

NEAR EAST UNIVERSITY INSTITUE OF GRADUATE STUDIES DEPARTMENT OF ARCHITECTURE

# THE POTENTIAL OF HISTORICAL STREETS TO BE USED AS PEDESTRIAN DEPENDED COMMERCIAL AND SOCIO-ACTIVE PLACES, ARAB NEIGHBOURHOOD'S STREET IN ERBIL CITY AS A CASE STUDY

M.Sc. THESIS

Shaymaa Jalil IBRAHIM

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**M.Sc. THESIS** 

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#### Approval

We certify that we have read the thesis submitted by Shaymaa Jalil Ibrahim titled "The Potential of Historical Streets to be Used as Pedestrian Depended Commercial and Socio-Active Places, Arab Neighbourhood's Street in Erbil City as a Case Study" and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Applied Sciences.

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### Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Shaymaa Jalil Ibrahim 25/05/2023

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#### Shaymaa Jalil Ibrahim

#### Abstract

# The Potential of Historical Streets to be Used as Pedestrian Depended Commercial and Socio-Active Places, Arab Neighbourhood's Street in Erbil City as a Case Study

Shaymaa Jalil Ibrahim M.Sc., Department of Architecture June, 2023, (151) pages

The expansion of cities from each period transforms the older areas into empty, and neglected places. After a while, they become dark spots of the city, yet they could be rich places of cultural, historical, social, and commercial value. Historical streets are part of these places that animate the activities related to these values. Therefore, the research aimed to propose an urban renewal and development method for the historic streets in the street of Arab neighbourhood, and transforming them to places that are efficient and compatible for human social life needs and demands of tomorrow developments. For this reason, a methodology is conducted to connect the research aims to the result. As a result, the research design divided into three substantial key points which are literature review, analyses and field survey, each key points breakdown into sub-contents, the complete figure designed to orient the research to its goals. Reviewing the concepts of commercial, socio-active, and pedestrian places and their benefits, a proposal is designed for the case study area that supports the recommended strategies for the historical streets. The field survey is contained a number of structured questions directed to the inhabitants and users of the area, it helped in gaining information about their needs, believes and demands. These data helped in creating a proposal design for the case study street that illustrates a set of recommendations. The proposal design located in Arab district that considered as one of the oldest neighbourhoods of Erbil city in Iraq that settled around and underneath the Erbil citadel. Erbil is among the ancient cities on the earth.

*Key Words*: historical street, Erbil city, Arab neighbourhood, commercial place, social place.

#### Özet

# Tarihi Sokakların Yaya Bağımlı Ticari ve Sosyo-Aktif Mekanlar Olarak Kullanılma Potansiyeli, Bir Alan Çalışması Olarak Erbil Şehri Arab Mahallesi Sokağı

Shaymaa Jalil Ibrahim M.Sc., Mimarlık Bölümü Haziran, 2023, (151) sayfa

Kentlerin her dönemde genişlemesi, eski alanları boş ve bakımsız yerlere dönüştürmektedir. Bir süre sonra şehrin karanlık noktaları haline gelirler, ancak kültürel, tarihi, sosyal ve ticari değeri olan zengin yerler olabilirler. Tarihi sokaklar, bu değerlerle ilgili etkinlikleri hareketlendiren bu mekanların bir parçasıdır. Bu nedenle araştırma, Arap mahallesi sokağında bulunan tarihi sokaklar için bir kentsel yenileme ve geliştirme yöntemi önererek, yarının gelişmelerinin insani sosyal yaşam ihtiyaç ve taleplerine uyumlu ve verimli mekanlara dönüştürmeyi amaçlamıştır. Bu nedenle araştırma amaçlarını sonuca bağlayacak bir metodoloji uygulanmaktadır. Sonuç olarak, araştırma tasarımı, literatür taraması, analizler ve saha araştırması olmak üzere üç önemli ana noktaya ayrılmıştır; her bir kilit nokta, alt içeriklere ayrılmıştır ve araştırmayı hedeflerine yönlendirmek için tasarlanmış eksiksiz bir rakamdır. Ticari, sosyo-aktif ve yaya mekanları kavramları ve faydaları gözden geçirilerek, tarihi sokaklar için önerilen stratejileri destekleyen örnek olay alanı için bir öneri tasarlanmıştır. Alan araştırması, bölge sakinlerine ve kullanıcılarına yönelik bir takım yapılandırılmış sorular içermekte olup, ihtiyaçları, inançları ve talepleri hakkında bilgi edinilmesine yardımcı olmuştur. Bu veriler, bir dizi tavsiyeyi gösteren örnek olay caddesi için bir teklif tasarımı oluşturmaya yardımcı oldu. Öneri tasarım, Irak'ta Erbil şehrinin en eski mahallelerinden biri olarak kabul edilen ve Erbil kalesi çevresinde ve altında yerleşmiş olan Arap mahallesinde yer almaktadır. Erbil, yeryüzünün antik kentleri arasındadır.

Anahtar Kelimeler: tarihi sokak, Erbil şehri, Arab mahallesi, ticari mekan, sosyal mekan

### **Table of Contents**

2
3
4
5
7
10
11
17

## CHAPTER I

Introduction	19
Overview	19
Statement of the Problem	20
Purpose of the Study	20
Hypotheses / Research Questions	21
Significance of The Study	22
Limitation of The Study	23
Definition of Terms	23
Research Outline	24

## CHAPTER II

Literature Review	26
Street	26
History of Street	
Types of Streets	33
Arterial Street	
Collector Street	
Local Street	34
The Concept of Commercial Place	

The Concept of Socio-Active Place	38
The Concept of Pedestrian Place	39
The Benefits of Pedestrian Depended Commercial and Socio-Active Places	42
Related Research	43
Example I: The Jinli Historical Street	44
Access and Linkage	47
Comfort and Image	50
Uses and Activities	53
Sociability	56
Example II: Mumhane Street	58
Access and Linkage	58
Comfort and Image	61
Uses and Activities	65
Sociability	67
Example III: The Shambles Street	68
Access and Linkage	73
Comfort and Image	74
Uses and Activities	76
Sociability	79
Evaluation of Similar Examples	80

## CHAPTER III

Methodology	82
Research Design	82
First Key Point (Literature Review)	
Second Key Point (Analysis)	84
Third Key Point (Field Survey)	84
Sampling and participants	85
Data Collection Tools/Materials	85
Data Collection Procedures	86
Data Analysis Plan	87

### CHAPTER IV

Findings and Discussion
Case Study Area
History of Erbil City
History of Arab Neighbourhood91
The Selected Street of Arab Neighbourhood93
Cultural And Historical Value of The Street94
Current Situation of The Street96
Evaluation Of the Case Study Area98
Questionnaire Results100
Personal Information100
Social Information101
Cultural Information105
Commercial Street107
Historical Streets of Erbil City111
Arab Neighbourhood & It's Streets117
Proposed Design of Arab neighbourhood's street

## CHAPTER V

Discussion
------------

## CHAPTER VI

Conclusion and Recommendations	131
Conclusion	131
Recommendations	132
Recommendations According to Findings	133
Recommendations for Further Research	134
REFERENCES	135
APPENDICES	150

## List of Tables

Table 1. The Main Questions and Sub-Questions of The Research	
Table 2. Evaluation Of the Similar Examples	
Table 3. The Prepared Evaluation Table for Case Study Area	
Table 4. Evaluation of Case Study Area	99

# List of Figures

Figure 1. The Sequence of the Chapters of the Research	4
Figure 2. A Brief History of Changes in the Traffic Engineering	7
Figure 3. A Group of People from Nineteenth Century Talking on the Street of a	a
Village	3
Figure 4. The Explanation of Gradual Use of Streets	9
Figure 5. A Drawing of Street Cry from A Monograph	9
Figure 6. A Selling Scene from Praedia of Julia Felix-Pompeii, Presented in Frieze	
	)
Figure 7. A Vegetable Seller's Relief in Rome	)
Figure 8. A Seller of Ice-Cream and Locksmith Hawker	1
Figure 9. A Vendor in Naples which Selling Fish	1
Figure 10. Pushcart Peddlers in 1905, "New York City"	2
Figure 11. The Servicing Proportion of Arterial, Collector and Local Streets	5
Figure 12. Pattern Of People Connections on A Street In San Francisco	9
Figure 13. Passenger Transportation Number Per Hour by Using Different Modes o	f
Transportation41	1
Figure 14. Space Needed for Different Transporting Modes	1
Figure 15. Commuter's Wellbeing Through Using Different Modes of Transportation	n
	2
Figure 16. Features Of Making Great Places	4
Figure 17. Location Of Jinli Street	5
Figure 18. Starbucks Cafe at Jinli Street	5
Figure 19. Access To Jinli Street by Public Transportation	7
Figure 20. The Linkage of The Street's Space with The Attached Buildings	7
Figure 21. The Attraction Between Visitors with The Environment of Jinli Street 48	3
Figure 22. Wider Areas of Jinli Street	3
Figure 23. Sidewalks And Adjacent Buildings of Jinli Street	9
Figure 24. Jaunt Carriages of Jinli Street	9
Figure 25. Jaunt Carriages for the Use of Visitors	9
Figure 26. Old Buildings with Western Sichuan Style and Elements of Folk Culture o	f
Chengdu50	)
Figure 27. Traditional Environment of The Space	)

Figure 28. A Traditional Corner in Jinli Street	51
Figure 29. Pedestrian Depended Place	51
Figure 30. Flagstone Pavements and Cleanliness of Jinli Street	52
Figure 31. Few Spaces for Sitting	52
Figure 32. Indoor Sitting	53
Figure 33. Outdoor Sitting and Inconveniently Located Seats	53
Figure 34. Basic Pleasure and Activity of Childhood	54
Figure 35. Jinli Snack Street	55
Figure 36. Folk Music, Plays, and Local Customs	55
Figure 37. Traditional Shops and Elements in Jinli Street	56
Figure 38. Bustling Night view of Jinli Street	56
Figure 39. The Theater of Wuhou in Jinli Street, Shows Acters When Performing W	Vu
Fu Movements While Pouring Cups by Tea	57
Figure 40. Access To Mumhane Street by Public Transportation	59
Figure 41. The Linkage of The Street's Space with The Attached Buildings	of
Mumhane Street	59
Figure 42. Interior Visibility from The Outside	60
Figure 43. Comfortability Of Walking Through the Place	60
Figure 44. Sidewalks As Sitting and Signage Place for The Buildings	61
Figure 45. Old Buildings of Mumhane Street	62
Figure 46. Aziz Nikola Church at Mumhane Street	62
Figure 47. Car Parking Place Near Mumhane Street	63
Figure 48. Side Parking On Mumhane Street	63
Figure 49. Enjoyable Places of Mumhane Street	64
Figure 50. Thrown Useless Elements on the Sidewalks of Mumhane Street	64
Figure 51. Visual Pollution by The Walls of Mumhane Street	64
Figure 52. Outdoor And Indoor Sitting	65
Figure 53. Gathering and Eating in The Mumhane Street	65
Figure 54. Land Uses of Mumhane Street	66
Figure 55. Meeting Friends End of The Day in A Soup Restaurant Located	on
Mumhane Street	67
Figure 56. Group Gatherings During Daytime in The Mumhane Street	68
Figure 57. The Shambles Street and St Crux Church In 1881	68
Figure 58. Location of Shambles Street	69

Figure 59. Descriptive Plaque Hanged Near Shambles Street
Figure 60. Narrow Path of Shambles Photographed in 200670
Figure 61. Meat Shop on The Shambles Street71
Figure 62. Wattle And Daub Covered Buildings72
Figure 63. The Redeveloped Street of Shambles
Figure 64. Sidewalks Of Shambles Street73
Figure 65. Outdoor Gatherings at Shambles Street74
Figure 66. A Church at The Shambles Street Functioning as A Tea Room Place74
Figure 67. Safety and Security Measurements on Shambles Street75
Figure 68. The Street Used by People from Different Ages, St Crux Church York Used
as A Tea Place76
Figure 69. The Street Used by People from Different Ages, Harry Potter Themed
Shops in The Shambles Street77
Figure 70. Tea House And Its Courtyard on The Shambles Street
Figure 71. A Small Store of Traditional Sweets
Figure 72. Chocolate Shop on The Shambles Street78
Figure 73. Jewellery Shop Situated on The Street
Figure 74. Store Of Ancient Elements
Figure 75. Harry Potter-Styled Shops
Figure 76. The Three Key Points of the Research Design
Figure 77. The Sub-Contents from The Three Key Points of the Research Design 83
Figure 78. Methodology Of Data Analysis and Results Plan
Figure 79. Urban Expansion of Erbil City Along the History
Figure 80. The Erbil Citadel Buffer Zones90
Figure 81. Master Plan of Erbil City 203090
Figure 82. Location of Arab Neighborhood
Figure 83. Location Of Arab Neighbourhood's Street
Figure 84. The Places that Close to Arab Neighbourhood's Street94
Figure 85. Bad Situation of Old Buildings on the Street of Arab Neighbourhood 95
Figure 86. Observed Local Architecture Details in the Buildings Located on the Street
of Arab Neighbourhood95
Figure 87. Using Plots as Parking Spaces
Figure 88. Existing Land Uses of the Street of Arab Neighbourhood
Figure 89. The Unused and Closed Residential Buildings

Figure 106. The Percentages of Replies for the Question of "What is the Reason You
Visit Commercial Areas in Erbil City?"109
Figure 107. The Percentages of Replies for the Question of "Do You Enjoy
Commercial Areas in Erbil City?"110
Figure 108. The Percentages of Replies for the Statement of "Choose Five Economical
Activities You Want to See in A Commercial Area"110
Figure 109. Shows the Percentages of Replies for the Question of "What are the Main
Three Gaps of Commercial Areas in Erbil City?"111
Figure 110. Displays the Percentages of Replies for the Question of "Did You Live in
A Historical Neighbourhood?"112
Figure 111. Shows the Percentages of Replies for the Question of "Did You Visit any
Historical Street in Erbil?"
Figure 112. Shows the Percentages of Replies for the Question of "Are you Satisfying
with the Current Situation of Historical Streets?"
Figure 113. Displays the Percentages of Replies for the Statement of "Erbil City has
Potential Historical Streets for Touristic Attraction"
Figure 114. Illustrates the Percentages of Replies for the Statement of "Neglecting Is
One of the Problems that Faced Historical Neighbourhoods in Erbil City"114
Figure 115. Shows The Percentages of Replies for the Statement of "Lack of
Maintenance Is a Major Problem in Historical Streets of Erbil City" 114
Figure 116. Illustrates The Percentages of Replies for the Statement of "There Is
Deterioration of Local Identity in Historical Streets of Erbil City" 115
Figure 117. Displays The Percentages of Replies for the Statement of "It's Not Easy to
Find Somewhere to Sit or Rest on the Historical Streets in the City"115
Figure 118. Shows The Percentages of Replies for The Statement of "Historical
Neighbourhoods and Their Streets Need Rehabilitation and Renewing Works"
Figure 119. Illustrates The Percentages of Replies for The Question of "Do You Feel
Safe and Secure While Visiting Historical Streets of Erbil City?"117
Figure 120. Shows The Percentages of Replies for The Question of "In Which
Frequency You Visit Arab Neighbourhood?"117
Figure 121. Shows The Percentages of Replies for The Question of "What Is Your
Main Reason for Being on Arab Neighbourhood Streets?"

# List of Abbreviations

AD	AD stands for Anno Domini, Latin for "in the year of the Lord".		
FCS	Functional Classification System.		
BC	Before Century.		
UNESCO	United Nations Educational, Scientific and Cultural		
	Organization.		
TV	Television.		
PPS	Project for public spaces.		
IPWEAQ	Institute of Public Works Engineering Australasia Queensland.		
ESOHT	European Symposium of Historic Towns.		
FCS	Functional Classification System.		
FHWA	Federal Highway Administration.		
TCPTFD	Technical Committee on Public Transportation Facilities		
	Design.		
AASHTO	American Association of State Highway and Transportation		
	Officials.		
SFBS	San Francisco Better Streets.		
UK	United Kingdome.		
NYCDT	New York City Department of Transportation.		
WHO	World Health Organization.		
	World Hould Ofgunzation.		
CAD	Computer-Aided Design.		
CAD TRCAHMC	č		

## CHAPTER I Introduction

#### Overview

Recent historical areas were places for merchandise, information, learning, opinion and cultural interchanges (Karssenberg, 2016). These interchanges occur in the historical streets which they are accessing platforms to our houses and working places, and to the city's outer and inner places. Old urban areas own historic places and streets that animates a significant part in confirming the historic and cultural extents of areas that shape urban fabric as well as the city roots and their social, cultural and commercial inclusion as community's structure. The historical values that belong to a historic street in which continued in surviving till present day. The social, economical, and official franchises are the combination of urbane societies that represented by historic streets as network of urban's compositions. On account of meeting the needs of recent developments of urban areas, these streets are exposed to various variabilities such as commercial, social, as well as physical ones. Historical streets are defined as considerable features of the cities that needs particular strategies to treat their problem-oriented difficulties to preserving them for next generation. Beside their function as communication between neighbours and accessing among the city's places, these streets are animating the commercial and social life of the city. Therefore, this research illustrates the potency of the selected street of Arab neighbourhood to be used as commercial and socio-active place in Erbil city, it also tries to indicate the ways of reviving the streets within an integrated framework to create a simple proposal through dealing strategies for historical places. The city of Erbil is among the four large cities of Iraq, approximately 1.5 million in 2020 was its population. The city is located in North of Iraq country. The early civilization of the city dates back to more than 6000 BC. Among other places in the world, it considered as the primordial area that people continuously lived in. The historic citadel of Erbil directly coordinated in the middle of the city with some old neighbourhoods surrounded. Recently the city shows developments in urban growth, as a result, it increases the demand for multi-functional places and spaces and resources to support this development. So, the research turned its direction to spaces like streets especially historical ones to take benefit from recycling, reusing and

giving them functions more than they did in the past depending on the capacity of the street and place surrounding it.

