characteristics of Nineveh Street in giving the sense of place in Mosul City Centre?	To identify the role of Nineveh Street in terms of functional characteristics in giving a sense of place to Mosul City Centre.	Semi-structured interviews	Qualitative
		Questionnaire	Quantitative
		Direct observation	Qualitative
		Semi-structured interviews	Qualitative

For questionnaire design based on reference to the previous research of Dolbani (2000) quoted from Ujang (2011), the targeted population for this study was the static and mobile users. Static users comprise shop-owners, shopkeepers, vendors, office workers, residents, and students. Mobile users comprise shoppers and visitors. Meanwhile, this study used the approach of "non-probability sampling" of "Time-interval and Cluster Sampling" (cluster sample interval), as did Hilmilia (2005) and Ja'afar (2006). In non-probability sampling, the researcher chooses the sample based on who they think would be appropriate for the study (Joseph Castillo, 2009).

## 1.7 Research Assumptions

This study proposes the assumptions following:

- i. The strategic location of Nineveh Street plays a significant role in making the street accessible.
- ii. The Old Bridge as a non-building element has an influential role in recognising the street and in enhancing the sense of place.

- iii. The lack of the role of physical characteristics in providing safety and comfort has a negative effect on reducing the influence of sense of place in the street.
- iv. Physical appearance, especially buildings, and the quality of views needs to be improved to increase the influence of sense of place in the street.
- v. Nineveh Street has a stronger role as a commercial space and as a channel of movement compared to the cultural and social space in relating to the sense of place.

### **1.8 Significance of the Study**

The following section discusses the significance of this research to environmental studies.

- i. Within environmental studies and urban design, there are no previous studies focusing on the sense of place in relation to the characteristics of Nineveh Street in the context of Mosul City. Thus, there is a gap of knowledge in the role of Nineveh Street in terms of physical and functional characteristics in creating the sense of place in Mosul City.
- ii. This study strengthens the knowledge of urban character and identity in the Iraqi context by integrating the street features in defining the distinction of local place character.
- iii. This study is significant in further informing the character and uniqueness of Mosul City. Users' identification of the attributes and characteristics that strongly influence sense of place provides a framework and guideline in securing the city's sense of place.
- iv. This study is significant in preventing the loss of street characteristics that encourage users to visit, pass by and work.

- v. Studying the sense of place can enhance the value and the role of streets as the core of mixed-use activities, thus benefitting the tourism industry and economy of the place.
- vi. This research is important in elevating the quality of life and the well-being of the people who are attached to the street. This issue will raise awareness among people to sustain their place and make them reject any form of urban intervention which threatens their sense of place in the street.
- vii. Nowadays, many considerable conferences and interviews are conducted by architects, planners, psychologists and sociologists for developing and renewing Mosul City. Thus, this research creates a framework to help them to understand the role of Nineveh Street based on physical characteristics, and functional characteristics in contributing to the sense of place.

## **1.9 The Study Area and Justifications**

Nineveh Street has been selected as the setting of the investigation of this study. It was chosen based on the physical, and functional characteristics that represent the character of Mosul City Centre after the first decade of the last century, which emerged after the British occupation of Mosul City, when the process of planning and architectural transformation occurred in these areas (see Figure 1.1). Simultaneously, this street shares the following characteristics:

- a. It is located within the main commercial/shopping district of the City Centre.
- b. It is located in the core of Mosul City within a diversity of activities.
- c. It is identifiable as the main street and is well known as a popular shopping street.
- d. It receives the highest concentration of pedestrians, shoppers and visitors.
- e. It is located within an inherent socio-cultural stronghold.
- f. It is established according to constructivism rules which somewhat limited irregular construction in that period.

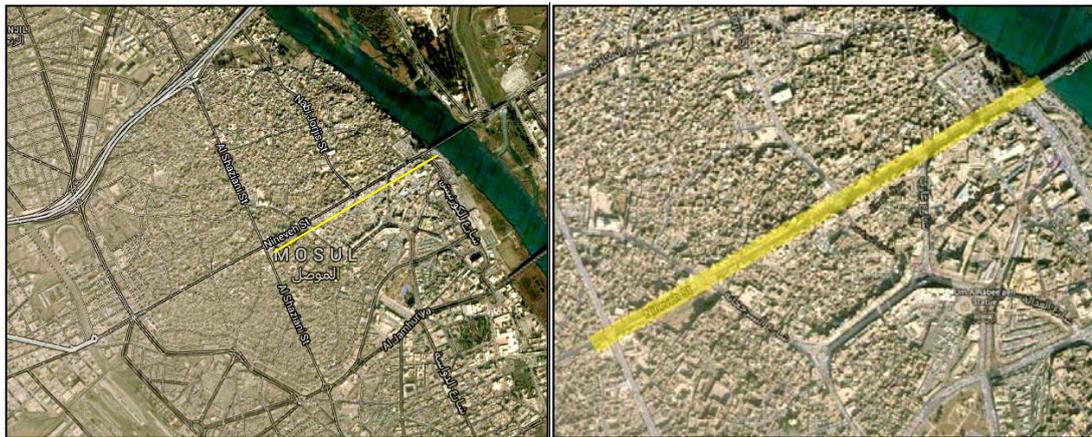


Figure 1.1: Top view of case study area, Source: Google earth.

### 1.10 Research Scope

The scope of the research was limited to several aspects. Firstly, the study area only focused on Nineveh Street in Mosul City Centre, Iraq. Nineveh Street is located within the main commercial district in Mosul City Centre. This Street is the first modern commercial street that emerged after the British occupation of Mosul City, where the process of planning and architectural transformation occurred in Mosul City Centre. It receives the highest concentration of pedestrians, shoppers and visitors among many City Centre streets. The selection of this street is arises from the many in-depth conferences and seminars on the renewal and revitalisation of Mosul City Centre. Besides that, Mosul City Centre is selected for this case study because it is the oldest area which reflects the character and identity of Mosul City. It is the city where historical values and architectural significance exists. Mosul City Centre has a high concentration of people who are working, shopping, visiting, and living. All the above-mentioned criteria elaborated the reasons for selecting the case study.

Secondly, the users within Nineveh Street in Mosul City Centre have been identified as the respondents to this research. According to Ja'afar et al. (2012), Shamsuddin and Ujang (2008) and Ujang (2008), there are two types of street users, namely mobile users and static users who use the City Centre streets. A mobile user is known as a visitor. Static users are residents, shop owners, shopkeepers, vendors and office workers. The purpose of selecting both types of street users is because

every type of user has a different perception and cognition to the city which is important in order to understand the place character. Thus, the research objectives were identified through examining users' perception and cognition of Nineveh Street.