#### **Statement of the Problem**

Several streets with high historical and cultural values are neglected in the city and no renewal, revitalization or rehabilitation strategies done for them, which it negatively impacts on the commercial activities and social life of the street. The city needs some tourism promotion points, besides that, having potential historic streets in the area left desolated that people quit to visit or pass by this type of streets because they are in a bad condition, they more visit to the newly developed neighbourhoods with various activities. Narrow streets are used as vehicle access without concerning for pedestrian flow, numerous of these streets are lost their value and exposed to various informality in uses, losing the historical identity and their culture related heritage, all these because of weaknesses in safeguarding them. According to the researches and observations, the main problem is that, the historical buildings and areas are being exposed to really long periods of negligence, where no attention is paid, resulting in the possible loss of important values and heritage characteristics.

- The streets and buildings are in a bad condition.
- Narrow streets are used as vehicle access without concern for pedestrian flow.
- The historic streets become subject to many informal uses like car parking.
- The buildings are closed and left without use.

#### **Purpose of the Study**

The research firstly aimed to accept the potency of the historical streets of Arab-neighbourhood to be used as commercial and socio-active places, and it targeted to propose an urban renewal and development methodology for the historic streets in the area, and transforming them to places that are efficient and compatible for human social life needs and demands of tomorrow developments. Essentially, the study's purpose is to better comprehend that the selected street of Arab neighbourhood functions as a public place that promotes social interaction whilst still offering possibilities for redevelopment, and providing good qualities in appearance and environment. Revitalizing the significant character of these places that promote commercial and social functions in the city, in which it confirms the safety and security of the people, and releasing the streets from informal uses like car parking, while it keeps the cultural and historical qualities of these places. This runs counter with the concept of the "modern-street", which was invented in the beginning of 20th century like a long, compact, not wide and linear public area used only for vehicular traffic. Nowadays, the majority of them are dangerous, unknown, empty of life, as well as polluted with environmental degradation. The concept of "modern-street" Works as a reminder of an image of destitution and misery of citizens (Mehta, 2013).

- The research aimed to propose an urban renewal and development methodology for the historic streets and surrounded buildings in the area. for this reason, one of the streets of Arab neighbourhood considered as location of research case study.
- It also aimed to make the area more effective and more responsive to the social life needs and requirements of future developments depending on the capacity of the streets.
- Revitalizing the significant character of these places that promote commercial and social functions in the city beside keeping the cultural and historical qualities of these places.
- Releasing the streets from informal uses like car parking, and bringing back to its original function which is pedestrian access.
- Recycling and reusing old buildings around the streets for commercial and social facilities to help tackle climate change.
- Accepting the potency of the historical streets of Arab-neighbourhood to be used as commercial and socio-active places.

#### Hypothesis / Research questions

The research comes with the hypothesis of "The Arab neighbourhood's street has potential to be used as commercial and socio-active place. The inhabitants and users of the street are willing to transform the street from a car parking yard to a pedestrian depended place", that along with its chapters it will be tested, explained and clarified.

#### Table 1

Main Questions	Sub-Questions
Do historical streets have potential to be work as pedestrian depended place?	Do other countries use their historic streets as places for social and commercial activities?
	How other countries use their historic streets?
	Do the visitors of Arab neighbourhood agree with the idea of using the street as commercial and socially active place?
Is it possible to use street as a place?	What are the needs to transform a street to a place?
	What is the definition of commercial and socio-active place in historic street? What are the benefits of transformed street to a place?

The Main Questions and Sub-Questions of The Research (Author, 2023).

#### Significance of the Study

The research gives a theoretical description of the potency of the historical streets to be used as commercial and socio-active streets also documents the effective strategies and detailed ideas to deal with this type of streets, as well as shows the reaction of Arab neighbourhood streets to these new functions. Erbil city need developments in fields that related to social life activities, accordingly, the study reaches this important point of the need. It branches in improvement to the known data of the historical neighbourhoods and their streets in the area. It helps in the development of the city and creating active streets from exited ones. Reusing old buildings can reduce waste. The street which chosen as case study in the area is connecting the main Muzafaria street that includes electronic shops with the Bazar-Qaisary of the city. In the public condition, this area of research sets an immense event for the community in discovering their complication with the misuse of historical streets in the area. This is a significant advantage, which sets points that are able to shape valuable social, commercial and physical relationships on the historical streets. It shows a new face of historical streets with the commercial interactive and socio-active ideas implemented on the streets. The area of research delivers a functional perception of cultural, social and commercial needs in a street. The study conducts physical relations in the streets that may persuade responsiveness between the society and this type of streets. The study will be a ready proposal for future renewal decisions of historical streets in the city, it will be useable data for the city municipality and related fields for the future historical site works. Alternatively, the research inspires new areas of study in the future researches.

#### Limitation of the Study

The study of this research subjected to many constraints that can be noted for further researches. In the beginning, possibly the existed data on Arab neighbourhood faced inaccuracy and lost some details till it reached recent days, therefore it takes time to fined reliable and accurate data. Secondly, I was planning to take samples from Arab neighbourhood residents but the buildings are emptied because they are in a bad condition that can't be used, just few residents are remain, for this reason I have to take questioner through two ways of sampling first, from the inhabitants of the place. Second, from people that uses the place for their personal purpose. So, it widens the study that both ways of sampling show beneficial data for the proposal that planned to submit through the study. Both mentioned constraints were the limitations of the study.

### **Definitions of Terms**

The research is a transformation of an old street to a place with various commercial-oriented buildings beside its social activity promoters that can be experienced through walking without using vehicles. The commercial buildings include shops, retail, offices, inns, public facilities, restaurants, and a cafeteria. The place work as a main promoter for social activities such as encounters, gathering, meeting, and date with friends, family, siblings, colleagues, and new people. The potential street that can take this transformation is a street located inside an Arab neighbourhood, which connects Muzafaria Street to Bata Street and from there to Bazaar-Qaisary.

#### **Historical Streets**

Are linear spaces used as paths that considered as historically significant elements of an area because they are used for a long period.

#### Pedestrian Depended Place

It can be defined as a transformation of a place of a city from a vehicle used street to a pedestrian place which cars are prohibited to cross this place, that pedestrians will be the only users of this place (Lah, 2018).

#### **Commercial Places**

Are serving places with various adjacent buildings that works as offices, cafes, restaurants, retail shops and other commercial related lands (Valley Transportation Authority, 2019).

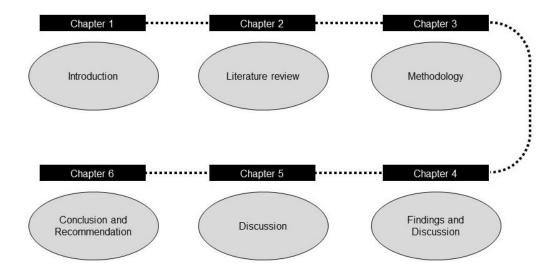
#### Socio-Active Place (Socially Active Place)

After living and working places, socio-active places considered as the thirdplace of people for gatherings, as a pleasant place to stay in which is not near to their houses and working places. Sitting with friends, talking with people, standing, walking with someone or taking pleasure of any other activities while the improvement of a non-formal social life (Oldenburg, 1989).

### **Research Outline**

This thesis inspects the ability of historical streets to introduce commercial and social activities within the city of Erbil. Within this context, the investigation of Arab neighbourhood potency is carried out by studying the commercial and social activities, also the usage of this activities in the streets of Arab neighbourhood. In doing so a questionnaire is supervised for people who are users of Arab neighbourhood streets. Hence, Six chapters explain every step of the analysis and discussions (Figure 1), where Chapter one is the introduction of the study, Chapter two is the literature review of historical background, social, commercial and historical streets, Chapter three is the methodology for the research to carry out where different methods are implemented, Chapter four is the findings and discussions about a long progress of the study, Chapter five presents the discussion of these findings in comparison to the studies in the literature., and Chapter six is Conclusion and Recommendation conducted from the idea of historical streets as commercial and social activity places.

The Sequence of the Chapters of the Research (Author, 2023).



## CHAPTER II Literature Review

This chapter discusses the important subjects that related to the topic of the study. It explains about street, its history and street types as one of the considerable elements in urban design of a city. The chapter continues with explaining the concept of commercial place, socio-active place and pedestrian place, and their benefits. Also, analysing and evaluating the selected three similar examples that derived from different countries takes place in the chapter.

### Street

Streets physically or structurally are linear shaped urban elements that we are using for our daily works such as going to work, shops, parks, leisure places, and etc. From Rapoport point of view: street is a linear and not wide space surrounded by building plots and function as circulation area and even work for many activities (Rapoport, 1977). Street is the main provider of economic, social related and physically oriented activities which they transform cities to a pleased living area for people (NACTO, 2017). The organization of PPS in 2008, considered streets as places that people could do activities such as walking, strolling, looking and gazing someone, playing, shopping and maybe working, but it's not places for driving cars (PPS., 2008). It is a covered space by building structures that is designed to provide access among buildings. It is part of the definer elements of urban context (Jacobs J. A., 1995). Moreover, it could be a busy space for commercial activity, social encounters, and exchanging of cultures. Before, streets are described as a plain path of two dimension that used for communication among places (Harb, 2016). In this case, if a two-dimensional street appears as a path, then a three-dimensional street considered as a place.

The private-plots such as buildings and public-plots such as greenery yards and public places could be determined by the linear shape of street (Harb, 2016). Accordingly, as proposed by Lynch that both elements of the city's image could be presented with the street (Lynch K. , 1960). Either it appears as edge or Path (Harb, 2016). Lynch determined the street as a linear formed path, while described this street as a canal where a viewer usually, sometimes or potentially moves (Lynch K. , 1960). People may see the city from this street. In a general term it is a transportation platform for human, animal, and goods from a place to another. This transportation can be done by private/public vehicles, bicycles, or pedestrian or even animals like horses and donkeys in the past. "Streets are powerful tools of urban design and consequently of understanding and making the city legible" (Mehta, 2013). It means the streets are definitions of the city.

A lively part of a city are the streets. for the majority of individuals, a main essence of a city are streets and squares, (Gehl, 1971). Whyte considered streets as the city's river and people's gathering place and the pathway to other places (Whyte, 2010). Streets are feasibly a basic component of human habitation, the basic elements of organized cities are the streets as well as squares throughout human habitation history (Gehl, 1971). Street is considered as place if its more than just a transportation platform and its generally placed within a context and open to the sky that can be called as open space within the context.

A street set out several roles continuously including traffic flow and access, as well as public place for urban beneficiary activities (Barter, 2009). As per the literature, streets have dual-functions which are explained by several experts, including (Baghi, 2011) (Mehta, 2016) (Sammas, 2010). Streets, as a significant component of urban structure, serve as social places, commercial places, cultural places, transportation channels, and symbolic characterizations of local life style and culture (Barter, 2009) (Chen, 2006) (Sammas, 2010) (Sivam, 2013). People in several city centres continue to rely on streets for utilitarian, social, and leisure activities such as transport, purchasing goods, play, connecting with others, and even relaxing (Barter, 2009) (Baghi, 2011) (Sivam, 2013) (Jacobs J., 1961). Therefore, it's a platform that needs some important details to give qualities to the street and to be considered as a useful street for its users. Lynch discussed that the quality of appearance could be a description for the terms of legibility and clarity of the urban context features such streets that influence the whole fabric created by the inhabitants (Lynch K., 1960). The exclusiveness, advantage and the value of its features could be elements to measure a street's characteristic. The features such as walking lanes, lighting pols, signs, building structures, retail shops, sideboards and visitors, all participate in the street's quality (Jacobs J., 2013) (Fruin, 1971).

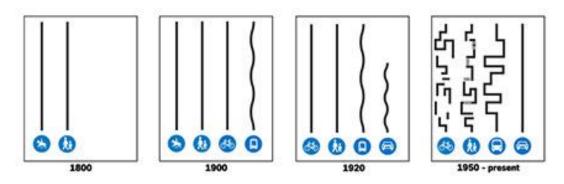
The safety is considered as other detail that influence the street's quality. Mehta explained safety as it is one of the qualities of public places by themselves, in which people could feel the expected safety (Mehta, 2014). In general, safety could be considered as the result of public place's quality. The streets beside their extensive descriptions and depending on their hierarchical classification they could be split up into three types including arterial, collector and local streets, that three of them have different traffic loads and various uses (Ewing, 2009).

#### **History of Street**

The basic needs such as communication and recreation for surviving a community could be provided by the spaces that created through streets of a city, beside their performances as politic, religious, social and economic functions (Jacobs J., 1961) and (Sivam, 2013). The early streets were paths that marked by wild animals which later humans adapted them for their advance uses. These paths earliest findings were close to Jericho the Jordan Valley's southern part that dates back 6000 BC. While the first constructed streets date back to four-thousand years BC located in Iraq at old Ur city that was created from stone (Lay, 2022). The construction of stoning streets became more famous with the presence of strong metal equipment in Bronze Age, and the need for these streets were rose by using wheeled carts that were founded around 2000 years BC (Lay, 2022). The (Figure 2) shows a brief history of the stages of changing in the traffic engineering. The slow movement of vehicles provided a shared use of the street by everyone, but driving vehicles with speed changed the street's dynamic (Montgomery, 2013). It means, the vehicles speed destroyed the term of shared-street and separated the pedestrian's access.

#### Figure 2

A Brief History of Changes in the Traffic Engineering (Colville-Andersen, 2018).



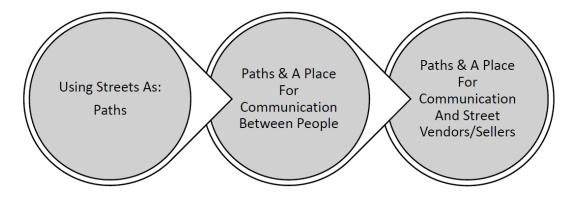
The streets they were used as paths, encounter, communication, selling and retail areas. Streets could be places for enjoying and learning commercial by people (Sammas, 2010). In a nut shell in first place the streets were used as paths to move from a place to another, with this, it experiences the function as communication place for encounters and between neighbours; as the (Figure 3), represents a group of people from nineteenth century talking on the street of a village, according to the book that one of the women holding what looks like a prayer book, it shows that they return from a church. These two main functions of street in the past make the street to show another phase of function, which it became a place for street vendors and street sellers to display and sell goods to nearby houses in the past (Figure 4). Practically, the food selling history is connected to the street cry's history (Figure 5) in Europe from 15 century, it helped the emergence of food hawkers (Calaresu, 2016).

### Figure 3

A Group of People from Nineteenth Century Talking on the Street of a Village (Bishop, 1893).



The Explanation of Gradual Use of Streets (Author, 2023).





A Drawing of Street Cry from A Monograph (Fournel, 1887).



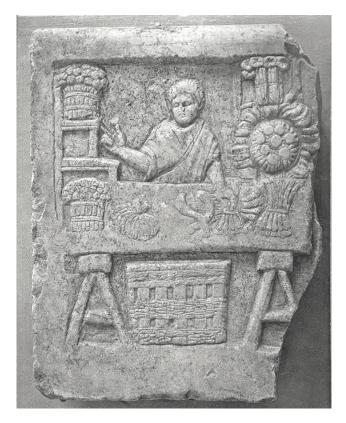
A number stone reliefs are survived that are figuring food selling scenes. For instance, a figure from Roman period is represents an actual scene of hood hawkers and people shows an economical vision in the area (Figure 6) (Calaresu, 2016). Also (Figure 7) is a relief dating back to late 2<sup>nd</sup> century of AD in Ostia from a marble material, illustrates a seller of vegetable behind a selling table (Calaresu, 2016).

A Selling Scene from Praedia of Julia Felix-Pompeii, Presented in Frieze (Calaresu, 2016)





A Vegetable Seller's Relief in Rome (Calaresu, 2016).



A photo taken by Thompson in 1870 that displays a seller of ice-cream and locksmith hawker (Figure 8). From London there was about thirty-thousand street pedlars (costermongers) in 1800s, were most of the households from middle and working class rely on these street pedlars (Thompson, 1876). Also, the (Figure 9) displays a vendor seller from 1890 that sells fish. And (Figure 10) represents a man with Pushcart Peddlers from New York in 1905.



A Seller of Ice-Cream and Locksmith Hawker (Thompson, 1876).

# Figure 9

A Vendor in Naples which Selling Fish (Fratelli, 1890)

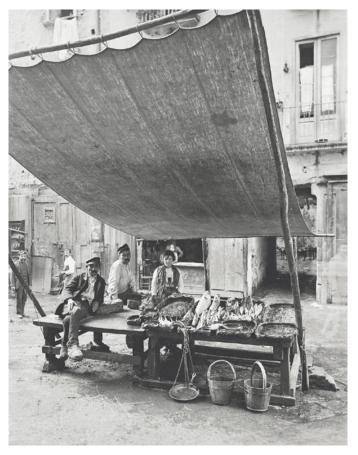


Figure 10 Pushcart Peddlers in 1905, "New York City" (Hine, 1905)



The streets of cities had a higher dynamic and vivid level that different uses worked together for many years. It was a combined system of the people's movement, and their economic and social life till the end of the first half of 20<sup>th</sup> century. This was changed when huge interventions occurred to emphasize traffic in urban fabric during 1960s-1970s (Karssenberg, 2016). Spontaneously, scholars like Jacobs, Lynch and Cullen argued the positive sides of human scaled streets. They payed attention on how could people experiencing any place at level of their eye (Karssenberg, 2016). All these make people to rethink about their experience with streets.

Every culture has different street character, it depends on their religion, believes and social values. the exclusiveness of a street expressed by the street's role (Lindsay, 2009), also it considered as the outcome of the street's design through its historical reflection (Kropf, 1996) (Ja'afar, 2014). The revolution of industry, traffic diagrams, the economic situations, and public vision have possibility to change by time that effect the form of urban and the public place's life. Recently the streets are casting many faces of usage as indicated in the research done by IPWEAQ in 2010 that street has significant role through its multi-functions within urban-scape such as Pedestrian & vehicle traffic, Commercial activities, Street dining, Community interaction, Seating, Play & entertainment, Streetscape treatment (soft & hard), and others (IPWEAQ, 2010).

The duality conflict of the old and new cultures, intimacy with the past and the attached concept of progression to the present are within the occurrence of historical environments (Orbasli, 2000). Cravatte featured this conflict to the changes in the growth of urban and the continuous evolution of towns (ESOHT, 1976). The conservations of historical heritages were affected by these changes in which they preserved for our generations, economic rise, and tourism. Also, these evolutions were happening in the old towns influence the building's physical look and skyline, also the features of street edges (Oppong, 2018).