Thirdly, according to previous studies, there are many definitions of the sense of place and many methods to measure it. This research studies the role of physical and functional characteristics as a method to measure the impact of sense of place. Sense of place is defined as the qualities that differentiate between one street and another (Shamsuddin and Ujang, 2008). Thus, the research seeks to answer the research objectives and achieves the aim of this study.

Lastly, according to the title of the research, the word "role" means a function or the degree to which someone or something is involved in a situation or an activity and the effect that they have on it (Oxford, 2012). This research focuses on the role of two issues. The first one focused on the role of the physical characteristics of Nineveh Street. According to the literature review, building, and non-building elements and structures (physical appearance), location, and the quality of view are the physical characteristics of Nineveh Street. The first characteristic, building, and non-building elements including hard and soft landscape and structures like bridges play an important role in the legibility of the street, but the non-building elements also play a significant role in making a safe and comfortable environment on the street. The second characteristic, location of the street, contributes in making the street accessible. The third characteristic, the quality of views, has an appreciated role in making the street visible and oriented. The second issue focused on the role of the functional characteristics of Nineveh Street. According to previous studies, in terms of function, streets play four roles to be considered, which are as a channel of movement, as a commercial street, as a social space, and as a cultural space. Hence, the roles of physical and functional characteristics in this research represent the qualities of the street that differentiate between one street and another, and as a result they give the sense of place.

### 1.11 The Structure of Thesis

The thesis is divided into four parts consisting of seven chapters. The following describes the structure of the thesis:

**Part 1:** Understanding the research subject and establishing a conceptual framework and the methodological approaches and strategies (Chapter 1 to Chapter 3).

Chapter 1 presents the overall structure of the research describing the background of the study, the issues, research questions and objectives, scope and limitation of the research, and the significance of the research to urban design knowledge and practice.

Chapter 2 presents a review of literature relating to the research topic, and the definitions and concepts of public spaces, streets, commercial streets, sense of place, and the role of street characteristics. It also addresses the current body of knowledge of the main roles of functional and physical characteristics of Nineveh Street.

Chapter 3 describes the methodology of the research and appropriate strategies to collect relevant data. It discusses the approach of the methodology, the scope of the research and the research processes which determines the appropriate research design and the way the investigation was structured.

**Part two:** Understanding context and identifying the role of Nineveh Street in giving the sense of place.

Chapter 4 presents the introduction of the study area (Nineveh Street).

Chapter 5 analyses and discusses data on the role of the physical characteristics of Nineveh Street in contributing to the sense of place.

Chapter 6 analyses and discusses data on the role of the functional characteristics of Nineveh Street in contributing to the sense of place.

**Part three:** Summary and recommendations

Chapter 7 is the final chapter and presents the Summary of the research, including the main two findings of the research which answer the two objectives of the research. The first finding answers the first objective, which is to identify the role of Nineveh Street in terms of physical characteristics in giving a sense of place in Mosul City. The second finding answers the second objective, which is to identify the role of Nineveh Street in terms of functional characteristics in giving a sense of place in Mosul City. Moreover, this chapter also presents the planning and urban design implications of the findings.

## REFERENCES

- Abbas, S. S. (2008). The Change of Genotype in Old Traditional Areas in Baghdad City: Analytical Study Using Geographic Information System. *The Iraqi Journal of Architecture*. Volume: 4B Issue: 14-15, p.172-197
- Abbaszadeh, F. A. (2011). *Characterization of Physical Elements of Street Design*. Unpublished PhD thesis. Universiti Teknologi Malaysia, Skudai.
- Agustin, E., Santosa, H. R., and Soemardiono, B. (2014). The Application of Sustainable Urban Street Concept in A.Yani Surabaya Street Corridor Arrangement to Improve the Quality of Corridor Environment. *International Journal of Education and Research*. Vol. 2 No. 2, p.1-16
- Ahmadi, V., Che-Ani, A. I., Farkisch, H., and Surat, M. (2011). The Identity of Open Space: Adapting from the Model of Traditional Neighborhood Center. *Journal Design and Built*. 4(2011), p.74-84
- Al-Akaam, A. C. M., and Al-Ani E. W. (2009). The Impact of Ecological Fields in Urban Design and Planning of Iraqi Cities. *Journal of Damascus University for Engineering Science*. 25 (1), p.443-486
- Al-Allaf, E. H. I. (2014, 21 February). *The Contemporary Scenes of the Constructional Landscape of Arabian Cities: Mosul as an Example*. Retrieved on July 4, 2014, from <http://www.baytalmosul.com/15751604158316031578160815851593160515751583-1607157516061610-1575158716051575159316101604157516041593160415751601/1>
- Al-Ani, M. Q. A. G. (2012). Urban Types and Transformation of the City. Schrenk, M., Popovich, V. V., Zeile, P., Elisei, P. (Eds.). *Proceedings Real Corp 2012 Tagungsband in Re-Mixing the City Towards Sustainability and Resilience?* Multiversum Schwechat, Austria. pp. 1041-1054.
- Al-Asad, M. (2010, 02 December). *City Components*. Retrieved on Feb. 15, 2013 from <http://m.jordantimes.com/news/features/city-components>

- Al-Dewaji, M. H. D. (1989). *Urban renewal of the markets of Old Mosul: Planning study methods in maintaining the old commercial centres and developing Iraqi cities*. Unpublished Master Thesis. Mosul University, Iraq.
- Alfrey, J. (2010). Discovering places: studying urban character. *Conference on Exploring the Character of Towns*. 19 March, 2010, Wales. pp.15-24
- Al-Hamawi, Y. (1957). *The Lexicon of countries*. 5th edition. Beirut Press, Lebanon.
- Al-Janabi, H. K. (1982). *The internal structure of Old Mosul City*. Mosul University Press.
- Al-Jameel, A. H. S., and Al-Nu'man, R. S. A. (2007). The Impact of Break Through Streets on Changing The Spatial Configuration Of Old Mosul. *AL-Rafdain Engineering Journal*. vol, 15 (3), pp. 78-91.
- Al-Khateeb, Y. A. (1955). *Al-Monia Writers in the Mosul History*. Al-Hadaf Press, Mosul.
- Al-Musili, S. A. (1923). *The Mosul History*. Al-Salafiah Press, Egypt.
- Askari, A. H., and Dola, K. B. (2009). Influence of Building Façade Visual Elements on its Historical Image: Case of Kuala Lumpur city, Malaysia. *Design and Built Environment*. 5(December), pp.49–59
- Askari, A. H., Dola, K., and Soltani, S. (2014). An evaluation of the elements and characteristics of historical building façades in the context of Malaysia. *Macmillan Publishers Ltd*. Vol. 19, 2, 113–124.
- Al- Badrani, S. T., (2008). *The Transformations of Architectural Identity in the Urban Environment: Analytical Study for Cultural Resistance Mechanism in Commercial Streets for Mosul City*. Unpublished PHD Thesis. Baghdad University
- Al-Dewachi, M. H., Abdullah, H. S., and Jalal, A. W. (2010). The Effect of Morphological Changes in Urban Fabric on its Syntactical Properties -A Case Study in Mosul Old Suq-. *Al-Rafidain Engineering Journal, Mosul University*. 1(20), p.1- 15
- Al-Janabi, S. (2013, May 13). *Nineveh Street in Mosul: its functional importance and future*. The Iraqis news agency. Retrieved on July 15, 2013, from [http://iraqyoon.net/articles/news\\_details.php?details=459](http://iraqyoon.net/articles/news_details.php?details=459)
- Al-Kodmany, K. (2011). Placemaking with tall buildings. *Macmillan Publishers Ltd*. Vol. (16), 4. p. 252-269.

- Al-Nuami, A. W., (2012). Nineveh Street: The Master of Mosul Streets. Al-Nuami, A. W. (Ed.). *Mosul City: cultural and heritage Illuminations*. Baghdad: House of Books and Documents. 256-260
- Al-Sa'adon, A. A. D., and Al-Mosawi, S. K. A. (2012). Consideration of Planning and Design for Old and Historical Arabic Cities: Case Study: Karbala City. *Journal of Faculty of Education, Wasit*. 10 (308-328).
- Al-Talib, T. H., and Fakruddin, H. S., (2013). Critical Evaluation of City Streets. *Journal of Engineering*. 19(2), p. 19-44.
- Al- Ta'ay, F. A. C., and Al-Azawi, A. A. F. (2013). Planning Determinants Of Old Mosul City. *The 2th Engineering Conference of the Golden Ubeel*. Mosul University.
- Appleyard D. (1981). *Livable Streets*. United States of America, University of California Press, Ltd.
- Appleyard, D. (1979). Why Buildings are Known. *Environment and Behaviour*, 1 (3), 131-156.
- Babbie, E. (2014). *The Basic of Social Research*. (6th edition). Canada. Wadsworth, Cengage Learning.
- Babbie, E. (2013). *The Practice of Social Research*. (13th edition). Canada. Wadsworth, Cengage Learning.
- Babbie, E. (2011). *The Basic of Social Research*. (5th edition). Canada. Wadsworth, Cengage Learning.
- Baghi, M. H., (2011). *Relationship Between Physical Conditions on Public Realm and Outdoor Activities to Create Vibrant Streets*. Unpublished PHD thesis. Universiti Teknologi Malaysia
- Balage, P. (1994). Good City Form and its Manifestation Through Building Design: A Case Study of Colombo. *SLA Journal*. 101 (11), p.33-41.
- Baper, S. Y., and Hassan, A. S. (2012). Factors Affecting the Continuity of Architectural Identity. *American Transactions on Engineering & Applied Sciences*. 1(3): 227–236.
- Barker, J. F. (1979). Designing for a Sense of Place in Mississippi Small Towns. Prenshaw, P. W. and McKee, J. O. (Eds). *Sense of Place: Mississippi*. pp:162-178. University Press of Mississippi.

- Barter, P. (2009). Earning a Public Space Dividend in the Streets. Tan, A., Sun, G., Krummert, K., Ely, M., and Goh, A. (Eds.). *JOURNEYS: Sharing Urban Transport Solutions*. Singapore. LTA Academy, pp. 32-40
- Barksdale, E., Carter, T., DeVeau, Z., Forbes, C., Masters, K., Nichols, B., Sookhoo, C., Walker, R., and Willinger, M. (2011). *South Monroe/Adams Corridor: Creating a Sense of Place*. FSU Department of Urban and Regional Planning, Florida
- Bashri, A., and Shamsuddin, S. (1998). The Role of Urban Design in The 21<sup>st</sup> Century Malaysia. *Journal Alam Bina: Urbanisme*. 1(1), pp.18-22.
- Beidler, K. J. (2007). *Sense of Place and New Urbanism: Towards a Holistic Understanding of Place and Form*. Unpublished PhD Dissertation. Virginia Polytechnic Institute and State University.
- Better Market Street (2011). *Existing Conditions and Best Practices; Part One: Existing Conditions*. Perkins and Will Consultant Team (Eds.) <http://www.bettermarketstreetsf.org/about-reports-existing-conditions.html>
- Benfield, K. (2013, July 17). *Streets Can Be Public Spaces Too*. CityLab. Retrieved on January 7, 2014, from <http://www.citylab.com/design/2013/07/streets-can-be-public-spaces-too/6235/>
- Birkeland, I. (2008). Cultural sustainability: Industrialism, placelessness and the reanimation of place. *Ethics, Place & Environment*, 11, 283–297.
- CABE (2008). *Delivering Great Places to Live: 20 Questions you Need to Answer; Building for Life*. Seacourt Ltd. London
- Cadw (2013). *Successful Places: A Guide to Sustainable Housing Layout and Design*. (1st ed.). Crown, UK.
- Calcatinge, A. (2012). *The Need for a Cultural Landscape Theory: An Architect's Approach*. LIT Verlag Münster.
- Canter D. (1975). *An Introduction to Environmental Psychology in Environmental Interaction*. Robert Mac LeHose and Company Limited Printers to the University of Glasgow.
- Carmona, M., Tiesdell, S., Heath, T., and Oc, T. (2003). *Public spaces-urban spaces: The dimensions of urban design*. Architecture Press.