#### **Types of Streets**

The characteristic features are served to animate the culture and history of a place, and they usually figuring a tale about the richness and intensive side of the town. (Ja'afar, 2014) (Warnaby, 2009). These features are figured by the studies of Kropf as place's relative character, especially the street's physical structure (Kropf, 1996). The streets depending on their hierarchical classification they could be split up into three types including arterial, collector and local streets, that three of them have different traffic loads and various uses (Ewing, 2009). The Functional Classification System (FCS), determines the use of local, collector and arterial streets (Forbes, 1999), (Hartanti, 2012).

#### Arterial Street

The arterial streets are carotids of the city's street network, it is implemented for a clear higher speed traffics, it could be designed with 4 lanes and more, it has a higher capacity for carrying flows of longer distances between places, and the intersections are points where traffic signs used intensively (Johns Creek, 2016). This street's primary use is traffic movements, it is gathering vehicles from collector streets (Jamal, 2017). These types of streets are allowing higher speeds of vehicular limits between 50 to 70 miles per hour (FHWA, 2000). The policy guide of highway designs determines the 3.6m widths to be used for lane design of arterial streets, also it is flexible to use narrower widths (TCPTFD, 2004). Usually, it has a high number of intersections and traffic poles, it is straight and clear that promotes driver to use high speeds therefore radar sets are using on these streets to make drivers lower their speed. For this reason, these streets are facing pedestrian damages (Jamal, 2017).

#### **Collector Street**

Collectors are low or medium capacity streets which transform vehicles from local to arterial streets. It is designed to ensure access for residential places. It consists intersections with installed traffic signs (Johns Creek, 2016). Collector streets are narrower than arterials and usually their traffic flow is lower. Also, it allows higher speeds of vehicles than local streets (Jamal, 2017). This street's vehicle speeds are between 35 and 55 mile per hour (FHWA, 2000). This type of streets has mutual appearances between arterials and locals, also it works as a link among them. They connect various land uses between neighbourhoods with a network of arterial street.

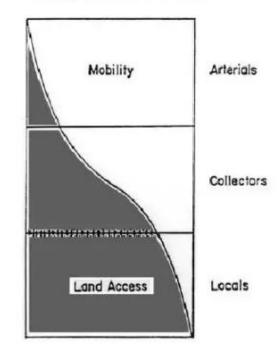
#### Local Street

Local streets are mainly ensuring access to residential areas and other related properties (Law Insider, 2018). it allows access to the areas such as residences, commercial places, farm lands and other plots. 20-45 mile per hour is the speed ranges of local street (FHWA, 2000). It means these streets are transferring traffic from property lands and discharging them to the collector streets. This type of streets encourages drivers not to drive more than 30 miles per hour that provide a safe environment for the drivers and the pedestrians on the street, in which ensures traffic movement while providing parking of cars on both sides (AASHTO, 2001). The length of these streets usually less than one kilometre, and the width typically is about eight metres (AASHTO, 2001). These streets have a low intensity of vehicle traffic and usually the drivers use low speeds because of the available pedestrian movements (Jamal, 2017).

These streets are designed for comfortable circulation and their outline should be related to the area's topography. They are straight or slightly curved, looping or intersect in the form of "L" or "T". when a looping street utilizes, the two ends of it should locate at the same collector street and it's better to be managed for discouraging vehicle traffics. The crossing geometrical grids like gridiron networks should be avoided (American Legal Publishing, 2019). The main local streets are described as commercial streets that works as a connecter of places and as an area to stay in. it means it's a complex street that can be used for multiple functions (Vaughan, 2018). The figure below shows that arterials are more mobility towards than local streets, and locals are more accessible than arterials and collector streets (Figure 11).

#### Figure 11

The Servicing Proportion of Arterial, Collector and Local Streets (AASHTO, 2001).



#### PROPORTION OF SERVICE

#### The Concept of Commercial Place

Commercial streets play a vital role in displaying a fantastic and lively look of a city. A commercialized street for sure considered as a space for community (Lynch K. H., 1984). Moreover, it is equated with the growing of public life which marked with shops, cafes and restaurants. They noting streets as a pedestrian friendly place (Mehta V. B., 2018). Jansson explained as, this kind of places are creating intended and unintended encountering, official and non-official meetings, and socially active places (Jansson, 2019). Relph with his statement supporting the idea of commercial streets could consider as places that have physical structure and functioning well within a cultural meaning that satisfy more people of local and nonlocal. he stated as, the establishment of a place needs the coaction of the components such as "physical setting" the "activity" and the "meaning" (Relph, 1972). Streets was considered just as paths for transportation, but nowadays with the rapid growth of cities and life demands for leisure, the streets need take more responsibilities to work. As Vaughan determined a special type of commercial street which described it as a multifaceted space, that works as a connection path to nearby places and at the same time a place to spend time in it (Vaughan, 2018). Commercial place, in another term is a multi-use place that is work as a public space, which provides an encountering platform for people with different social-backgrounds (Jones, 2007). In which this encountering and interactions of people could establish within a serene environment by a well-designed street that have sitting, gathering and playing places (SFBS, 2014).

The two counter sentences of (street for people and non-safe street), both conditions can take place at the same streets, for instance, a successful commercial street throughout the day, may become hazardous street when its night (Vidler, 2011). For this reason, well attracted and activated street throughout day and night with cafes and restaurants helps in increasing the duration of time spend by people at the street. Also, this kind of active streets could be a successful pedestrian place because it became a reason for pedestrians to remain in the place (Harb, 2016). therefore, the illumination, visual and physical connection, openness, monitoring cameras, and guards are measurements of safety of a place (Jansson, 2019) in which it can welcome people to inside the public places. The shopping, drinking, eating places and related public places like them are elements to gain pedestrian flow that could assure the movement of the street and its safety (Jacobs J., 1961). She argues that, the influence of eyes as a continuous monitoring in the place could be an important element that provide a sense of safety (Jacobs J., 1961). The difficulty of making people to use a street when they haven't motive to use, the essential commercial and social activities that could work during day and night are effective observators that provide safety (Jacobs J., 1961). For this reason, well attracted and activated street throughout day and night with cafes and restaurants helps in increasing the duration of time spend by people at the street. At the same time, it supporting the concept of perceived safety contributed more by a multi-use's street confronted with a single-function street. Moreover, the multi-uses street could attract more people to visit the area, accordingly more monitoring eyes on the place, that could preserve well behavior (Jansson, 2019). The solution is making the street an

open entertainment space which include small retail stores, restaurants, cafes and free from vehicle traffic. that become the visitor's paradise. As Gehl imagines the place that, it has activities like shopping, communicating or chatting, walking and looking at surround people, sitting at places for eating and drinking while watching children that playing, etc. (Gehl, 1971).

Commercial places and private jobs can be supported by the encouraged system of pedestrian walking through streets to commercial places instead of driving to malls for daily needs (SFBS, 2014). Recently, malls are demanded by parents rather than commercial areas, because the malls are free from vehicle that safer for their children while most of commercial areas move by vehicles which can cause damages. As Dasarathi mentioned that commercial streets are become nightmare of shoppers while paradise for vehicles. Therefore, 70 percentage of shoppers at commercial streets wants walking to be the only movement of the street or place (Dasarathi, 2009). He added, in making the street a focal point place for tourists, the well appearance of shop elevations and their signage, free of vehicles without blocking the view these results as free of noise and air pollution that protect the health of visitors and shop owners (Dasarathi, 2009). Considering to this, Walaa and Wesam Mehanna in their study mentioned the appropriateness of narrow streets to be used by pedestrians rather than by vehicles. according to them, most of the routes of pedestrian have the length not more than 1.5km that can be walked within 20 minutes. They added as the minimum allowable division of a street width is three lanes, the two of them used as side lanes for shops and the remained lane for movement of pedestrians (Mehanna, 2019).

The character of a street as a commercial place, streets or places of pedestrian are depended platforms by street vendors to connect with their clients. Accordingly, the streets used by people as a platform to show, provide and sell equipment as much as they can (Barter, 2009). For this reason, the walking experience can be enjoyable by the street's commercialized nature that makes more people to visit and walk around (Mehanna, 2019). In which, the concluded activities such as shops of cloths, textile, jewelry, hand-watches, sunglasses, accessories, footwear and bags, gift and cosmetic, book, restaurant and café, patisserie and ice cream, and photography stores, etc. are favorite commercial activities at pedestrian places (Mehanna, 2019).

#### The Concept of Socio-Active Place

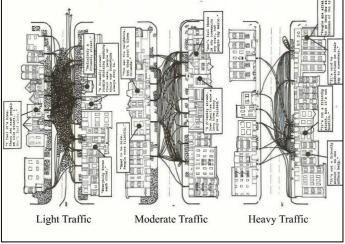
The quick adaptation of cities for the rapid changes of the society can be noticed nowadays. As Küçük mentioned that, social change takes place with the change of social relations, social rules and cultures that determine these relations (Küçük, 2017). However, this change does not occur at the same speed in every cycle (Tezcan, 1981). For instance, with the economic expansion after the second World War, people want to spend their free times in the places that have social, entertainment and commercial activities, this alteration of society made public places to be attracted more and support the life of a community (Harb, 2016). Withal, also the streets could take the role of public space for this activities, in a way that the academicians from diverse domains related to studies of urban design advising to see street as a social place instead of as the merely channel of movement (Jacobs J., 1961) (Sivam, 2013). Also, Moughtin confirmed that street couldn't be a medium for access only but also could be a platform for social expressions (Moughtin, 1992). At the same time, Oldenburg evaluate the streets as the third-place of people for gatherings, as a pleasant place to stay in which is not near to their houses and working places. Sitting with friends, talking with people, standing, walking with someone or taking pleasure of any other activities while the improvement of a nonformal social life (Oldenburg, 1989). So, a well-designed socio-active place from a street help in creating suitable atmosphere for these social activities (Mayor, 2011). Thus, the "Los Angeles Department of Transportation" shifted its perspective back in creating dynamic and attractive streets for people that they can walk easily (PPS, 2016).

Toth argued that today streets are become special farm of cars, while in the past they were places where people stopped to convers and children can play (Toth, 2008). Kent added as "if you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places." (Kent, 2005). According to a study by Appleyard and Lintell in the (Figure 12), it displays the influence of traffic on the pattern of people connections on a street in San Francisco (Appleyard, 1972). That means, the less cars on a street, the stronger connections of the local people. This approach could be reached through human scaled urban designs which facilitate social interactions (Sim, 2019).

Moughtin defined street as a social state beside its building linking behavior, it has an acceptable function which is facilitating interaction of groups and communication of people, also provide places for recreation (Moughtin, 1992). Jansson explained as, this kind of places are creating intended and unintended encountering, official and non-official meetings, and socially active places (Jansson, 2019). According to a report of The-Urban-Task-Force, this kind of places could behave as a social-glue that would connect people of the area together (The Urban Task Force, 1999). So as Taylor said, "the success of urban designing is improved when it is directly related to social aspects" (Taylor, 1980).

## Figure 12





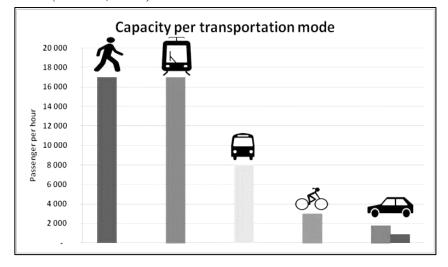
#### **The Concept of Pedestrian Place**

The streets were used as paths for people to reach the intended place by walking or driving simple carts and vendors, and it was used a communication platform for people at the same neighborhoods and as a playground for neighborhood children. The situation is not acceptable but nowadays most of the streets are used by cars, and a street under the name of pedestrian street almost forgotten. Therefore, Gehl criticizing the rise of cities that controlled by cars and losing pedestrian directed places that influencing negatively on the city's public life (Gehl, 1971). For instance, the high street of UK is suffering from car dominated designs in the city (Talen, 2019). In the other side, using streets in different ways by walking could help in occurring the activities of the streets, and the activities will increase further by restricting car access (Harb, 2016). According to Jones, the high density of pedestrian movements is the main determiner of the lifelines of activities in a multi-function street or place. It has effective influence on the land rents, and it attracts various types of commercial activities to the present place (Jones, 2007). The success of this places connected to the various attractive features that help pedestrians to remain (Harb, 2016). Moreover, the usability of a street by people of different ages including special needed people, depends on its accessibility and unimpeded (SFBS, 2014). All this shows that there is a strong connection between the social and commercial activity of a place with the style of movement of the place. It means, if a place has social and commercial activities that can be used through walking it can be considered the most valuable place in the city.

The value of a place could be higher when there is a sense of safety. Therefore, Jacobs in 1961, clarified that the essential element for the sense of street safety is the user's movement. She explained that the promoter of safety and crime discouragement on a street is the civilized behavior of people on this street through a voluntary network of people. The street users and inhabitants on the street are active voluntaries to control behavior and attitude of people on the same street (Jacobs J. , 1961). It means that empty streets tend to give a sense of insecurity for its users. Furthermore, the pedestrians of the street encourage the inhabitants of buildings on the street to observe outside, this provides a continuous monitoring eye on the same street (Jacobs J. , 1961).

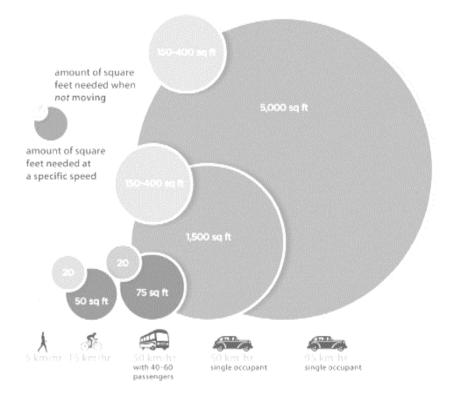
A street can transport more passengers through walking rather than by using private cars or bicycles as it shown in the below (Figure 13). And a walking passenger uses 75 times lesser space than a moving car at an average speed (Figure 14). Also, a study done by Smith in the (Figure 15), shows that walking has a positive influence on commuter's wellbeing. So, walking has positive impact for the street and the commuter itself. According to the research by Frank in 2004, an extra kilometer of walking reduces the obesity risk by 4.8% (Frank, 2004). the more walkable places that a city could have, acquire the happier and heather people that have trust and social engagement.

Passenger Transportation Number Per Hour by Using Different Modes of Transportation (Frilund, 2017).

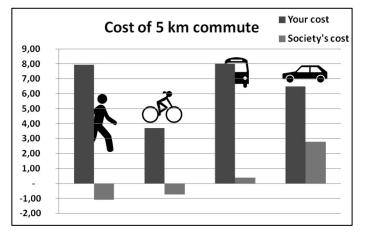


# Figure 14

Space Needed for Different Transporting Modes (Montgomery, 2013).



Commuter's Wellbeing Through Using Different Modes of Transportation (Smith, 2017).



#### The Benefits of Pedestrian Depended Commercial and Socio-Active Places

Gehl in his book argued that building environment could feed and alleviate a public place's social life particularly in the center of a city (Gehl, 1971). So, a building environment is needed to activate a place for commercializing and socializing purposes. For example, the economic outcomes of a street including land prices could be indirectly affected by the developed environment of that street, through modifying a street's perceived desirability (NYCDT, 2013). As the Washington's pedestrian depended commercial places have seventy-five percent higher property rents than other places in the city (Leinberger, 2014). Besides that, this type of streets become a domestic focal point for meeting with friends through appointments or without appointment. It creates favorable socially interactions that make people able in expressing their demands to enjoy the established public life (Harb, 2016). Also, the people in this place could able to meet or observe people from different cultures and backgrounds in which it expands a person's perspective. Spontaneously, this place decreases the feeling of depression and segregation between peoples (Jones, 2007). All these means, a street's attractive environment can provide opportunities of encounters with friends, colleagues or known people (Jones, 2007).

Heffernan sorted major benefits of a mix of walkable commercial and socioactive public places that are including social, economic, environmental, cultural and health related benefits (Heffernan, 2014). According to a report published in the webpage of "San Francisco Better Streets", the designed streets that promotes walking could benefit in minimizing the global impact of climate changes and the pollution of local air (SFBS, 2014). Furthermore, the risk of mortality could be reduced about 10% by walking during thirty minutes in a day (WHO, 2022). Researches determines that people experiencing lesser sadness when they commuting by foot than by driving car (Montgomery, 2013). It means that healthier behaviors are creators of happier behaviors.

#### **Related Research**

Streets could work for important public uses beside its traffic related functions. Their edges are often defined by buildings and public places, they help in occurring social and commercial activities. Inside the setting of urban lands and limitations of rural lands, all of them are figuring the street (Scottish Government, 2010). Different types of similar examples are existing; therefore, it needs to evaluate the examples through five criteria so that the study concentrate on three examples that relate to the scope of the study area in order to meet the purpose of the study. The similar examples are selected according to the criteria such as:

- a) A street: the chosen example must have been street from before.
- b) A cultural street: the street should be located in a historical and cultural area, so automatically it counted as a historical and cultural street.
- c) A redeveloped street: the chosen street must have been used as a street then it was redeveloped and used as a commercial and social place.
- d) A commercial nature street: the chosen street should display the activities like shopping, sitting, eating, gathering and chatting.
- e) A car free street: the chosen street needs to be a pedestrian depended and a car free street except the service cars.

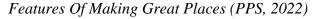
Analysing the similar examples will strengthen the study, it explains the strong points of such streets and shows a preface in the design and uses of the street for the case study area (Arab neighbourhood's street). Considering streets as public space, streets have the capacity to be meaningful and valuable places (Mehta V. , 2018). To achieve that, Mehta argues the three aspects of street the design, management and uses of the street (Mehta V. , 2018). The three examples will be analysed in a systematic approach, which it makes the comparison between them

easy and understandable. The three similar examples will be evaluating depending on the considerations of four features that makes a place great (PPS, 2022):

- 1. Access/Linkage
- 2. Comfort/Image
- 3. Uses/Activities
- 4. The Sociability

The organization of PPS (Project-for-Public-Spaces) has established and shared some qualities to create useful public places. The qualities ensures that the place is accessed easily; in which the visitors are engaging the services occurring there, the comfortability and unique appearance of the place, and the place's sociable sight; that visitors can meet their family, colleague and friends. For this reason, the PPS organization developed a diagram (Figure 16) as an evaluating tool to measure the place's suitability of use (PPS, 2022).