- Casakin, H., and Omer, I. (2008). What Features and Structural Relationships Make the Streets of Tel Aviv City Being a Legible? An Urban Design Perspective. *From Negations to Negotiations*. 375-390
- Celik, Z., Favro, D., and Ingersoll, R. (1994). *Streets: Critical Perspectives on Public Space*. University of California Press. pp.1-9.
- Chambers, W. (2011). Changing the Conversation: from Building Heights to Place Making. *Great Streets San Diego*. p. 1-3.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. Sage Publications: London and New Delhi, p.41-51.
- Chiazzari, S. (1998). Colour Scents : Healing With Colour and Aroma. *Random House*.
- Chen, C. H., and Chiu, M. L. (2006). SCALE A Street Case Library for Environmental Design with Agent Interfaces. Jos P. van Leeuwen and Harry J.P. Timmermans (eds.). *Innovations in Design & Decision Support Systems in Architecture and Urban Planning*. Netherlands: Springer. 137-150.
- City Council (2003). *West Side Plan*. Farmers Branch.
- Cizler, J. (2012). Urban regeneration effects on industrial heritage and local community – Case study: Leeds, UK. *Sociologija I Prostor*, 50 (2012), 193 (2), pp. 223-236.
- Crisman, P. (2007). Materials Whole Building Design Guide. *National Institute of Building Sciences*.
- Crankshaw, N. (2009). *Creating Vibrant Public Spaces; Streetscape Design in Commercial and Historic Districts.*, Island press.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five traditions*. (2nd Ed). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. (2nd edition). USA. Sage Publications.
- Crook, J. M. (1987). *The Dilemma of Style*. Chicago: University of Chicago Press.
- Cross, J. E., Keske, C. M. H., Lacy, M. G., Hoag, D. L. K. & Bastian, C. T. (2011). Adoption of conservation easements among agricultural landowners in Colorado and Wyoming: The role of economic dependence and sense of place. *Landscape and Urban Planning*, 101(1), 75–83.
- Cullen G, (1985). *Concise Townscape*. Great Britain: The Architectural Press.

- DePriest, L. R. (2010). *Gauging and Articulating Sense of Place in Downtown Revitalization: the Case Study of Middletown, Ohio*. Unpublished Master Thesis. Miami University, Oxford.
- De Vaus, D. (2014). *Surveys in Social Research*. (6th edition). Routledge.
- Dolbani Mijan (2000). *Responsive Public Open Space In The City Centre Of Kuala Lumpur*. Unpublished PhD Thesis. Oxford Brookes University, England.
- Donnelley, RR (2010). *Designing Streets: A Policy Statement for Scotland*. Crown.
- Eichner and Tobey (1987). In Moudon, A. V. (ed). *Public Streets for Public Use*. Van Nostrand Reinhold Company Inc., New York.
- Ercan, Z. M. A. (2007). Public Spaces of Post-Industrial Cities and their Changing Roles (1). *METU JFA*. (24:1) 115-137
- European Union (2011). *City of Tomorrow: Challenges, visions, ways forward*. Publications Office of the European Union.
- Ewing, R. (2013). *Eight Qualities of Pedestrian- and Transit-Oriented Design*. *Urban Land: The Magazine of the Urban Land Institute*. Retrieved on Dec. 20, 2013 from <http://urbanland.uli.org/capital-markets/eight-qualities-of-pedestrian-and-transit-oriented-design/>
- Ewing, R., Clemente, O., Handy, S., Brownson, R. C., and Winston, E. (2005). *Final Report in Identifying and Measuring Urban Design Qualities Related to Walkability*. Robert Wood Johnson Foundation. USA
- Farkisch, H., Che-Ani, A. I., Ahmadi, V., Surat, M., Tahir, M. M. (2011). Sense of Community Through Neighborhood Center. *Journal Design and Built*. 4 (2011), pp. 23- 31.
- FEMA (Federal Emergency Management Agency of the U. S. Department of Homeland Security) (2010). *Earthquake-Resistant Design Concepts: An Introduction to the NEHRP Recommended Seismic Provisions for New Buildings and Other Structures*. Godden Collection, NISEE, University of California, Berkeley, pp.49
- Fernando, N. A. (2007). Open-Ended Space: Urban Streets in Different Cultural Contexts. Frank, K. A., and Stevens, Q. (Eds). *Loose Space: Possibility and Diversity in Urban Life*. London and New York: Routledge, pp. 54-72
- Fisher, Bell, and Baum (1984). *Environmental Psychology*. (2<sup>nd</sup> ed.). CBS College Publishing.

- Fisher, K. D. (2009). Placing Social Interaction: An Integrative Approach to Analyzing Past Built Environments. *Journal of Anthropological Archaeology*. 28 (4). pp. 439–457.
- Fullerton, K. R. (2011). *Street Performers and the Sense of Place: A Case Study of Third Street Promenade Shopping Center, Santa Monica, California*. Unpublished Master's Thesis. California State University, Long Beach.
- Gehl, J. (1987). *Life Between Buildings: Using Public Space*. Van Nostrand Reinhold, New York.
- Gehl, J. (2002). *Public Spaces and Public Life City of Adelaide 2002*. Gehl Architects Aps. Copenhagen, Denmark
- Goody, B. (1974). *Image of Place Essay on Environmental Perception, Communication and Education*. Birmingham Centre for Urban and Regional Studies, University of Birmingham.
- Goodey B. (1973). *Perception of Environment: An Introduction To The Literature*. 1971 Centre for Urban And Regional Studies. The University of Birmingham.
- Gorock, B. (2004). *Streetscape Design Manual*. Nottingham City Centre, City of Nottingham.
- Government of South Australia (2012). *Street for People: Compendium for South Australian Practice*. Adelaide, Government of South Australia. Retrieved on April 5, 2013, from [http://saactivelivingcoalition.com.au/wpcontent/uploads/16649%20StreetforPeopleCompendium\\_full.pdf](http://saactivelivingcoalition.com.au/wpcontent/uploads/16649%20StreetforPeopleCompendium_full.pdf)
- Grabler, F., Agrawala, M., Sumner, R. W., and Pauly, M. (2008). Automatic Generation of Tourist Maps. *Geometry Group, ETH Zurich*. University of California, Berkeley.
- Gray, D. E. (2014). *Doing Research in the Real World*. (4th ed). British, SAGE publication.
- Haider, A. (2011). The role of Investment in the Areas of the Old Mosul City. *Journal of Investors*. v (1).
- Haji Bilyamin, S. F. I. (2014). *Factors Influencing the Walkability of Kuala Lumpur City Centre*. Unpublished Master's Thesis. University Technology Malaysia.
- Himilia (2005). *Apek Keselamatan Jalan Dan Kemudahan Pejalan Kaki Di Dalam Pusat Bandar Dr Perspektif Wanita: Kajian Kes Jalan Tuanku Abdul*