## Figure 16





#### **Example I: The Jinli Historical Street**

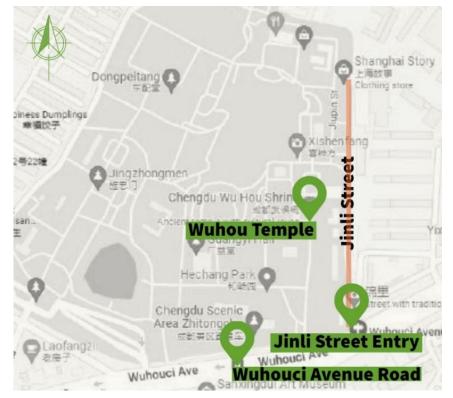
The Jinli historical street is known as the Shu Kingdom's first street (China Discovery, 2022) (Study in China, 2019). The street one of the Chengdu's ancient and frequented commercial places that goes back to the period of Three Kingdoms from more than 2000 years before which it is based in the South-West of Sichuan County in China (Study in China, 2019). Also, it can be noticed that the street is situated in the East part of Chengdu's memorial temple named Wuhou (Figure 17)

(Odynovo Tours, 2022). The street covers 30,000 square meters area of land in the Chengdu district (Study in China, 2019) (China Discovery, 2022).

The old buildings are preserved and well presented for recent uses or functions. It's a historic walking area and a landmark. The Western Sichuan's architecture is influenced the buildings style in the street. (Study in China, 2019). When you stepping the street, it shows a historical ambiance like going through the past (China Discovery , 2022).

#### Figure 17

Location Of Jinli Street (Google Maps, 2022) & (Author, 2022).



In fact, the street established for commercial purposes throughout the period of Shu Kingdom, in 2004 the street and its buildings were redesigned by the style of traditional architecture from Sichuan County along the dynasty of Qing (1644-1911) (Odynovo Tours, 2022). The street owns some stores and shops that will open until 22:00, while others will work all the night (China Discovery , 2022). The area contains areas for recreation, eating and drinking, and areas to stay like inns and hotels, shops and exhibitions for handmade traditional features. It's easy to find buildings with various functions along with the street including shops that serve different types of tea, stores of wine, workshops for art and handmade equipment, food tables (Odynovo Tours, 2022). The district that Jinli street located was received the award from UNESCO as the Gastronomy's first city in Asia in 2011. Food has a significant place in culture of Chengdu; therefore, the street provides from street snacks to dishes that special to the culture of the area (Study in China, 2019).

The street is a mix of traditional furnishing and details with modern facilities and easiness, it unites the historical atmosphere with modern uses (Odynovo Tours, 2022). In another say, there is a blending of modern functions within traditional details (Visit Our China, 2010). For instance, there is Starbuck's café that adapted into a traditional building (Figure 18), it shows that they give new functions to the old buildings.

#### Figure 18



The street has similarity with the street of Wangfujing in Beijing. In 2005, the street was added in the list of top Ten-Commercial-Pedestrian- National-Streets (Odynovo Tours, 2022). It's easy to find buildings with various functions along with the street including shops that serve different types of tea, stores of wine, workshops for art and handmade equipment, food tables (Odynovo Tours, 2022).

Access and Linkage. The total length of Jinli street approximately is 350 meters (Pang, 2021), with an entry gate situated on Wuhouci avenue, it's a road in Wuhou District, Chengdu, Sichuan in China. As shown in the (Figure 19), there is two options for the visitors to reach the entry of Jinli street either by private vehicle or public transportation like busses.

## Figure 19

Access To Jinli Street by Public Transportation (Google Maps, 2022) & (Author, 2022).



The street has been used by the buildings along with the street (Figure 20) the street is not too wide so it creates a strong connection with the buildings attached to it. Therewithal this connection links the visitors with the environment of the space (Figure 21).

## Figure 20

The Linkage of The Street's Space with The Attached Buildings (Ayu, 2019).





The Attraction Between Visitors with The Environment of Jinli Street (Iona, 2011).

The buildings help in alleviating the density of pedestrians on the street by welcoming them into the shops, cafes, restaurants, tea houses and other activity places, so the visitors can walk comfortably especially in the wider areas of the street (Figure 22). The sidewalks of the street are narrow that cannot be used as walking platform as much as the street, it seems to be used as an introduction step to each building on the street (Figure 23). The place shows less difficulties for people with special needs and carriages are placed in front of the gate to make easy jaunts for the visitors (Figure 24) and (Figure 25), but it doesn't indicate special dealing with the space for them.

Figure 22 Wider Areas of Jinli Street (Iona, 2011).





Sidewalks And Adjacent Buildings of Jinli Street (Klook, 2022).

# Figure 24

Jaunt Carriages of Jinli Street (Study in China, 2019).





Jaunt Carriages for the Use of Visitors (Klook, 2022).



**Comfort and Image.** The street kept its old buildings (Figure 26) that decorated with the western Sichuan style and elements of folk culture of Chengdu (Ayu, 2019). The red lanterns and the traditional environment of the space attracts the visitors and makes a significant impression on people who see the street for the first time (Figure 27). Also, the atmosphere of the street and its traditional environment (Figure 28) makes people to take benefit from every corner for taking photos. The street needs less safety and security controls since it's a pedestrian depended place (Figure 29) Everyone can see everything.

## Figure 26

*Old Buildings with Western Sichuan Style and Elements of Folk Culture of Chengdu (Ayu, 2019).* 





Traditional Environment of The Space (Ayu, 2019).





A Traditional Corner in Jinli Street (Ayu, 2019).

The place looks clean especially the pavements that covered by flagstone material (Figure 30). it's a paving material that suitable for harsh environments since it resists damage, degradation, and aging even while retaining its beautiful natural surface (Cold Spring, 2014).

# Figure 29

Pedestrian Depended Place (Iona, 2011).





Flagstone Pavements and Cleanliness of Jinli Street (Top China Travel, 2016).

Since the place is pedestrian-based street so they focused on continues movement, there is few or we can say no places to sit and rest (Figure 31). cafes, restaurants and teashops are the only sitting places, in this case it forces you to go to a café or restaurant to sit and relax. The seats are located in the outdoor and indoor of the buildings of Jinli street as sittings in the sun or shade (Figure 32) and (Figure 33). But some of the outdoor seats are located inconveniently that are placed on the edges of sidewalks which is risky and not secure to sit.

## Figure 31

Few Spaces for Sitting (Study in China, 2019).



Figure 32

Indoor Sitting (Study in China, 2019).



Outdoor Sitting and Inconveniently Located Seats (Tupianlingang, 2016)



**Uses and Activities.** Jinli street is open all the days of the year, but the comfortable times are the months of March-June, as well as September-November. It shows that the seasons of fall and spring are the most suitable times in the area, while the summer is little stuffy and its winter has a moist air, all these because Chengdu district has a high humidity in the air. The street owns a beautiful sight during the day, at the same time it has an awesome view in the night that influenced by the red lanterns along with the street in which illuminates the street with red light, therefore it grabs the attention of visitors (Ayu, 2019).

The place is used by people of different ages (Figure 34). For instant, there is artists for handmade features such as figuring with clay, painting with sugar, features from paper cutting, all these are catching child attention and at the same time they refer to nostalgic pleasure for elders (Top China Travel, 2016).

## Figure 34

Basic Pleasure and Activity of Childhood (Jin & De Wet, 2022).



Different options of activities are occurring in the place, they are:

- 1. Traditional performances are regularly playing in the ancient theaters.
- 2. Cultural artists performing their works such as figuring with clay, painting with sugar, features from paper cutting, displaying shadow cinemas, and etc.
- The street provides a plenty type of snacks from local taste for the visitors (Figure 35).
- 4. The street could hold wedding ceremonies while accompanied by tourists to create unique memories.
- 5. Cultural music, dances with traditional customs are everyday activities done on the Jinli street (Figure 36).
- 6. Celebrating Valentine Day on the street.
- 7. Celebrating Moon Day in the middle of Autumn season, and festival of lanterns.
- Eating challenge of Zongzi while celebrating the festival of Dragon Boat (Pang, 2021)

9. Purchasing traditional elements and products from traditional shops (Figure 37) to make unique presents for your loved once. (Crenoveative, 2022) (Ayu, 2019).

# Figure 35

Jinli Snack Street (Visit Our China, 2010).



Figure 36

Folk Music, Plays, and Local Customs (Visit Our China, 2010).





Traditional Shops and Elements in Jinli Street (Crenoveative, 2022).

**Sociability.** Jinli street is an environment for group gatherings and meeting friends (Study in China, 2019). It's a bustling and fascinating place (Figure 38) that presents the culture of the area, so it's nice to bring friends & relatives to this place.

# Figure 38

Bustling Night view of Jinli Street (McNicol, 2020).



It's a place for happiness and smiling that visitors from different country can experience cultural performances within the street's environment, it provides a platform to display local art pieces (Ayu, 2019). The street is known for its activities like figuring with clay, painting with sugar, features from paper cutting, displaying shadow cinemas, and embroidering fabrics, so the pedestrians can have food and snack to taste while they are watching the showcased activities (Odynovo Tours, 2022). The place used by the local people and a mix of ethnic groups of people, since the street have places to stay in like restaurant, cafeteria, tea and bar houses, and inns. Beside the tourists, locals are the main visitors of the street, particularly they visit the street during the night, this is because its awesome night environment (Top China Travel, 2016).a stage designed from wood in the mid-way of the street to display traditional plays that is supported by people for many years in the area (Figure 39), the stage is a collector of local people and tourists with actors of the stage when performing Opera, shadow cinemas, and other plays related to Sichuan district (Odynovo Tours, 2022).

## Figure 39

The Theater of Wuhou in Jinli Street, Shows Acters When Performing Wu Fu Movements While Pouring Cups by Tea (Thierry, 2014).



#### **Example II: Mumhane Street**

The bright age of the region started with the settlement of Genoese in the 13th century (Eyice, 1969). Genoese people had many commercial activities in Galata and made it the busiest port area of Istanbul (Küçük, 2017). According to the inscription on the Mumhane Gate, the walls of the region in Kemeraltı were built in 1446 (İnciciyan, 1956). In the 17th century, many workshops were located around the gates on the east part of the region walls, and they reflect their names on the gates of the region walls. For instance, near the Mumhane Gate, wax was produced by melting animal fat (Kömürciyan, 1988). So, it takes its name from the function occurring near the gate.

Depending on the studies done by Küçük in 2017, there is a typical neighborhood formation with residences and coffee houses in the region, it is noteworthy that commercial units are concentrated in large streets such as Necatibey, Mumhane street and Hoca Tahsin street (Küçük, 2017). According to a report published in the Beyoğlu Belediyesi website on 30 June, 2021, Mumhane street was renewed and prepared for the post-pandemic period by the mayor of Beyoğlu (Beyoğlu Belediyesi, 2021). The report explained that; Beyoğlu which is one of the busiest districts of Istanbul, the works started to renew the streets and prepare them for the post-pandemic period. Within the scope of the work carried out by the Beyoğlu Municipality Directorate of Science Affairs, Mumhane Street, one of the busiest streets in Karaköy, was renewed and put into service again. Infrastructure works and necessary works for the landscaping of the street were carried out, also the waste water and rain water channels were cleaned.

Access and linkage. The length of Mumhane street is more than 400m, and an average width about 3m (Google Maps, 2023 a) with an entry situated on Maliye street, it's a road in Beyoğlu district, İstanbul, in Türkiye. As shown in the (Figure 40), there is two options for the visitors to reach the Mumhane street either by private vehicle or public transportation like busses and electric train.

Access To Mumhane Street by Public Transportation (Google Maps, 2023 a) & (Author, 2023).



The street has been used by the buildings along with the street. It has a tight width so this creates a strong connection with the buildings attached to it (Figure 41). Therewithal This connection links the visitors with the environment of the space. The building frontages are transparent, it creates a sense of visibility from outside to inside and vice versa. In this case the visitors can see the shops what they sell or serve (Figure 42), and they can predict the crowdedness or emptiness of the restaurant/café.

## Figure 41

<image>

The Linkage of The Street's Space with The Attached Buildings of Mumhane Street (Beyoğlu Belediyesi, 2021).



Interior Visibility from The Outside (Beyoğlu Belediyesi, 2021).

The area that Mumhane street situated in has many active streets as Mumhane street, so it takes the overloaded visitor from the street. It helps the people to walk smoothly and easily through Mumhane street. Also, the buildings help in alleviating the density of pedestrians on the street by welcoming them into the shops, cafes, restaurants, and other activity places, so the visitors can walk comfortably (Figure 43). The place shows less difficulties for people with special needs as it has low separation levels between the street, sidewalks and the buildings on the street (Figure 44), but it doesn't indicate special dealing with the space for them. The Sidewalks are narrow and used as a continuous sitting and signage place for the buildings (Figure 44) that cannot be used as walking platform as much as the street.

#### Figure 43

Comfortability Of Walking Through the Place (Beyoğlu Belediyesi, 2021).





Sidewalks As Sitting and Signage Place for The Buildings (Beyoğlu Belediyesi, 2021).

**Comfort and Image.** The area is very rich in terms of religious structures and old buildings. So much so that, at the beginning of the 20th century in Kemeraltı, there were four Greek Churches, an Armenian Church, six Russian Monasteries and two mosques (Küçük, 2017). According to the analysis done by Küçük in 2017, one third of the buildings in the study area are registered (Küçük, 2017). This shows that the region is quite rich in terms of historical structures. Therefore, the area spontaneously Mumhane street considered as a historical place.

Most of the old buildings at Mumhane street are renewed for their new functions, for instans in the (Figure 45) ground floor of the building outlined with green color is renewed according to its new function but the first floor outlined with blue color remained as its because it has no function for now. But some of them are left as it was for instans, the Aziz Nikola is a Turkish Orthodox Church (Figure 46) dates back to late 16th century, it wasn't renewed after it was damaged from a fire in 2003 (Niko, 2018).

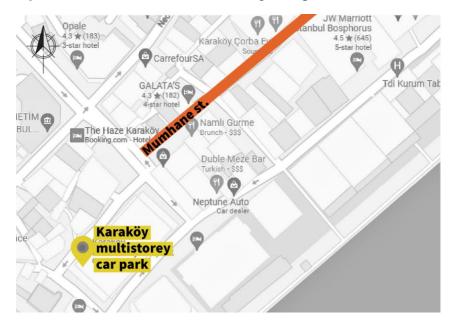
## Old Buildings of Mumhane Street (Mumhane (26) Cd., 2019).

# Figure 46

Aziz Nikola Church at Mumhane Street (Niko, 2018).



Although there is a Karaköy multi-storey car park near Mumhane street (Figure 47), but it does not fulfil the demand for parking (Küçük, 2017). People are park their cars on the street whenever they found an empty space (Figure 48), the parked cars on the street works as visual barrier and affect the flow of pedestrian movement.



Car Parking Place Near Mumhane Street (Google Maps, 2023 a) & (Author, 2023).

# Figure 48

Side Parking On Mumhane Street (Mumhane (18) Cd., 2019).



The street has well-managed, clean and pleasant places that friends and families can enjoy while staying there (Figure 49). In another side, some places of Mumhane street appears dirty because of throwing useless elements on the sidewalks (Figure 50) and texting, drawing and painting on the walls faced the street (Figure 51). It creates a bad impression for the street and effects the image of the place.

Enjoyable Places of Mumhane Street (Beyoğlu Belediyesi, 2021).



# Figure 50

*Thrown Useless Elements on the Sidewalks of Mumhane Street* (Mumhane (41) Cd., 2019).



# Figure 51

Visual Pollution by The Walls of Mumhane Street (Mumhane (31) Cd., 2019).



The street needs more safety and security controls since it's a shared street of both pedestrian and vehicle that causes accidents and injuries. There is few or we can say no places to sit and rest, cafes, restaurants and teashops are the only sitting places, in this case it forces you to go to a café or restaurant to sit and relax. The seats are located in the outdoor and indoor of the buildings of Mumhane street as sittings in the sun or shade (Figure 52).

#### Figure 52



Outdoor And Indoor Sitting (Beyoğlu Belediyesi, 2021).

**Uses and activities.** Mumhane street used by people for daily activities like working inside the buildings located on the street or gathering and eating with family and friends (Figure 53) or used as an access to reach another place. There are no considerations for children to spend time in the street, mostly used by adults and young people; this is because of the activities which are occurring there.

## Figure 53

Gathering and Eating in The Mumhane Street (Beyoğlu Belediyesi, 2021).



The exchanges of Information and news carried out in front of shops and houses, but recently, it has left its place to large office buildings (Küçük, 2017). The increasing need for data, information and goods to be sent from one place to another, which is necessary for the execution of financial, commercial and cultural affairs, has led to the need for more personnel and space, and this has led to the construction of office buildings (Küçük, 2017).

Areas such as hotels, restaurants, casinos and cinemas and entertainment venues such as coffee houses, cafes, hotels, theaters have emerged to serve those working in the area and those coming from outside. There are also personal, small businesses such as hairdressing and tailoring retails (Küçük, 2017). After 2012, luxury cafes, restaurants and hotels started to increase rapidly. Their improvement has also animated the streets where the unused buildings are located, and led the buildings to be used for different functions (Küçük, 2017). Most of the buildings on the street consist of multi-storey old structures. And their floors from ground level are adapted to the recent functions. The street consists various types of functional buildings including religious building, offices, restaurant/café, cultural building, public bath, clothing stores, accessories and perfume shops, industrial buildings, residential buildings (Figure 54). These buildings animate different options of activities such as gathering, sitting and eating, worshipping, visiting, working, shopping, etc.

#### Figure 54



Land Uses of Mumhane Street (Küçük, 2017) & (Author, 2023).