- Rahman, Kuala Lumpur.* Fakulti Alam Bina. Malaysia, Universiti Teknologi Malaysia.
- Handy, S.L., Boarnet M. G., Ewing R., and Killingsworth R. E. (2002). How the Built Environment Affects Physical Activity Views from Urban Planning. *American Journal of Preventive Medicine*, 23(02), pp.64-73.
- Harrison, J. D., and Howard, W. A. (1980). The Role of Meaning in the Urban Image. Broadbent G. et al. (Eds.) *Meaning and Behavior in the Built Environment*. New York: John Wiley and Sons, pp.163-182.
- Harris, D. J. (1999). A quantitative Approach to the Assessment of the Environmental Impact of Building Materials. *Building and Environment Journal, Elsevier Science Ltd.* 34(1999), pp.75 I-758.
- Hashem, H., Abbas, Y. S., Akbar, H. A., and Nazgol, B. (2013). Comparison the Concepts of Sense of Place and Attachment to Place in Architectural Studies. *Malaysia Journal of Society and Space.* 9, issue 1 (107 - 117).
- Hassan, A. A. A. R., and Hamid, L. R. (2010). Effect of Furnishing Street Space on Harmony and Consistency of Construction Environment. *Al-Taqani Journal.* 24(3), pp. A102-A119.
- Hoseini, F. S. and Mokhtari, M. (2013). Enhancing Quality of Urban Spaces by Approach of Sense of Place (Case study: Tarbiat Street in Tabriz City). *World Applied Sciences Journal.* 22 (10): 1465-1474.
- Hui, C.W. (2007). *Evaluation of the Façade of Buildings in the Type I Residential Area of the 7th Land Consideration District in Taichung City.* Unpublished Master's Thesis. University of Science and Technology of China.
- ICC (International Code Council) (2003). *2003 International Building Code.* International Code Council, Inc. USA.
- Ittelson W.H., Proshanky H.M., Rivlin L.G., Winkel G.H. (1974). *An Introduction to Environmental Psychology.* Holt, Rinehart And Winston, Inc.
- Ja'afar, N. H. (2006). *Criteria "Success" in the Traditional Way to Attract Visitors: Kuala Lumpur: A Case Study.* Unpublished Master Thesis. Universiti Teknologi Malaysia, Skudi.
- Ja'afar, N. H. and Usman, I. M. S. (2009). Physical and Transportation Elements of Traditional Street in Malaysia. *European Journal of Social Sciences.* Volume 9 (4), p.669- 676.

- Ja'afar, N. H., Usman, I. M. S., and Tahir, M. M. (2008). Elements of Activities in Traditional Street in Malaysia for Attraction: A Case Study of Kuala Lumpur. *Journal of Design and Built*. Volume (1), p.15-20.
- Ja'afar, N. H., Sulaiman, A. B., and Shamsuddin, S. (2013). Landscape Features and Traditional Streets Character in Malaysia. *Asian Journal Of Environment-Behaviour Studies*, Universiti Teknologi MARA, Malaysia. Vol. (4), 13, p.81-95
- Ja'afar, N. H., and Sulaiman, A. B. and Shamsuddin, S. (2012). Traditional Street Activities in Kuala Lumpur City centre. *International Journal of Multidisciplinary Thoughts*. Volume 2 (1), p. 93-105.
- Ja'afar, N. H., and Sulaiman, A. B. and Shamsuddin, S. (2011). The Contribution of Landscape Features on Traditional Streets In Malaysia. *ASEAN Conference on Environment-Behaviour Studies*. 16-18 July 2012. Bangkok, Thailand p. 2-15.
- Jacobs, A. B. Y. (1995). *Another Look at Boulevards. Places, A Forum of Environmental Design*. Macdonald.
- Jacobs, A. B. (1993). *Great Streets*. Cambridge. MS, MIT Press.
- Jacob, J. (1961). *The death and life of great American cities: The Failure of Modern Town Planning*. London: Peregrine Books, pp. 155
- Jalaladdini, S., and Oktay, D. (2012). Urban Public Spaces and Vitality: A Socio-Spatial Analysis in the Streets of Cypriot Towns. *Social and Behavioral Sciences*. 35 ( 2012 ) 664 – 674.
- Jawad, S. A. (2011). Change in the Centers of Historical Cities. *Journal of Planner and Development*. V (24), pp. 125-146
- Jazwinski's C. (2002). *Environmental Psychology*. Psychology Department Web Site, St. Cloud State University, unpublished.
- Jiven, G., and Larkham, P. J. (2003). Sense of Place, Authenticity and Character: A Commentary. *Journal of Urban Design*, Vol. 8(1), p. 67–81.
- Jorgensen, B. S., And Stedman, R. C. (2001). Sense of Place as an Attitude: Lakeshore Owners Attitudes Toward their Properties. *Journal of Environmental Psychology*. 21, 233-248.
- Jorgensen, B. & Stedman, R. (2006). A comparative analysis of predictors of sense of place dimensions: Attachment to, dependence on and identification with lakeshore properties. *Journal of Environment Management*, 79, 316–327.

- Kajtazi, B. (2007). *Measuring Multifunctionality of Urban Area*. Unpublished Master's Thesis. International Institute for Geo-Information Science and Earth Observation Enschede, the Netherlands.
- Kaymaz, I. (2013). Urban Landscapes and Identity. *Intech*. p.739-760
- Khalil, I. A. (2013). About the Renewal of Life in the Arteries of Heritage Mosul City: Notes and Suggestions. *Mosuliat Journal*. Mosul University. 44(6-11).
- Kharofa, H. O., and Bashi, L. N. Q. (2013). Urban and Traditional Environment of Mosul City: Present Problems and Future Prospects. *Seminar about towards Urban City*. University of Mosul
- Khirfan, L. (2010). Traditional Urban Landscapes in Jordan: between cultural intimacy and mass mediation. Proceedings of the Twelfth Conference of the International Association for the Study of Traditional Environments. *IASTE*. 238, pp. 76.
- Koseoglu, E., and Onder, D. E. (2011). Subjective and Objective Dimensions of Spatial Legibility. *ScienceDirect*. 20 (2011), 1191-1195.
- Krier, R. (1979). *Urban Space*. Rizzolli International Publication, Inc.
- Krupat, E. (1985). *People in Cities: The Urban Environment and its Effects*. Cambridge University Press.
- Kudur, A. A. M. (2013). Palinode on the Article: the Renewal of Life in the Arteries of Heritage Mosul City: Notes and Suggestions. *Mosuliat Journal*. Mosul University. 45(56-59).
- Kumar, P. (2007). *The Value of Design A Study of Pedestrian Perception in New Delhi, India*. Unpublished PhD thesis. Queen's University, Kingston, Ontario, Canada.
- Kumar, R. (2014). *Research Methodology: a Step-by-Step Guide for Beginners*. (4th edition). Chennai, India. Sage Publications.
- Lai, L. Y., Sais, I, and Kubota, A. (2013). The Roles of Cultural Spaces in Malaysia's Historic Towns: The case of Kuala Dungun and Taiping. *Social and Behavioral Sciences*. 85 ( 2013 ) 602 – 625
- Lamit, H. (2004). Redefining Landmarks. *Alam Bina Journal*, vol, 6 (1).
- Lancaster, M. (1984). *Britain in View*. London. Quiller Press.
- Lasocki, M. (2009). The Landscape of a Public Realm in the Future City. *Ul. Karowa* 20, 00-324 Warszawa, Poland.

- Lauderdale, F. (2007). *Design guidelines: Fort Lauderdale Building: A livable Downtown*. Florida.
- Lee T. (1976). *Psychology and the Environment*. Peter Herriot (ed.). Methuen & Co Ltd. New Fetter Lane, London EC4P 4EE.
- Lewicka, M. (2008). Place Attachment, Place Identity, and Place Memory: Restoring the Forgotten City Past. *Journal of Environmental Psychology*. 28 (2008) 209–231.
- Lewicka, M. (2010). Place attachment: How Far Have we Come in the Last 40 Years? *Journal of Environmental Psychology*. In Press, Accepted Manuscript.
- Litman (2010). Economic Value of Walkability, By Victoria Transport Policy Institute. *Evaluating Accessibility for Transportation Planning*, 23 March, 2010.
- London Borough of Croydon (2009). *Landscape Design; Supplementary Planning Guidance No. 12*, London Borough of Croydon.
- Long, Y., Baran, P. K., and Moore, R. (2007). The Role of Space Syntax in Spatial Cognition: Evidence from Urban China. *Proceedings, 6th International Space Syntax Symposium, İstanbul*. 129(1-6).
- Lynch K. (1990) *City Sense and City Design*, MIT Press, Cambridge.
- Lynch, K. (1981). *A Theory of Good City Form*. Cambridge, MA: The MIT press. pp.118-119
- Lynch, K. (1960). *The Image of the City*. The MIT Press, Cambridge, MA.
- Mahdzar, S. (2003). Sociability Vs. Accessibility: Static Pattern of Uses as New Urban Design Dimension in Measuring the Liveliness of Street Spaces in Urban Spaces. *Proceedings 4th International Space Syntax Symposium London 2003*, pp.101.1- 101.2.
- Martin, Y. (2012). *Visual Impact Assessment for the Proposed Solar Photovoltaic Installation at the Grootvlei Power Station, Mpumalanga Province*. Newtown Landscape Architects cc.
- McClinchey, K. A. (2011). Conceptualizing Sense of Place through Multi-ethnic Narratives at a Multicultural Festival. *Research on the Road to Recovery: Graduate Student Symposium. (TTRA Canada Conference, Quebec City, Quebec)*.
- McCluskey, J. (1992). *Road, Form and Townscape*. Butterworth Architecture. London.

- Mehta, V. (2007). Lively Streets Support Social Behavior. *Journal of Planning Education and Research*, 27(2), p. 165-187.
- Mehta, V. (2009). Sense of Place in Everyday Spaces: Lessons for Urban Design. *Proceedings of the Conference of the Architectural Research Centers Consortium*. 15-18 April, 2009. The University of Texas, San Antonio. pp. 379-386
- Meyer, C., ASLA (2011). Elevating the Sense of Place: The First Impression of Urban Spaces. *Urban Design Newsletter*, 2011. Retrieved on February 15, 2013 from <http://www.asla.org/ppn/default.aspx?FolderID=5199>
- Mohammed, A. A. (2010). *Spatial Conditions for Sustainable Communities : the Case of Informal Settlements in GCR*. Unpublished Master's Thesis. Ain Shams University. Egypt.
- Montgomery, J. (1998). Making a City: Urbanity, Vitality and Urban Design. *Journal of Urban Design*. 3(93-116)
- Moreton Bay Regional Council (2013). *Urban Design Character: 9 Values for Quality Places*. Moreton Bay Regional Council, UK.
- Morgan, D. L. (2014). *Integrating Qualitative and Quantitative Methods A Pragmatic Approach*. USA. Sage Publications.
- Morrish, G., and GM Urban Design and Architecture (2006). *Street Design Guidelines for Landcom Projects*. Anna Petersen and Landcom (eds.). Landcom.
- Mulder, Niels (1978). *Mysticism and Everyday Life in Contemporary Java*. Singapore University Press, Singapore.
- Moughtin, C. (2006). *Urban Design: Street and Square*. London: Architectural Press.
- Moughtin, C. (2003). *Urban Design: Street and Square*. Oxford, Butterworth, Heineman Ltd.
- Mustafa, M. M. (2013). Local Identity of Mosul City in the Urban Design Academic Products. *The 2th Engineering Conference of the Golden Ubeel*. Mosul University. pp. 1-19
- Myers, J.H. (2007, May 20). *The Historic Character of Buildings and Districts*. Retrieved on December 20, 2013, from <http://architecture.about.com/library/blpreservationbrief-siding02.htm>