**Sociability.** Depending on the functional changes that have taken place in the Kemeralti region in recent years, the profile of the people coming to the region is also changing. In the past the area was visited by middle-income people and artisans who sold industrial materials in the street (Kıray, 1998). But due to the new developments that is taking place in the area, the region and spontaneously Mumhane street has started to be preferred by people with higher incomes as well (Küçük, 2017). The area and its streets are among the places advised by the trusted webpage of Tripadvisor for the tourists from different countries. The area used by people from different backgrounds, because it houses many ethnic groups of people in the past and it continue to collect different people with recent activities occurring in the street. Talking with friends in a restaurant or a cafe are some of the enjoyable moments that people can have at Mumhane street (Niko, 2018). Besides the Turks, many ethnic groups such as Greeks, Armenians, Latins, Jews and Russians resided in the region, but the densest ethnic among non-Muslim groups was the Greeks (Kömürciyan, 1988). Mumhane street is a place for family gatherings meeting friends and relatives and spending quality times with them during the day and night (Figure 55) & (Figure 56).

#### Figure 55

Meeting Friends End of The Day in A Soup Restaurant Located on Mumhane Street (Somuncu, 2022).



Group Gatherings During Daytime in The Mumhane Street (Beyoğlu Belediyesi, 2021).



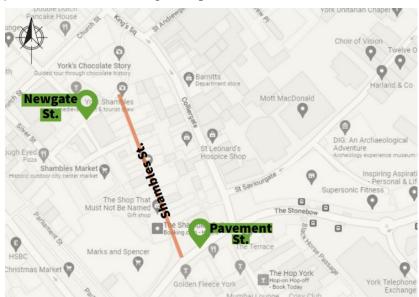
#### **Example III: The Shambles Street**

The Shambles is one of the Well-known Street around the world (The Shambles York, 2021). It is a well saved street in medieval style of Europe that situated in England center of York city (Dedipya, 2022) (Faith, 2023). An art work in (Figure 57) shows the Shambles in 1881. Its length is more than 115m, running from Newgate to Pavement Street (Google Maps, 2023 b) (Figure 58).

# Figure 57

The Shambles Street and St Crux Church In 1881 (York Art Gallery, 1881).





Location of Shambles Street (Google Maps, 2023 b) & (Author, 2023).

According to a plaque hanged near the street (Figure 59) explains about the street, that it was mentioned inside the "Domesday Book", it is one of the oldest books from the government records that kept in the local archives, which contain a great deal of information about England in the 11th century (The National Archives, 2022). The plaque extends the explanation as, the name of Shambles comes from 'Shamel', the word is an expression for the stands where the meats come to show on it.

## Figure 59

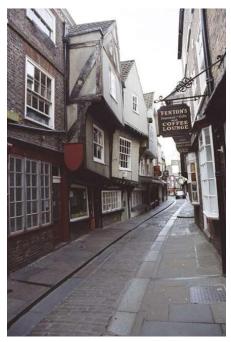
Descriptive Plaque Hanged Near Shambles Street (Seabridge, 2012).



It is a well saved old street of Europe. It has a small width filled with timber structured buildings (Figure 60) in which 13<sup>th</sup> century is the time period they were related (Dedipya, 2022). The buildings on either side have been generally restored by the city since 1950 (TRCAHMC, 1981). Most of the buildings on the street are belong to the years between 1350-1475 (History of York, 2013). It is the one of the survived streets therefore, it attracts tourists around the world from the beginning of twentieth century (Dedipya, 2022).

#### Figure 60

Narrow Path of Shambles Photographed in 2006 (Garbutt, 2006).



The shambles have a home meaning for slaughterers, in a way that each meat shop selling a kind of meat (Figure 61), the figure shows a man waiting with a sitting posture beside its meat shop, between the buildings that have jettied upper levels. the photo taken between the years of 1870-1920. Although the street was an area of slaughterers, recently it works as a place of different shops and retails (The Shambles York, 2021). In some sections of the Shambles width of the street is so small and a person with open arms can easily touch the walls of opposite side on the street and overhanging timber-framed fronts of the buildings (History of York, 2013) and leaning them inside a path which opposite buildings touch one another at the roofs (Dedipya, 2022). This is because of two purposes; first, it was preserving the materials used on the elevation of buildings (Figure 62). Second, it blocked the

sunlight directly touching the meats underneath the buildings to save them from putrefaction because in that time they didn't have refrigerator (Faith, 2023). The wide window brinks represent that they were used as meat exhibition space (Dedipya, 2022). Carts are travelled through the street as meat collectors and distributers between the slaughter shops. Also, they were work as transporting vehicles for dead bodies that belonged to the plague time (Satxwdavis, 2018).

## Figure 61

Meat Shop on The Shambles Street (Historic England Archive, 1870).



Unfortunately, the street was far from the sanitation system of the modern day. Therefore, it became a clear problem the waste disposing that caused by the animal slaughters in the area. the only solution for this problem was rising the street from both sides to shape a channel to get ride from the wastes (Figure 63), this helps the slaughters to clean the area from blood and animal wastes two times a week (History of York, 2013). Since the floors except the ground are places without tax, therefore the occupants used them as living spaces, but the ground floors they had to pay tax. Jetty style buildings are appeared on the street (Figure 63), which it was a technique from medieval architecture that overhanging the floors above the ground floor to create bigger spaces for living without wasting the street space (Dedipya, 2022).

## Figure 62

Wattle And Daub Covered Buildings (Dedipya, 2022).



Nowadays, the street become a clean, bright, and open space for offices, and eating and leisure places (Dedipya, 2022) that activated with tourists and shoppers (Figure 67) (Martin, 2013). The street owns a range of markets for the needs of every person who visit the area (Dedipya, 2022).

## Figure 63

The Redeveloped Street of Shambles (Dedipya, 2022).



Access & Linkages. People may simply reach The Shambles Street by using train station of York (Faith, 2023). The street has been used by the buildings along with the street. the street is narrow and all the buildings are close to each other in a way, it creates strong connections within the space. Therewithal This connection links the visitors with the environment of the street. The windows of the buildings are wide that it increases the visibility between inside and outside (Figure 68).

A clear side walk works as an introduction platform that leads people from the street to the entrances of buildings and vice versa. At the same time the sidewalks are working not separate but as the street itself, because the street consists of two parts: the sidewalks and the channel in the middle, together created the street. (Figure 64). As mentioned before the street has some areas that are narrow so it creates some discomfort ability during walking through the street, The projected upper levels of the buildings protect the visitors from the sunrays and rain water (History of York, 2013). Depending to the low levels between the street and the building entries (Figure 64), the place shows less difficulties for people with special needs, but it doesn't indicate special dealing with the space for them.

#### Figure 64

Sidewalks Of Shambles Street (Dedipya, 2022).



**Comfort & Image.** The street has many options of seating and gathering including inside and outside seating (Figure 65) and (figure 66). Some café, offering a wide selection of drinks in both outdoor and outdoor seating places (The Shambles York, 2018 d).

## Figure 65

Outdoor Gatherings at Shambles Street (The Shambles York, 2018 d).



## Figure 66

A Church at The Shambles Street Functioning as A Tea Room Place (Laverack, 2012).



The shambles street is a place of historic buildings, these building with their new functions are welcoming the visitors, and it creates a significant impression on them. People walking across York's shambles street frequently stop to observe the historical homes and tilting structures (Satxwdavis, 2018). The historic environment of the place makes people to take photos of the buildings or themselves beside the buildings. Shambles street was chosen as 'The most picturesque street of Britain' among the fifty-one Historic Streets, according to the shortlist results get from an online-survey done by expert panellists in 2010 (Dedipya, 2022).

The majority of streets of York city have been modified and enlarged, but Shambles' street kept its identity and historic medieval design (Satxwdavis, 2018). So, it lets the street to be used only by pedestrians. Barriers are installed at the junction of Shambles-Pavement Street end (Figure 67) to keep the pedestrians safe and secure during the 'New Year' events (BBC News, 2021).

#### Figure 67

Safety and Security Measurements on Shambles Street (Pinder, 2021).



Except the seating places of cafes, restaurants, and tea rooms there isn't extra free seating furniture's on the street, because the street is already narrow, putting furniture's for seating makes the street difficult to walk through. Therefore, the street kept clear from street furniture and visual barriers. The street received the award for being the most exciting and photographic place of Britain. Also, it awarded by "Google Street View" for being the Britain's most favourable historical street among the people (Faith, 2023).

The street has a little declined curve that is used for discharging both the occupants waste and blood from slaughtered meat (Satxwdavis, 2018). Therefore, the street for many days smelled terrible till a rain water came and removed away the wastes (Satxwdavis, 2018). But recently, the street is a clean and sanitized place surrounded by restaurants, cafes, and retail shops that provide a variety range of activities for the visitors.

**Uses & Activities.** The space used by people through different activities like meeting/gathering, eating/drinking, and shopping. According to the street's active performance during the days in a week it used to be open from early morning till late of sunset (Faith, 2023). Shambles street is bustling with buildings like cafés, boutiques and the shops, is now a significant place for tourists and an important shopping area in York city (Dedipya, 2022). The place is used by people from different ages, it is the reflection of activities which done on the street (Figure 68) and (Figure 69). The street become a place for children's and teenagers to visit after it become popular for its relationship with the movie named 'Harry Potter' that some of the scenes of it are filmed in this street (Faith, 2023).

### Figure 68

The Street Used by People from Different Ages, St Crux Church York Used as A Tea Place (Alh1, 2008).



The Street Used by People from Different Ages, Harry Potter Themed Shops in The Shambles Street (Dyer, 2018).



The street houses various options of activities, some of them including:

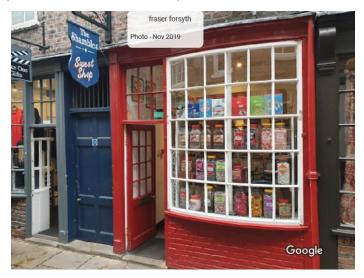
- In a historical structure, a local tea house offering hot/cold meals. Also, it has a courtyard for people who want eat at an open to air place (Figure 70) (The Shambles York, 2022).
- 2. A small sweet store in the street (Figure 71) prepares traditional sweets beside its modern once (The Shambles York, 2018 c).
- 3. The chocolate shop on the Shambles (Figure 72) creates handmade products with high quality (The Shambles York, 2018 a).
- 4. A luxury jewellery shop situated on the street (Figure 73), precious stones are used in the products (The Shambles York, 2019 b).
- 5. A store of ancient elements (Figure 74) that sell (coins, medals, bank notes, antiques, fossils, etc.) (The Shambles York, 2018 b).

Tea House And Its Courtyard on The Shambles Street (The Shambles York, 2022).





A Small Store of Traditional Sweets (Forsyth, 2019).

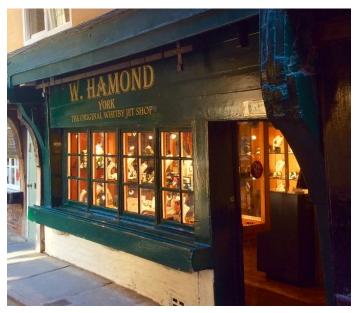




Chocolate Shop on The Shambles Street (Rossi, 2023).



Jewellery Shop Situated on The Street (The Shambles York, 2019 b).





Store Of Ancient Elements (The Shambles York, 2018 b).



**Sociability.** Shambles street has a bustling environment for group gatherings and meeting friends, it gives a feeling to the visitors as they travel into the time. It's a happiness and enjoyable place that people can walk while eating small handful things, taking photos or talking. Some boutiques in Shambles become more than ten years they are working there, that they are serving customers from different cultures and countries at the same time the locals (The Shambles York, 2019 b). The Shambles Street known as "Diagon Alley" which was mentioned in the Harry Potter-

movie, it created the opportunity to open Harry potter-styled shops (Figure 75) that attracting its fans from different countries and local people (Faith, 2023).

#### Figure 75

Harry Potter-Styled Shops (The Shambles York, 2019 a).



#### **Evaluation Of the Similar Examples**

The three examples are analyzed in a systematic approach, which it made the comparison between them easy and understandable. The three similar examples are evaluated depending on the four qualities and their considerations that makes a place great (PPS, 2022), including access/linkage, comfort/image, uses/activities, and the sociability (Table 2). For the evaluation of numerous public places from every country, the organization of PPS (Project-for-Public-Spaces) has established and shared some qualities to create useful public places. The qualities ensures that the place is accessed easily; in which the visitors are engaging the services occurring there, the comfortability and unique appearance of the place, and the place's sociable sight; that visitors can meet their family, colleague and friends.

The three similar examples are evaluated and the outcomes of the evaluation can be explained as the table below, it shows that the  $2^{nd}$  and  $3^{rd}$  examples have a good level in the access and linkages qualities, while  $1^{st}$  example has a fair level. The  $1^{st}$  and  $3^{rd}$  example have a good level in comfort and image qualities, but the  $2^{nd}$ example has a fair level. All the examples have a good level in the uses and activities and sociability. As a general the evaluation indicates that the  $3^{rd}$  example has a good level in all the qualities. It means that, the planed proposal for case study area could take benefit from the third example.

# Table 2

Qualities	Considerations	Places		
		Example 1	Example 2	Example 3
Access & Linkages	Interior visibility from the outside	Fair	Good	Good
	Connection between the space and the adjacent buildings	Good	Good	Good
	Comfortability of walking through the place	Fair	Poor	Good
	Sidewalks lead to and from the adjacent areas	Poor	Good	Good
	A flexible place for people with special needs	Fair	Good	Poor
	Avarage	Fair	Good	Good
	First impression of the place	Good	Fair	Good
	Enough places to sit	Fair	Fair	Poor
	Conveniently located seats	Fair	Fair	Fair
	Sitting options (in the sun or shade)	Good	Good	Fair
Comfort & Image	Cleanliness of the place	Good	Fair	Good
	Safty and security of the place	Good	Fair	Good
	Opportunities for taking photos	Good	Poor	Fair
	Pedestrian depended place	Good	Fair	Good
	Avarage	Good	Fair	Good
Uses & Activities	The space usability by people	Good	Good	Good
	The space used by people of different ages	Good	Good	Good
	Different options of activities are occurring in the place	Good	Fair	Fair
	Avarage	Good	Good	Good
	A place for group gatherings	Good	Good	Good
	A place for meeting friends	Good	Good	Good
	A place to bring friends & relatives	Good	Good	Good
Sociability	A place for happiness & smiling	Good	Good	Good
	The place used by the local people	Good	Good	Good
	The place used by a mix of ethnic groups of people	Fair	Good	Good
	Avarage	Good	Good	Good

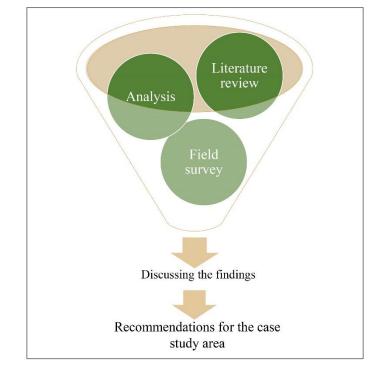
## Evaluation Of the Similar Examples (Author, 2023).

## CHAPTER III Methodology

The streets activity of Arab neighbourhood starts with the opening of shops of Muzafaria street, Bata Street and Bazaar-Qaisary and it ends with closing them, during this period the visitors use the streets as paths or places to reach Bata Street and from there to Bazaar-Qaisary either by vehicle or pedestrian. Beside that the streets hold a historical and cultural value, they used as car parking, while they are places to be used for many beneficial activities. Arab neighbourhood is a place that its streets surrounded by local dwellings which physically left in a bad condition and closing all the doors with concrete blocks to avoid crime and other security issues. The research focusing on enliven the neglected historical streets through gaining social life needs that is able to serve pedestrians at the same time returning its value and meaning to the streets. For this reason, the research concentrates on one of the streets in the area and chose as a case study to provide a narrow and intense study for the research. It is concentrating on converting this street from a car parking facility to a more effective and more responsive environment and a place for social living needs by commercializing and socializing the place.

### **Research Design**

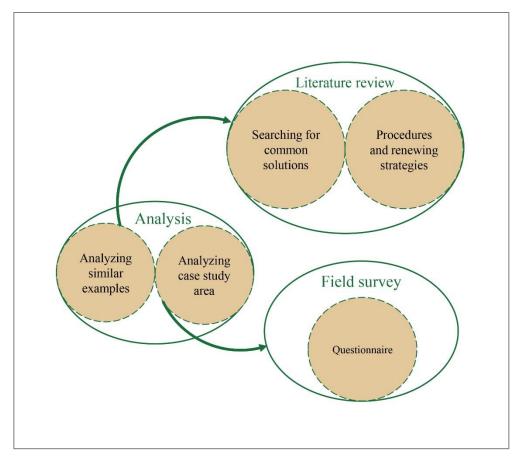
Depending on quantitative and qualitative methods, the research used a descriptive approach for the study to investigate the potential of the Arab neighbourhood's street to be used as pedestrian depended commercial and socio-active place. For this reason, the study handles wide research as a literature review to show the concepts of commercial, socio-active and pedestrian places and explain their benefits. The research design divided into three substantial key points which are literature review, analyses and field survey (Figure 76), each key points will breakdown into sub-contents (Figure 77), the complete figure designed to orient the research to its goals.



The Three Key Points of the Research Design (Author, 2023).



The Sub-Contents from The Three Key Points of the Research Design (Author, 2023).



#### First Key Point (Literature Review)

The main key point literature review focus on other studies that related to the topic of the research for common solution at the same time procedures and renewing strategies for historical streets. For this reason, it explains about street, its history and street types. At the same time, it discusses the concept of commercial place, socio-active place and pedestrian place, and their benefits. Additionally, it conducts the analysis and evaluation for the related researches through selected similar examples that derived from different countries.

### Second Key Point (Analysis)

Analysis is the second key point of the research design which is firstly, focuses on analysing of similar examples that derives from different countries inside the second chapter of the research, at the same time, the problems and objectives of analysed related researches will be highlighted according to determined objectives for the case study area. Secondly, analysis the existing situation of the case study area which is the selected street of Arab neighbourhood located in Erbil city. The analysis of case study area will be located within the fourth chapter of the research.