- Najafi, M. and Shariff, M. K. B. M. (2011). The Concept of Place and Sense of Place in Architectural Studies. *International Journal of Human and Social Sciences*. 6 (3), p. 187- 193
- Naji, A. A. (1986). *Studies in the History of Arabic Islamic Cities*. Al-Basrah, Iraq.
- Nasser, M. (2004). *Theory of Urban Design*. Unpublished Thesis. Mashhad, Iran: Islamic Azad University.
- North Shore City (2009). *Design of Streets; a Reference Handbook for High Quality Streets*, North City Council.
- Omer, I. and Jiang, B. (2008). Topological Qualities of Urban Streets and the Image of the City: A Multi-Perspective Approach. *11th AGILE International Conference on Geographic Information Science 2008*. University of Girona, Spain. pp.1-11.
- Online Oxford Dictionary. Retrieved on October 30 2012, from [http://www.oxforddictionaries.com/us/definition/american\\_english/role?q=role](http://www.oxforddictionaries.com/us/definition/american_english/role?q=role).
- Oregon Planning Institute (OPI) (2011). *Sense of Place: An Approach to Environmental Perception/ Cognition and Place-Making*. Retrieved on Feb. 12, 2013 from [www.stephensplanning.com](http://www.stephensplanning.com)
- Ortiz, M. (2012). *Public Space and Economy: Past, Present and Future (1)*. Urban Times. Retrieved on Jan. 9, 2013 from <https://urbantimes.co/author/marco-ortiz/>
- Oxford Dictionary (2013). Eighth edition. *Oxford University Press*.
- Pakzad (2006). *Urban Design Spaces in Iran (Part II)*. Ministry of Housing and Urban Development, Iran.
- Parfect, M. and Power, G. (1997). Panning for Urban Quality, Urban Design in Towns and Cities. *Routledge*, London.
- Rapoport, A. (1987). Pedestrian Street Use: Culture and Perception. In Moudon, A. V. (ed.). *Public Streets for Public Use*. Van Nostrand Reinhold Company Inc., New York.
- Rapoport A. (1977). *Human Aspect of Urban Form; Towards a Man- Environment Approach to Urban Form and Design*. Pergamon Press. New York, USA.
- Parks, Promenades, and Planning (2011, February 14). *The Image of the City*. Retrieved on April 19, 2014, from <http://urbanwaterfront.blogspot.com/2011/02/image-of-city.html>

- Perdikogianni, I. (2007). From Space to "Place": The Role of Space and Experience in the Construction of "Place". *Proceedings, 6th International Space Syntax Symposium, Istanbul*. 052(1-14)
- Plowright, D. (2011). *Using Mixed Methods: Frameworks for an Integrated Methodology*. India. Sage Publications.
- Popper, A. (2009). *Walking, bicycling & public space on Market street*. San Francisco Planning Department, McGill University, Montreal.
- Project for Public Spaces (PPS) (2004). ([www.pps.org/info/ppsnews/gpgc\\_2004](http://www.pps.org/info/ppsnews/gpgc_2004)).
- Project for Public Spaces (PPS) (2014). *Streets as Places: How Transportation can Create a Sense of Community*. Retrieved on Nov. 1, 2013 from <http://www.pps.org/>
- Project for Public Spaces (PPS) (2008). *Streets as Places: Using Streets to Rebuild Communities*. New York. Project for Public Spaces, Inc ([www.pps.org](http://www.pps.org)).
- Punch, K. F. (2014). *Introduction to Social Research: Quantitative and Qualitative Approaches*. (3th edition). Great Britain. Sage Publications.
- Rastegar, N., Ahmadi, M., and Malek, M. (2014). Factors Affecting the Vitality of Streets in Downtown Johor Bahru City. *Indian J.Sci.Res.* 7 (1): 361-374.
- Rashed-Ali, H., and Roff, S. (2009). Leadership in Architectural Research. *Proceeding of the Conference Architectural Research Centers Consortium*. University of Texas, San Antonio. Lulu Publications.
- Relphs, E. (1972). *Place and Placelessness*. Pion Limited, London.
- Relph, E. (2007). Spirit of Place and Sense of Place in Virtual Realities. *Spring*. 10 (3), p. 17-25
- Re-Streets (2011, June 21-23). *Image and Identity*. Retrieved on July 1, 2013, from <http://www.restreets.org/image-and-identity>
- Re-Streets (2011, June 21-23). *Wayfinding*. Retrieved on July 1, 2013, from <http://www.restreets.org/wayfinding>
- Rimon, A. (1987). The Arabic Capitals: their Building and Construction in the Ottoman Period. *Arabic City*. Al-Kuwait, Vol 25.
- Rudofsky, B. (1969). *Streets for People: A primer for Americans*. Doubleday, New York.
- Sammas, Y. A. A. (2008). *The Role of Active Public Street as Prerequisite for Livable Cities*. Unpublished Master Thesis. Universiti Teknologi Malaysia

- Semken, S., Neakrase, J. J., and Dial, R. E. (2009). Factors That Influence Sense of Place as a Learning Outcome and Assessment Measure of Place-Based Geoscience Teaching. *Electronic Journal of Science Education*. 13(2), pp. 136- 159
- Sepe, M., and Pitt, M. (2014). The characters of place in urban design. Macmillan Publishers Ltd., *URBAN DESIGN International*. 19 (3), pp.215–227.
- Shaftoe, H. (2008). *Convivial Urban Spaces: Creating Effective Public Places*. UK. Earthscan.
- Shamai, S. (1991). Sense of Place: an Empirical Measurement. *Geofmm*. Vol. 22 (3), PP. 347-358.
- Shamai, S., & Ilatov, Z. (2005). Measuring Sense of Place: Methodological aspects. *Tijdschrift voor Economische en Sociale Geografie (TESG)*, 96(5), 467-476.
- Shamsuddin, S., Sulaiman, A. B., and Ja'afar, N. H. (2008). The Traditional Shopping Streets and its Attractions to the Users. Sulaiman, A. B., and Mai, M. M. (eds.). *Urban Design Issues in the Developing World: The Case of Malaysia and Nigeria*. (1st ed.). Kuala Lumpur, Malaysia.
- Shamsuddin, S. (1997). *Identity of Place: A Case Study of Kuantan Town Centre, Malaysia*. Unpublished PhD thesis. University of Nottingham.
- Shamsuddin, S., and Ujang, N. (2008). Making Places: The Role of Attachment in Creating the Sense of Place for traditional Streets in Malaysia. *Elsevier Journal*. 32, p. 399-409.
- Shamsuddin, S., and Sulaiman, A. B. (2002). The Role of Streets in Influencing the Sense of Place of Malaysian Towns and Cities. *Proceeding of Great Asian Streets Symposium: "Public Space 2002". 25-26 July 2002, Singapore*. Centre for Advanced Studies in Architecture (CASA), Department Of Architecture, School of Design and Environment, National University of Singapore, 35-43
- Sholihah, A. B. (2005). *The Role of Informal Street Activities in the Context of Conserving Urban Cultural Entity; Case Study: Maliobro Street, Yogyakarta, Indonesia*. Unpublished Master thesis. Universiti Teknologi Malaysia, Skudi.
- Sivam, A. and Karuppannan, S. (2013). The Role of Streets Within Placemaking in Cross-Cultural Contexts: Case Studies from Adelaide, Australia and Georgetown, Malaysia. *Paper presented at the State of Australian Cities Conference 2013, 26-29 November, Sydney*.

- Shannon, B. (2012). *Lynch, K. (1960): Image of the City*. Retrieved on June 23, 2013, from [http://www.brettany.wordpress.com/2012/08/07/lynch-k-1960-\\_the-image-of-the-city\\_-cambridge-the-mit-press/](http://www.brettany.wordpress.com/2012/08/07/lynch-k-1960-_the-image-of-the-city_-cambridge-the-mit-press/)
- Shinbira, I. A. (2012). Conservation of the Urban Heritage to Conserve the Sense of Place, a Case Study Misurata City, Libya. *2nd International Conference-Workshop on Sustainable Architecture and Urban Design 2012*. 3-5 March, 2012, School of Housing, Building and Planning, Universiti Sains Malaysia, Penang, Malaysia.
- Shinbira, I. A., and Sulaiman, A. B. (2010). Physical Qualities and Activities Patterns Associated with Street's Identity, A Case Study Jalan Tuanku Abdul Rahman- Kuala Lumpur, Malaysia. pp.390-399.
- Shirvani, Hamid (1985). *The Urban Process*. Van Nostrand Reinhold Company, New York.
- Soanes C. (2000). *The Oxford Compact English Dictionary*. Oxford University Press, 2000.
- Soini, K., Vaarala, H., and Pouta, E. (2012). Residents' sense of place and landscape perceptions at the rural–urban interface. *Landscape and Urban Planning, Elsevier*. 104 (2012), pp.124-134.
- South Gloucestershire Council (2013). *Living Streets: A Guide to the Design of Informal Home Zones in New Developments for South Gloucestershire*. South Gloucestershire Council, UK.
- South Dublin County Council (2011). *Adamstown Street Design Guide: South Dublin County Council*, Adamstown.
- Stanley, B. W., Stark, B. L., Johnston, K. L., and Smith, M. E. (2012). *Urban Open Spaces in Historical Perspective: A Transdisciplinary Typology and Analysis*. Bellwether Publishing, Ltd.
- Steel, F. (1981). *The Sense of Place*. CBI Publishing Company, Inc.
- Swilling, M., Sebitosi, B., and Loots, R. (2012). *Sustainable Stellenbosch: Opening Dialogues*. (1st ed). Published by SUN MeDIA Stellenbosch and the Authors.
- Taylor, J. (2012). *Science Research Methodology*. New Castle, USA. Nyx Academics.
- Talen, E. (2008). *Design for Diversity Exploring Socially Mixed Neighborhoods*. (1st ed). *Elsevier*. Oxford, UK.

- The Scottish Government (2010). *A Policy Statement for Scotland Designing Streets*. RR Donnelley. (www.scotland.gov.uk).
- Telford, T. (2007). *Manual for Streets*. Thomas Telford Ltd. The Great Britain.
- Tibbalds, F. (1992). *Making People Friendly Towns-Improving the Public Environment in Towns and Cities*. Longman.
- Tsong, T. B. (2011, March 11). *Public Spaces Urban Environment*. Retrieved on July 20, 2013, from <https://teknologimalaysia.academia.edu/TehBorTsong/Talks>
- Tuan, Y. F. (1974). *Topophilia: a Study of Environmental Perception, Attitudes, and Values*. Englewood Cliffs, NJ: Prentice-Hall.
- Ujang, N. (2014). Place Meaning and Significance of the Traditional Shopping District in the City Centre of Kuala Lumpur, Malaysia. *Archnet-IJAR, International Journal of Architectural Research*. Volume 8 (1),pp.66-77
- Ujang, N. (2010). Place Attachment and Continuity of Urban Place Identity. *Asian Journal of Environment-Behaviour Studies*. pp.61-76
- Ujang, N. (2008). *Place Attachment Towards Shopping District in Kuala Lumpur City Centre*. Unpublished PhD thesis. Universiti Putra Malaysia.
- Ujang, N. and Dola, K. (2007). Linking Activity and Place Attachment Dimensions in Enhancing the Sense of Place. *Alam Cipta, International Journal on Sustainable Tropical Design Research and Practice*. 2 (1). pp. 59-67. ISSN 1823-7231.
- Ujang, N., and Kum, T. L. (2014). Identification of Nodes as Legible Features in the Historical District of Kuala Lumpur, Malaysia. *Australian Journal of Basic and Applied Sciences*.8 (6), pp.96-105.
- Ujang, N. and Shamsuddin, S. (2008). Place Attachment in Relation To Users' Roles in The Main Shopping Streets of Kuala Lumpur. Sulaiman, A. B. and Mai, M. M. (Eds.). *Urban Design Issues in the Developing World, The Case Study in Malaysia and Nigeria*. Malaysia: Universiti Teknologi Malaysia, p. 22-42.
- Ujang, N. and Shamsuddin, S. (2012). The Influence of Legibility on Attachment towards the Shopping Streets of Kuala Lumpur. *Pertanika J. Soc. Sci. & Hum*. Vol. 20 (1), pp. 81-92
- Urban Design Character (2013). *Moreton Bay Regional Council*. <https://www.moretonbay.qld.gov.au/general.aspx?id=72496>

- Urban Design Character (2011). *9 Values for Quality Places*. Moreton Bay Regional Council. <https://www.moretonbay.qld.gov.au/general.aspx?id=91513>
- Van Leeuwen, J.P., and Timmermans, H. J. P. (2006). *Innovations in Design & Decision Support Systems in Architecture and Urban Planning*. Dordrecht, NL: Springer.
- Wardner, P. (2012). Understanding the Role of ‘Sense Of Place’ in Office Location Decisions. *18th Annual Pacific-Rim Real Estate Society Conference, 15-18 January, Adelaide, Australia*, pp.1-13
- Watson, D., Plattus, A., and Shibley, R. (2003). *Time-Saver Standards for Urban Design*. The McGraw-Hill companies, New York.
- Worskett, R. (1970). *The Character of Towns*, London Architectural Press.
- Xinde, L., and Hanwu, Y. (2011). The Facade Form and Commercial Status of the Traditional Commercial Street: Take the Case of Xiangxi Area. *Chinese and Overseas Architecture*. 6(2011), pp. 47-49
- Yadav, C.S. (1987). *Perceptual and Cognitive; Image of the City*. Naurang Rai, Concept Publishing Company H-13, Bali Nagar New Delhi-110015 (India).
- Yin, R. K. (2014). *Case Study Research: Design and Methods*. (5th edition). USA. Sage Publications.