#### Third Key Point (Field Survey)

The last key point of the data collection procedure is field survey which is focused on the community needs, believes, perspective, and how the community see, read and feel the place by conducting a list of structured questions, the prepared questions are directed to the participants such as residents of the neighbourhood, the users of the street and pedestrians since the research produced to serve the pedestrians, so their ideas and suggestions should be taken in consideration. The forty-six questions of the survey are distributed on five headings such as personal information, social information, cultural information, commercial street, historical streets of Erbil city, and Arab neighbourhood & it's streets. The replies are taken from two groups of people, the first group of was the users of the case study area, and the second group was the inhabitants of the area. From the total 205 replies, 31 replies are from the inhabitants of the neighbourhood, and 174 replies from the users of the area. After the questionnaire results and analysis of case study area, the research presents a proposed design for the case study area to reflect the outcomes of the study. The proposed design consists of developed plan and elevation of the determined street of Arab neighbourhood.

#### **Sampling and Participants**

The study established a survey to take data from people. For this reason, a questionnaire prepared that consisted of forty-six questions under five categories such as personal information, social information, cultural information, commercial street, historical streets of Erbil city and Arab neighbourhood & it's streets. The survey replies were taken from two-hundred and five people. The samples were taken from two groups of people, the first group of sampling was the users of the case study area, and the second group was the inhabitants of the area. As mentioned in the limitation of the study, the area was emptied from residents just few of them still live in the area. Therefore, hardly found 31 inhabitants that replied the survey, and 174 respondents were users of the area.

#### **Data Collection Tools/Materials**

The observation of case study area, questionnaire survey and analysing and evaluating similar examples are main tools of collecting data in this study. While the Microsoft excel, google form, auto CAD and photoshop software are the materials used for this study. The Microsoft excel used to create the evaluation table for the analysed similar examples, then using the results of evaluation to figure a general expectation for the case study area. The table designed from a number of columns including qualities, considerations and places. While the questionnaire was created by the Microsoft excel as a simple table for some extend then it transformed to a google form. The form was established by entering the structured questions one after one. Then the questions were replied by the respondents and it results with significant findings. Then, using the findings of evaluation to figure a local expectation for the case study area. Also Auto CAD used as a software to draw maps for analysing the case study area, which it results in drawing location map, existing land use map, existing building floor map. The Auto CAD and Photoshop software are used to figure a proposed plan and elevation for the case study area.

#### **Data Collection Procedures**

The data collected through three main collective approaches including an observation method for the case study area, a qualitative method of evaluating analysed similar examples and case study area, and a quantitative method of describing the questionnaire. At first, evaluating the analysed case study area through the evaluation table (Table 3). The table was created from considerations of four qualities that makes a place great by (PPS, 2022). The evaluation is based on measuring the level of the qualities and considerations for each example as (Good, Fair, Poor). Its result will show the average level of qualities of Arab neighbourhood's street, and the lacks in the qualities of the case study area will be filled by the expectations of respondents of the questionary survey and general expectations that gained from analysing similar examples. It means, the result of questionary survey will be an element of criteria to deal with the case study area.

Table 3

Qualities	Considerations	Case stusy area
Access & Linkages	Interior visibility from the outside	
	Connection between the space and the adjacent buildings	
	Comfortability of walking through the place	
	Sidewalks lead to and from the adjacent areas	
	A flexible place for people with special needs	
	Avarage	
	First impression of the place	
	Enough places to sit	
	Conveniently located seats	
	Sitting options (in the sun or shade)	
Comfort & Image	Cleanliness of the place	
	Safty and security of the place	
	Opportunities for taking photos	
	Pedestrian depended place	
	Avarage	
	The space usability by people	
Uses & Activities	The space used by people of different ages	
Uses & Activities	Different options of activities are occurring in the place	
	Avarage	
	A place for group gatherings	
	A place for meeting friends	
	A place to bring friends & relatives	
Sociability	A place for happiness & smiling	
	The place used by the local people	
	The place used by a mix of ethnic groups of people	
	Avarage	

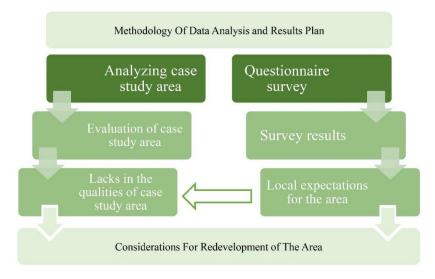
The Prepared Evaluation Table for Case Study Area (Author, 2023).

The questionnaire consists of five categories such as personal information, social information, cultural information, commercial street, historical streets of Erbil city, and Arab neighbourhood & it's streets, and each category includes a number of questions that directed to the respondents. After that, the research findings section will describe and explain the results of the questionnaire survey to determine the community's needs, believes, perspective, and how the community see, read and feel the place. At the end, the result of survey and the result of evaluation will help in creating a diagram as a considerations proposal for redevelopment of the case study area.

#### **Data Analysis Plan**

The study was started with the question of "can we use the street Arab neighbourhood for a better purpose rather than its current use". And followed with creating the research title as "The Potential of Historical Streets to Be Used as Pedestrian Depended Commercial and Socio-Active Places" then the case study area was chosen as Arab neighbourhood street in Erbil city. The study continued with collecting data on the problems, strengths, and weaknesses of the area, also getting information from similar examples of the streets of other countries that serve the purpose of the study, at the same time discussing the aim and goal of the study. After all this, the study got a clear perspective to participate the community in the study by a prepared questionnaire survey. The findings section gets a clear explanation after getting the survey results. The recorded data in the findings section helped in pointing some considerations for the redevelopment of the area (Figure 78) and recommending some strategical points that could be used for the case study area.

#### Figure 78



## Methodology Of Data Analysis and Results Plan (Author, 2023)

## CHAPTER IV Findings and Discussion

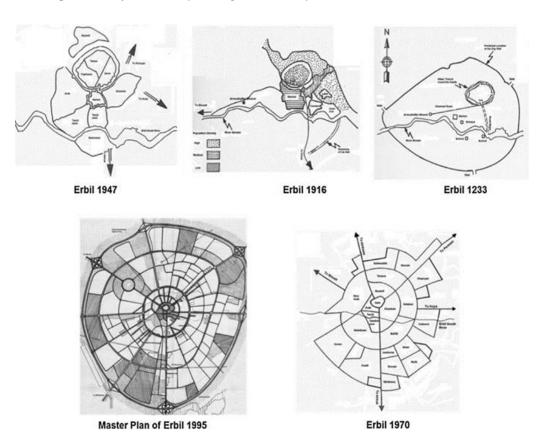
## Case Study Area

## History of Erbil City

Erbil and its other spells such as Arbil, Irbil, Arbailu, Arbela, and locals using the word of Hawler when they are calling for the city (Gunter, 2023). Erbil is among the ancient cities on the earth, the city began with group of settlements and later through 6000 years transformed to the today's citadel in the centre of Erbil city (Morris, 1994). It is a walled community over an impressive oval and layered hill established by various generations of inhabitants dwelling and settling over the same site (UNESCO, 2022). The city known as the capital of North region of Iraq from 1970 (Yaqoobi, 2012) & (Gunter, 2023). The city considered as a significant area of trades that has a strategical position in relation to the roads of south Iraq, and shares border with Iran and turkey countries. Erbil was listed among the ancient civilized cities on the earth with its various original styles of architecturally oriented heritages that dates back to "Third century" BC. (Gunter, 2023).

The Doxiadis Associates in 1958 explains the urban expansion of Erbil, argues about citadel of Erbil that by time has passed through three phases; the first phase when the whole Erbil city was the Citadel by itself. The second phase were the citadel displaying the mass of Erbil city. The third phase is that the Citadel displays the minor portion of the city and then represents itself as a residential neighbourhood like other districts (Doxiadis Associates, 1958). Within the second phase, beside the growth of population in the Erbil citadel, the expansion of urban begin in the city by starting from creation of small sized neighbourhoods like (Mustawfi, Khanaqa, Taajil, and Arab) on the empty lands around the citadel (Figure 79).

#### Urban Expansion of Erbil City Along the History (KRG, 2009).



The economy of the city is primarily supported by agriculture, tourist, and personally developed companies. Additionally, compared to the other areas of Iraq, the calmness and safeness in the area drawn people with investment personalities to invest (Khoshnaw, 2018). Moreover, with the opening of (Erbil International Airport) in 2010 also allowed the city an opportunity by linking to numerous cities of Europe and also Middle-East (Khoshnaw, 2018). Adding the ancient citadel of Erbil into the list of UNESCOs "World Heritage Sites" in 2014, in relation; Erbil citadel has been passing through an operation of conservation since 2007 (Ambiente Risorse Sviluppo Progtti, S. P. A, 2011). The protection of Erbil citadel as the process's part, the determination of A and B buffer zones on the urban context of traditional area (Figure 80), including the heart of the city; the surrounded residences are submitted to the process of conservation (Farah, 2016). The Buffer Zone A, its bounders precisely the area around the citadel, that determined with red line which contains the (Tajil, Bazar-Qaisary, Mustawfi, Khanaqa and Arab) neighbourhoods. Because of their heritage values the area are highly protected. Buffer Zone B: its boundary starts

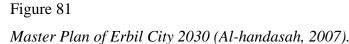
exactly from the ending boundary belt of Buffer Zone A along with Sultan Muthafar Street and the 30meters ring road determined with blue line includes the surrounded area of Minaret Garden. These areas are submitted to lesser protection in comparing to the Zone A. (Mosa, 2022).

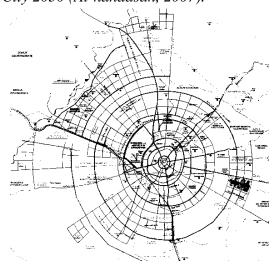
The city continues to grow in respect to the citadel shape, the top view of the city shows a growing of repetitive circles that each one displays a major road called by their width from the starting circle " 30m, 40m, 60m, 100m streets and 120m (Figure 81), 150m highways" which is the road of 150m till now is under construction, these circular roads are connected with radial shaped streets.

## Figure 80

The Erbil Citadel Buffer Zones (Ambiente Risorse Sviluppo Progtti, S. P. A, 2011).







#### History of Arab Neighbourhood

Arab neighborhood is considered one of the ancient districts in Erbil which based outside of Erbil-Citadel, in which South-western side of Erbil-Citadel is the location of the neighborhood (Figure 82) (Akram, 2016). It's among the earliest continuously occupied areas which listed in the UNESCO's World-Heritage-sites (Rudaw, 2022). Considering it, the authorities are abandoned the area without noticing it gradually become car parking grave in the city (Rudaw, 2022). At first the district known with the name of "Yangy-Mhala" which means New-Quarter, then it became Arab-Quarter, it gets the name from the Arabian people who came from the places near Erbil city, were the majority of them live and based in the Arab district as bread makers, and some others bred animals (Abbas A. K., 2019). The neighborhood streets were social environments for gatherings of elder people from different ethnics who live there, open space for children to play, and selling platform for street vendors. Streets or pedestrian places are depended platforms by street vendors to connect with their clients. Accordingly, the streets used by people as a platform to show, provide and sell equipment as much as they can (Barter, 2009). Actually, the streets of old neighborhoods in Erbil especially Arab district are narrow, because they were used by pedestrians and carriages or carts as most of the historical streets of other countries. Considering to this, Walaa and Wesam Mehanna in their study mentioned the appropriateness of narrow streets to be used by pedestrians rather than by vehicles (Mehanna, 2019).

It's almost been 200 years over the construction of Arab district which now suffering from between the preserving decision or approaches of developments and rehabilitation ideas (Rudaw, 2022). It was found that Erbil city was allocated to two portions: The Citadel, is the first portion that was shelter for native people, but the second portion was the lands underneath the citadel (Abbas A. , 2017). In which the Arab district was the first residential area established underneath the citadel (Al-'Asafi, 2012). The underneath lands became shelter that hosted by people of villages and surrounding areas which was close to Erbil (Abbas A. , 2017).

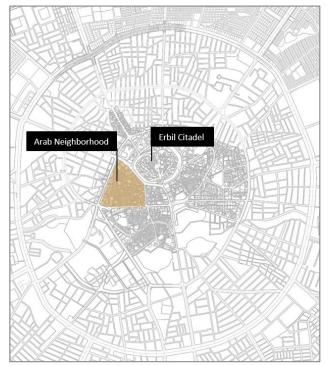
For most individuals of a community, the valuable local street symbolizes the cultural heart of their city, which provide an emphasised sensation of local-identity (Jones, 2007). Accordingly, when the Rudaw TV. Channel interviewed some

occupants of Arab neighborhood in 2022, one of them: (Haji Younis) who is 75 years old, he desired to see the renovated face of Arab district to avoid it from being completely destroyed, he said we don't like Arab neighborhood to be vanished in front our eyes (Rudaw, 2022). Another occupant named (Aamr) said, the area requires attention from the administration. he wants the area to be renovated. because of the lack of monitoring and maintenance, problems become daily routines for the inhabitants of the area. electricity supplies are another issue that inhabitants are suffering from (Rudaw, 2022).

The selected street used as a case study in the research. Its length is about 450 m, it's the longest and only direct street that connects the Muzafaria street also called (Sultan Mudhafar St.) to Bata Street and from there to Bazaar-Qaisary. Qaisary is a covered shopping area that is situated near the heart of the town. The street is almost surrounded by residential buildings and most of them are closed or ruined and used as car parking. Arab neighbourhood streets were pedestrian and cart accesses or paths beside the use for social relations and activities. Therefore, the width of the selected street is irregular, diverse between wideness at its beginning from Muzafaria street (about 6.5 m), and narrowness at its end beside Erbil Old Bazaar (about 3 m).

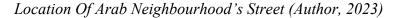
#### Figure 82

Location of Arab Neighborhood (Author, 2023).

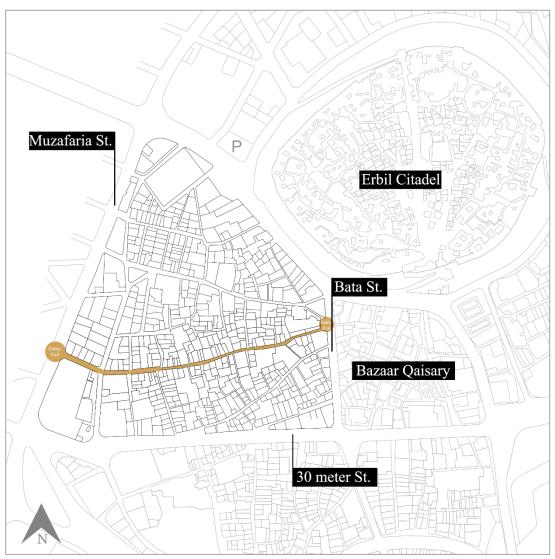


#### The Selected Street of Arab Neighbourhood

The street situated approximately in the middle of Arab neighbourhood, it's the longest straight and continuous street that divide the neighbourhood in two parts, starts from the west to the east of the neighbourhood (Figure 83). It has a strategical location because it's close to the places that have economic and cultural value including Muzafaria street, Bata Street, Bazaar-Qaisary, Erbil citadel and 30-meter street (Figure 84). The street length is about 415 meter and it has an irregular street width that changes between 8 meters to 3 meters. The street starts with a school building from one end and it continue with dwellings, closed buildings, a masjid and parking spaces until it reaches the other end of the street. The street leads the pedestrians from Muzafaria street to Bata Street and from there to Bazaar-Qaisary and vice versa, the street works as a shortcut to reach these places.







The Places That Close to Arab Neighbourhood's Street (Author, 2023)

## Cultural And Historical Value of The Street

Arab neighbourhood and its streets own a valuable history and culture, especially the selected street that contains old residential, school and religious buildings. The buildings are in bad condition due to their long history of establishment (Figure 85). Therefore, most of the buildings left empty by the inhabitants. Local traditional architecture is the style of the buildings on the street. The buildings that located on the street are carrying numerous details of local architecture, including arched window and door openings, iron fenced window, Jack arched slab and cantilever, and brick patterns used in the elevation of the buildings (Figure 86).

Bad Situation of Old Buildings on The Street of Arab Neighbourhood (Author, 2022).



## Figure 86

*Observed Local Architecture Details in The Buildings Located on The Street of Arab Neighbourhood (Author, 2022).* 



Arched door opening



Brick patterned elevation of the buildings



Arched window opening & iron fenced window



Jack arched slab and cantilever

#### Current Situation of The Street

The street was a place for pedestrian movement and neighbouring communication in the past, but with the urban growth of the city and emptying the buildings in the neighbourhood particularly in the case study area, it became a place for car parking and a shortcut for car drivers to pass through it (Figure 87). The street appears dirty because of the bad situation of the buildings, especially some of the buildings carry the risk of collapsing.

According to the (Figure 88) that explains the situation of existing land use on the street. Except the school, the unused-residential buildings by 18.8% are the highest percentage of building plots that occupied the street, these dwellings are emptied by the inhabitants because of the risk of collapsing or the buildings are not healthy to live in (Figure 89), but few of the residential buildings by 3.5% are remained with its inhabitants. The 13.2% of the plots are work as parking spaces, and 4.8% of the plots are demolished and removed building spaces considered as vacant land that are used as parking spaces. The figure shows a group of commercial buildings, unused-commercial buildings and mixed-use commercial buildings with a total percentage of 6.8% located in one end of the street that close to Bazaar-Qaisary. Also, the figure displays some lands like a school with few offices which situated at the very end of the street that close to Muzafaria street, and a masjid based in the middle of the street.

#### Figure 87

Using Plots as Parking Spaces (Author, 2022).





Existing Land Uses of The Street of Arab Neighbourhood (Author, 2023).

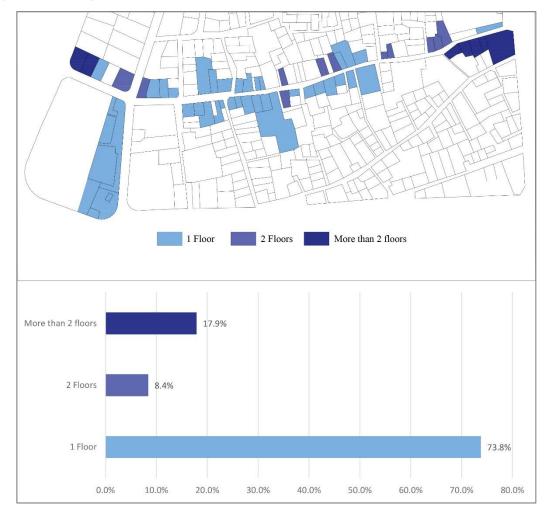
The Unused and Closed Residential Buildings (Author, 2022).



The buildings on the street were constructed by traditional simple techniques therefore, they are not more than two floors. The (Figure 90) displays a high percentage by 73.8% from one floor buildings, and 8.4% from two floor buildings, and there were buildings with more than two floors by 17.9%. it means the area has a low-level skyline compared to other neighbourhoods of the city.

### Figure 90

Number Of Floors of Existing Buildings on The Street of Arab Neighbourhood (Author, 2023).



## Evaluation Of the Case Study Area

The existing situation of the place generally has a poor level of qualities like access and linkage, comfort and image, uses and activities, sociability (Table 3). Therefore, the study aims to transfer la place from a poor level to a good level in these qualities through proposing a redevelopment design that can be illustrated in the further sections.

Table 3

Evaluation Of Case Study Area (Author, 2023).

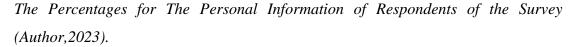
o (11)	~	Case Stusy	
Qualities	Considerations	Area	
	Interior visibility from the outside	Poor	
Access & Linkages	Connection between the space and the	Fair	
	adjacent buildings		
	Comfortability of walking through the	Poor	
	place		
	Sidewalks lead to and from the adjacent	Poor	
	areas		
	A flexible place for people with special	Fair	
	needs		
	Avarage	Poor	
	First impression of the place	Poor	
	Enough places to sit	Poor	
	Conveniently located seats	Poor	
	Sitting options (in the sun or shade)	Poor	
Comfort & Image	Cleanliness of the place	Fair	
	Safty and security of the place	Fair	
	Opportunities for taking photos	Poor	
	Pedestrian depended place	Fair	
	Avarage	Poor	
	The space usability by people	Fair	
	The space used by people of different	Poor	
Uses & Activities	ages		
	Different options of activities are	Poor	
	occurring in the place		
	Avarage	Poor	
	A place for group gatherings	Poor	
	A place for meeting friends	Poor	
	A place to bring friends & relatives	Poor	
Sociability	A place for happiness & smiling	Poor	
Sociality	The place used by the local people	Fair	
	The place used by a mix of ethnic	Fair	
	groups of people		
	Avarage	Poor	

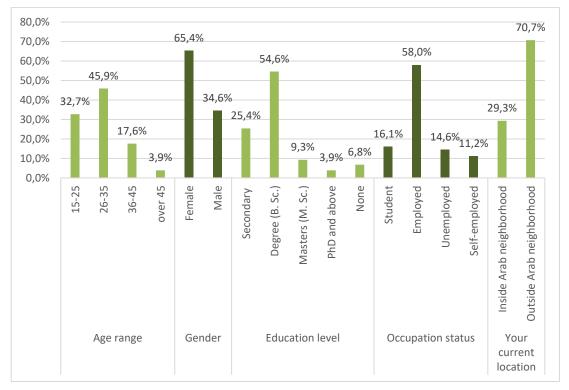
#### **Questionnaire Results**

The street survey was done to participate people in the decision of developments of their community and gaining information from the street users or visitors of Arab neighbourhood, for this reason 205 people replayed the questions in the questionnaire form which was posted in a google form. The responses were taken in two approaches, first; filling the survey by respondents via online google form. Second; the responses were taken on-site face to face from the inhabitants of the area and the users of the street. The research wants people to participate in the questioner, because they are the users of the area and their replies affect the result of shaping their environment and public life. Therefore, the questions are distributed under five sections which they are personal information, social information, cultural information, commercial street, historical streets of city, and Arab neighbourhood and its streets. The questions are revolved about their needs, interests, demands and their point of view or perspective

#### **Personal Information**

The figure (Figure 91) displays that the survey got most replies from people with average age between 26-35 and the least replies from people over 45 years, which it means most of the users of the street are from this age and overs 45 years have less interest for this place comparing to other ages. Females are more eager to reply the questioner than the males with percentage 65.4% female and 34.6% males, the males not interested in filling the survey as much as the females. The 54.6 percentage of respondents are educated with bachelor degree and 45.4% of them are from other levels of education. And about 58% of them are employed, while 16.1% are students, 14.6% of them are unemployed, and there is about 11.2% self-employed people among them. The highest percentage of responders about 70.7% are currently living outside Arab neighbourhood, and in the other side 29.3% of them are inhabitants of Arab neighbourhood.

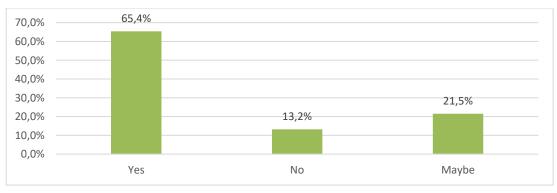




### Social Information

The (Figure 92) displays the responses for the question if they feel their local community socially alive, as a result 65.4% of them feels their local community is socially alive, while 13.2% feels not and 21.5% answered as maybe it's alive. It means the city is convenient for socially oriented places.

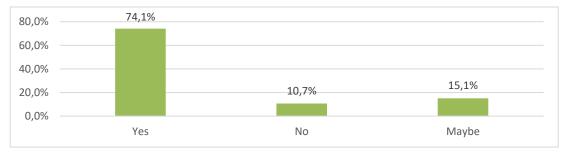
The Percentages of Replies for The Question of "Do You Feel That Your Local Community Is Socially Alive?" (Author, 2023).



When the question "do you have social activities with your friends" directed to the respondents, 74.1% of them reply as they have social activity with their friends, and just 10.7% of them have no social activity (Figure 93). It means the city have a high percentage of people that do social activities with their friends which spontaneously it needs places to do such activities.

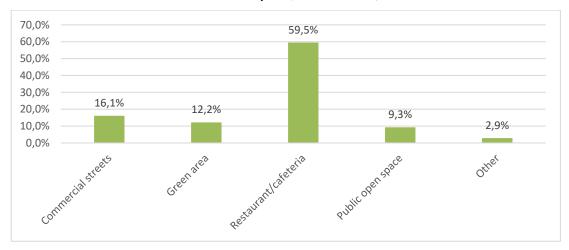
#### Figure 93

The Percentages of Replies for The Question of "Do You Have Social Activities with Your Friends?" (Author, 2023).



As the question "constant place of your gatherings and interactions with friends or family" directed to the respondents, it resulted as restaurants and cafeteria are primary places of their gatherings and interactions for about 59.5% and the secondary places that visited by respondents are commercial streets and green areas with percentages 16.1% and 12.2% respectively (Figure 94). It shows that places with restaurants and cafes needed to create socializing environments.

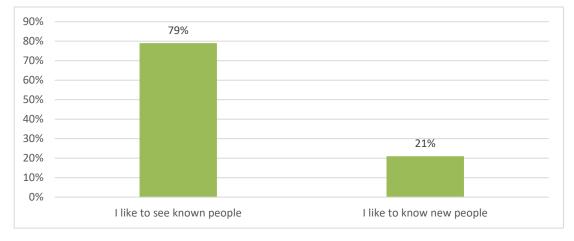
The Percentages of Replies for The Question of "Constant Place of Your Gatherings and Interactions with Friends or Family?" (Author, 2023).



According to the replies for the question of "at which level the respondents are social with outside people", 79% of them like to see known people such as their friends, families, colleagues, or siblings, and 21% a small percentage of them replies as they like to see unknown people (Figure 95), it seems they are extra-extrovert peoples.

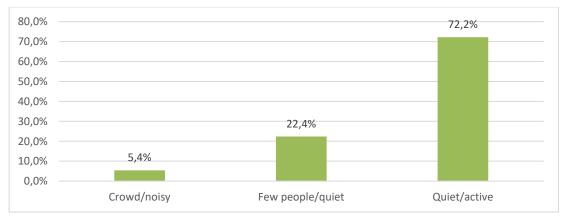
### Figure 95

The Percentages of Replies for The Question of "At Which Level You Are Social with Outside People?" (Author, 2023).



The 72.2% of respondents chose "quiet and active" places, and 22.4% chose "few people and quiet" places when they replied for the question of " the places they prefer to go to" (Figure 96). It means they prefer to go for places with "quiet and active" environments.

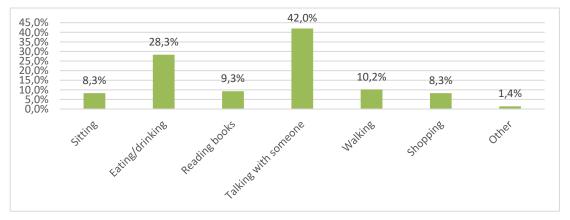
The Percentages of Replies for The Question of "What Kind of Place Do You Prefer to Go to?" (Author, 2023).



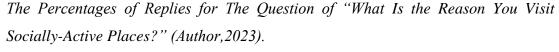
When the question "usually what kind of activities do you do while being outside" directed to the respondents, talking with someone became the activity which chosen by 42% of respondents when they do while they are outside, and following with the eating and drinking activities by 28.3% in the (Figure 97). It represents that people need places and environments that they can talk with others easily.

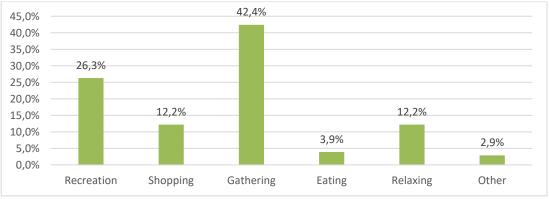
#### Figure 97

The Percentages of Replies for The Question of "Usually What Kind of Activities Do You Do While Being Outside?" (Author, 2023).



According to the replies for the question of "what is the reason you visit socially-active places" most of the respondents by 42.4% visit socially-active places for gatherings and following with recreation by 26.3%, which it means both are considered major reasons for respondents to visit socially-active places (Figure 98). It determines that people need places to gather and environments for their recreation.





When asked the respondents to choose three socially active places they want to see on the streets, as the result "gathering place", "book reading place" and "shopping place" was chosen with percentages 75.6%, 60% and 58% respectively (Figure 99). It shows that these three places are requested places that they can use.

### Figure 99

The Percentages of Replies for the statement of "Choose Three Socially Active Places You Want to See on the Streets" (Author, 2023).



### **Cultural Information**

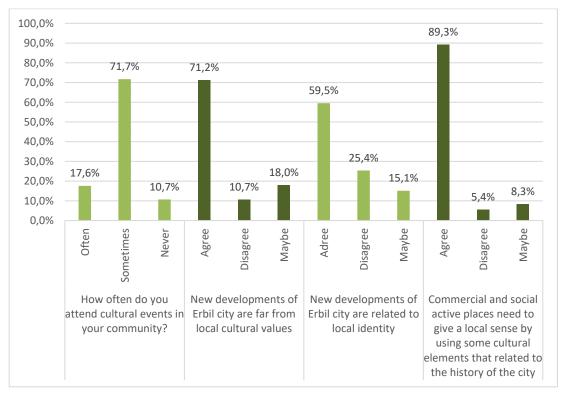
The figure (Figure 100) illustrates all the results for the replies of respondents for the cultural information. The question "how often do you attend cultural events in your community" asked to determine whether the place need the addition of flexibility to do cultural events and ceremonies. It results as 71.7% of the respondents "sometimes" participate in cultural events, and 17.6% of them are "often" participating such events. While, 10.7% of them do not participate. The responses indicate that if the place is flexible can handle cultural events in special days of the year, because according to the results the people are willing to participate cultural events.

The question "new developments of Erbil city are far from local cultural values" was asked to show that whether the people pay attention to local cultural values of the city or not. It results as 71.3% of respondents are "agree" on that the

new developments of Erbil city are far from local cultural values, and 18% of them give possibility for it and 10.7% of them think new developments of the city are related to the local cultural values. It shows that a high percentage of the people are aware about their cultural values.

The high percentage of respondents by 59.5% are "agree" on that the new developments of Erbil city are related to local identity, 25.4% of them are "disagree", and 15.1% of them give possibility for it. It shows that a high percentage of the people are aware about their local identity and they appreciate it. It means they like to see places that are related to their local identity.

Highest percentage of respondents by 86.3% are "agree" on that Commercial and social active places need to give a local sense by using some cultural elements that related to the history of the city, 8.3% give possibility for it and 5.4% of them are disagree with it (Figure). This shows that the people want to see places which give a local sense that related to the city's history.



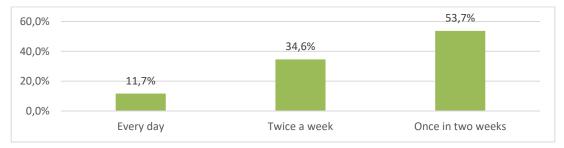
The Percentages for The Cultural Information of Respondents of the Survey (Author, 2023).

#### **Commercial Street**

The question "how often do you visit commercial areas" was asked and the respondents by 53.7% are replied as they visit commercial areas once in two weeks and following with 34.6% of them are visit commercial areas twice a week, while 11.7% of them are visit the area almost every day where all of them was males and they are working there (Figure 101). It shows that commercial areas are important places that appropriately serve the community in a way that it can supply daily and weekly needs.

### Figure 101

The Percentages of Replies for The Question of "How Often Do You Visit Commercial Areas?" (Author, 2023).



Shopping and seeing people by 38% and 28.3% respectively, are chosen by the respondents as the most enjoyable things in commercial areas (Figure 102). It means that commercial places are creating opportunities to see people while they are shopping, because people don't like empty places, they enjoy to see people when they are being outside.

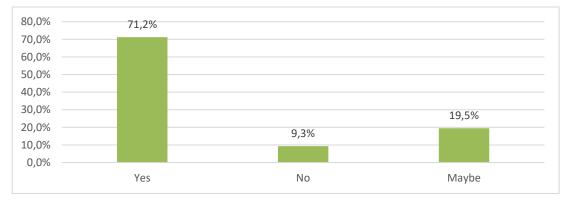
The Percentages of Replies for The Question of "What Do You Enjoy About Commercial Areas?" (Author, 2023).



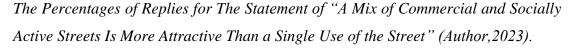
The question "do you think commercial areas support the local economy" was asked and the respondents by 72.1% are consider that commercial areas support the local economy (Figure 103), and some of them by 19.5% think that it will not affect that much. But few of them by 9.3% think it doesn't affect. it shows that commercial areas can affect the local economy.

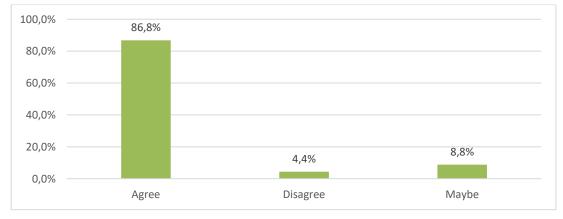
# Figure 103

The Percentages of Replies for The Question of "Do You Think Commercial Areas Support the Local Economy?" (Author, 2023).



The respondents by 86.8% are "agree" with the concept that a mix of commercial and socially active street is more attractive than a single use street (Figure 104). It means, this type of streets is more flexible for the needs of people, because it can supply the needs of people in a wide range, they can do more than one activity. For this reason, people visit such multi-use streets.

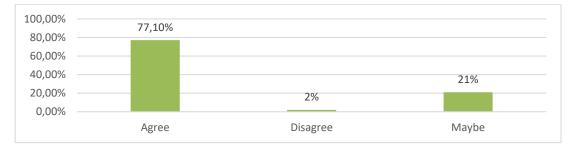




With the rapid developments of cities, greeneries are forgotten or neglected to have them in the developed places, then realized that it was mistake and they have to pay attention to soft-scape. Therefore, the highest percentage of respondents by 77.1% are "agree" on that soft-scape is a necessity in commercial and socially active areas (Figure 105). It means, these places should have planted green surfaces or elements with greeneries. In the other side, 21% of the respondents are considering soft-scape as a less important element in such areas.

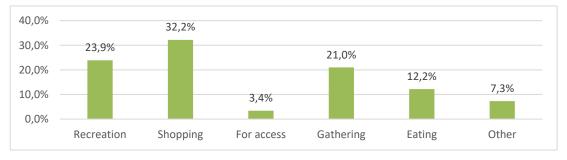
#### Figure 105

The Percentages of Replies for The Statement of "Soft-Scape Is a Necessity in Commercial and Socially Active Areas" (Author, 2023).



The question "what is the reason you visit commercial areas in Erbil city" was asked and most of the respondents in Erbil city by 32.2% visit commercial areas for shopping and following with recreation and gathering by 23.9% and 21% respectively, which it means the three of them are the most considerable reasons for respondents to visit commercial areas (Figure 106). It determines that people need places to do their shopping, and environments for their recreation and gathering in the same place.

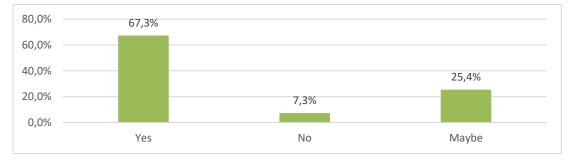
The Percentages of Replies for The Question of "What Is the Reason You Visit Commercial Areas in Erbil City?" (Author, 2023).



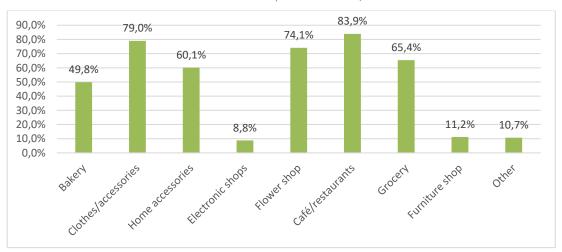
When the survey asked the respondents if they enjoy commercial areas in Erbil city, 67.3% of them replied with "yes" (Figure 107), it means, most of the people enjoy the commercial areas in the city. Also 25.4% of them feels that the commercial areas in the city are less enjoyable, they prefer to redevelop them.

# Figure 107

The Percentages of Replies for The Question of "Do You Enjoy Commercial Areas in Erbil City?" (Author, 2023).



The respondents chose the five economical activities that they want to see in a commercial area including, café/restaurants by 83.9%, clothes/accessories by 79%, flower shop by 74.1%, grocery 65.4% and home accessories by 61% (Figure 108). These five places are most preferable places by respondents to be located in a commercial area. It makes them to have all the needs in one place rather than separate places.

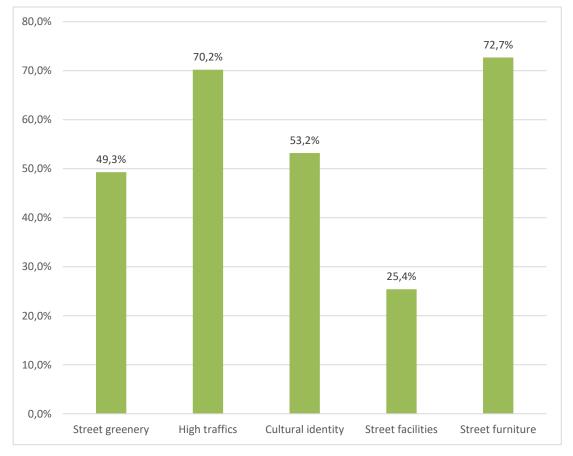


The Percentages of Replies for The Statement of "Choose Five Economical Activities You Want to See in A Commercial Area" (Author, 2023).

The question "what are the main three gaps of commercial areas in Erbil city" was asked and the respondents consider that street furniture by 72.7%, high traffics by 70.2% and cultural identity by 53.2% are the three main gaps of commercial areas in Erbil city (Figure 109). That is mean places with these three gaps have to analysed and maintained quickly, so it can attract more people into the area.

#### Figure 109

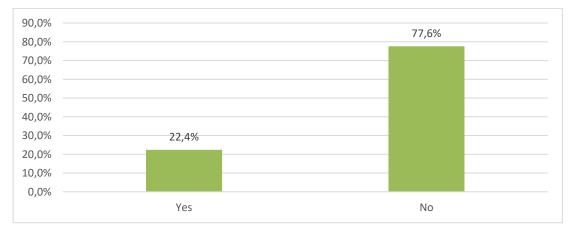
The Percentages of Replies for The Question of "What Are the Main Three Gaps of Commercial Areas in Erbil City?" (Author, 2023).



# Historical Streets of Erbil City

The question "did you live in a historical neighbourhood" was asked, it resulted as most of the respondents by 77.6% recently didn't live in any historical neighbourhood, they are just visitors of the neighbourhood. While 22.4% of them lived or currently living in historical neighbourhoods (Figure 110). It shows that a high percentage of people live outside historic neighbourhoods and few people are remaining as inhabitants in historical neighbourhoods.

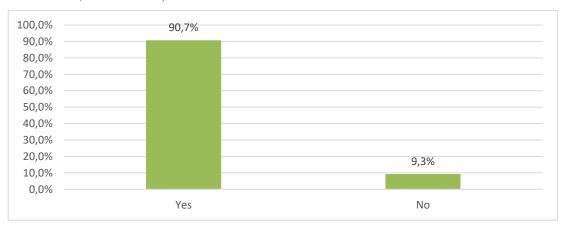
The Percentages of Replies for The Question of "Did You Live in A Historical Neighbourhood?" (Author, 2023).



The question "did you visit any historical street in Erbil" was asked and it resulted as 90.7% of the respondents are visited historic streets in Erbil for different reasons (Figure 111), it means they have idea about the place and they know its problems.

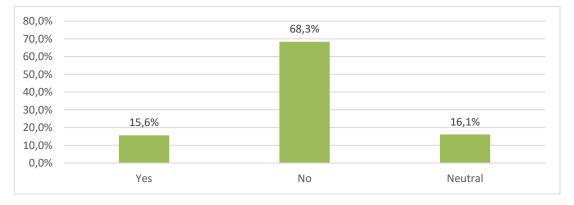
# Figure 111

The Percentages of Replies for The Question of "Did You Visit Any Historical Street in Erbil?" (Author, 2023).



The question "are you satisfying with the current situation of historical streets" was asked and a high percentage by 68.3% of respondents are not satisfy with the current situation of historical streets in the city and 16.1% of them find these places as suitable to visit but not to live in (Figure 112). Generally, it shows that these places need to be maintained and redeveloped to satisfy the users of the streets.

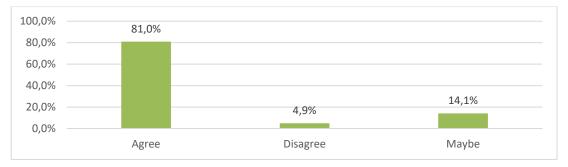
The Percentages of Replies for The Question of "Are You Satisfying with The Current Situation of Historical Streets?" (Author, 2023).



The question "Erbil city has potential historical streets for touristic attraction" was asked and a high percent of respondents by 81% is agree on that the historic streets of Erbil city can attract tourists (Figure 113), in which it affects the economy of the area in a positive way. All this shows that if the historic neighbourhoods redeveloped can attract more tourists to the area, spontaneously it will support the local economy.

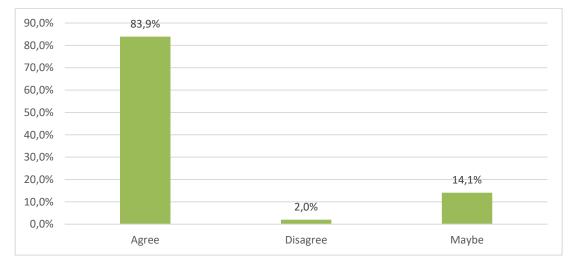
# Figure 113

The Percentages of Replies for The Statement of "Erbil City Has Potential Historical Streets for Touristic Attraction" (Author, 2023).

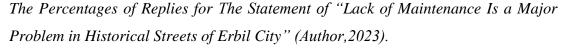


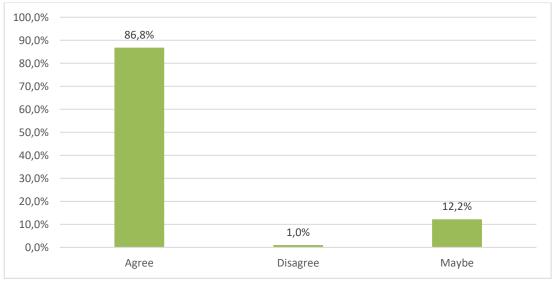
The question "neglecting is one of the problems that faced historical neighbourhoods in Erbil city" was asked and the respondents by 83.9% are agree on that neglecting is one of the problems that faced historical neighbourhoods in Erbil city (Figure 114). It shows that the people are aware of the situation of this places. In addition, it determines that the historical neighbourhoods recently need a quick redevelopment.

The Percentages of Replies for The Statement of "Neglecting Is One of the Problems That Faced Historical Neighbourhoods in Erbil City" (Author, 2023).



The question "lack of maintenance is a major problem in historical streets of Erbil city" was asked and the respondents by 86.8% are agree on that the lake of maintenance is a major problem in historical streets of Erbil city (Figure 115). It shows that the people are aware of the situation of this places as much as they aware of their negligence. In addition, it determines that the historical streets recently need a quick redevelopment to rehabilitate and reuse them with new function.

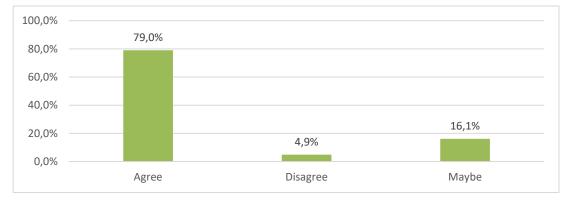




The question "there is deterioration of local identity in historical streets of Erbil city" was asked and the respondents by 79% are agreeing on that; the passing time disrupts the local identity in historical streets of Erbil city (Figure 116). They are aware of the situation of historical streets, because they use them for their personal purpose.

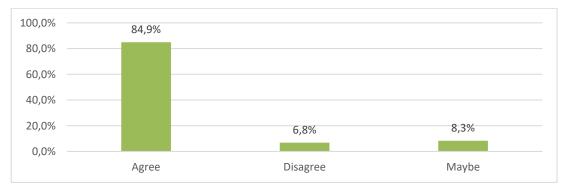
#### Figure 116

The Percentages of Replies for The Statement of "There Is Deterioration of Local Identity in Historical Streets of Erbil City" (Author, 2023).



The question "it's not easy to find somewhere to sit or rest on the historical streets in the city" was asked and the respondents by 84.9% are experiencing that there aren't places to sit and rest (Figure 117). It means there is lack of street furniture, before it was mentioned as one of the main gaps of commercial areas in Erbil city. A street is a long space with a small width therefore it needs nodes of seats for resting.

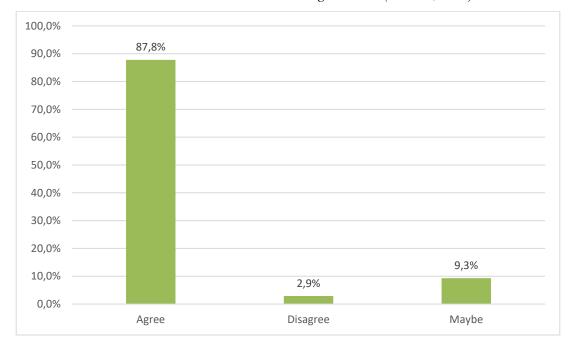
The Percentages of Replies for The Statement of "It's Not Easy to Find Somewhere to Sit or Rest on the Historical Streets in The City" (Author, 2023).



The bad physical situation of the streets could be noticed by people easily, when they use them for their personal purposes. Therefore, when the question "historical neighbourhoods and their streets need rehabilitation and renewing works" was asked, the respondents by 87.8% think that historical streets need rehabilitation and renewing works (Figure 118). It means that renewing the physical appearance of the place directly affect the percentage of the street user. In another way, people feel comfortable and easy while visiting such places with good physical condition.

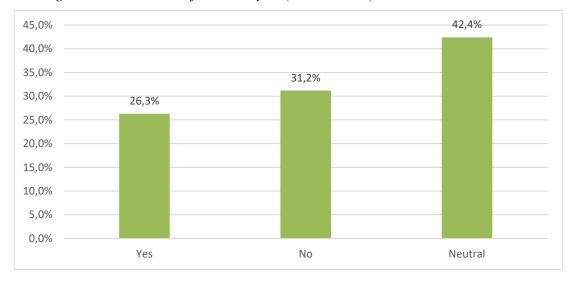
#### Figure 118

The Percentages of Replies for The Statement of "Historical Neighbourhoods and Their Streets Need Rehabilitation and Renewing Works" (Author, 2023).



The historical streets of Erbil city in specific times of the day and especially some of the areas are empty from people which it gives a sense of fearing and unsecure. While other areas of this type of places are own people movement that creates a sense of safe and secure. Therefore, when the question "do you feel safe and secure while visiting historical streets of Erbil city" was asked, the respondents by 42.4% are feeling "neutral" and in the other side 31.2% of the respondents are not feeling safe and secure while visiting historical streets of Erbil city (Figure 119). It means the historical streets need to be monitored by moving people and inhabitants of the street or by putting cameras on the street.

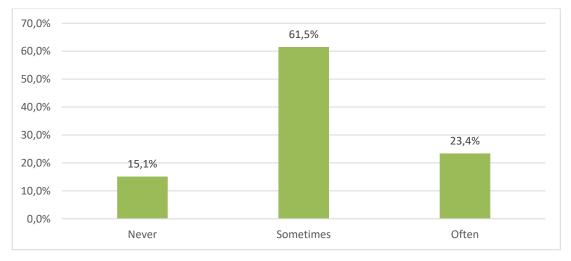
The Percentages of Replies for The Question of "Do You Feel Safe and Secure While Visiting Historical Streets of Erbil City?" (Author, 2023).



# Arab Neighbourhood & It's Streets

The frequency of the respondents to visit Arab neighbourhood is that 61.5% of them "sometimes" are visit the area, and 23.4% of them "often" are visit the area for their personal purposes (Figure 120). It means they are aware of the condition of Arab district directly, because they went there and noticed the problems that the neighbourhood facing recently.

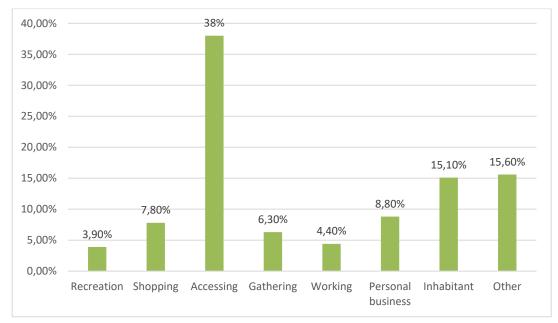
# Figure 120



The Percentages of Replies for The Question of "In Which Frequency You Visit Arab Neighbourhood?" (Author, 2023).

The main reason of the respondents for being on Arab neighbourhood streets is "accessing" by 38%, they use the streets to reach another place. And 15.6% of them using the streets as "gathering" place, and 15.1% of them are "inhabitants" of the area (Figure 121). It shows that the place generally used as an accessing path to transport them to other places. It means the place needs activities that encourage the users to stay in.

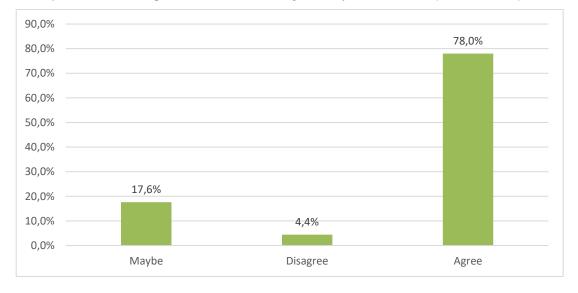
# Figure 121



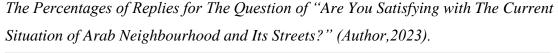
The Percentages of Replies for The Question of "What Is Your Main Reason for Being on Arab Neighbourhood Streets?" (Author, 2023).

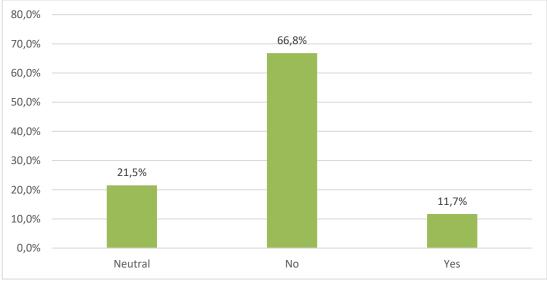
What was shocking is that the place works as a farm of car parking area, therefore 78% of the respondents are "agree" on that the streets of Arab neighbourhood are mostly used as transportation and parking areas for vehicles (Figure 122). It shows that the streets were used for purposes out of its major functions. Also, the respondents especially inhabitants of the area are complaining about that they can't use the street properly because of the cars and they are disturbed by the traffic congestions that occur on the narrow streets of the place. They added, the parking lands where was buildings that demolished and used for parking in which it works as a deleting machine of the local identity and the place's historic and cultural values. Therefore, the streets need to be preserved and only used for the purposes of urban developments.

The Percentages of Replies for The Statement of "The Streets of Arab Neighbourhood Mostly Used as Transportation and Parking Areas for Vehicles" (Author, 2023).



A high percentage by 66.8% of respondents are not satisfy with the current situation of Arab neighbourhood and its streets and 21.5% of them are "neutral" and find the neighbourhood and its streets as suitable to visit but not to live in (Figure 123). Generally, it shows that this place needs to be maintained and redeveloped to satisfy the users of the place.

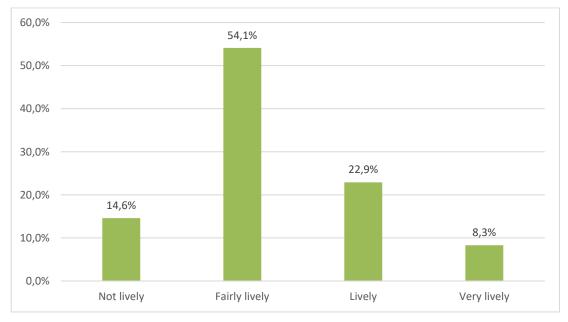




The question "how lively is Arab neighbourhood during the day" was asked and the respondents by 54.1% are experienced that the neighbourhood is "fairly lively" during the day and 22.9% of them replied as "lively" (Figure 124). It shows that the area lost its liveliness because of problems faced the area. The inhabitants added as, the area can't be used during night, because it will be empty from people and could be dark because there are no enough lighting poles on the streets of the area. Also, the inhabitants complaining that the government couldn't supply enough electricity to the area, this was another reason that killed the liveability of the area.

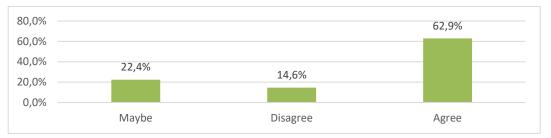
# Figure 124

The Percentages of Replies for The Question of "How Lively Is the Arab Neighbourhood During the Day?" (Author, 2023).



The question "Arab neighbourhood and its streets are safe from crime and antisocial behaviour" was asked and the respondents by 62.9% are notice and "agree" on that Arab neighbourhood and its streets are safe from crime and antisocial behaviour, and 22.4% of them replied as "maybe" there was crime but we couldn't hear about (Figure 125). Especially the inhabitants added as till now they didn't witness any crime news in the area except one antisocial behaviour such as hitting someone. It means the area is safe despite it doesn't give a complete sense of safety.

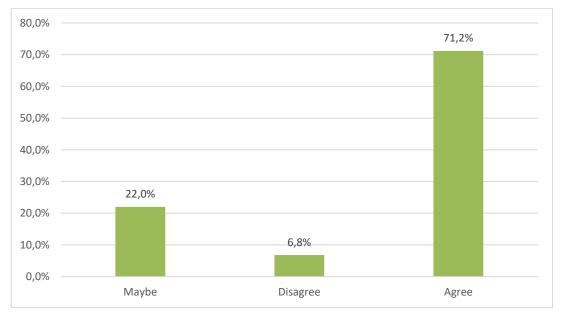
The Percentages of Replies for The Statement of "Arab Neighbourhood and Its Streets Are Safe from Crime and Antisocial Behaviour" (Author, 2023).



The question "there is high traffic level in Arab neighbourhood" was asked and the respondents by 71.2% are "agree" on that they experienced high traffics in the area (Figure 126). Also, the respondents especially inhabitants of the area are complaining about that they can't use the street properly because of the cars and they are disturbed by the traffic congestions that occur on the narrow streets of the place.

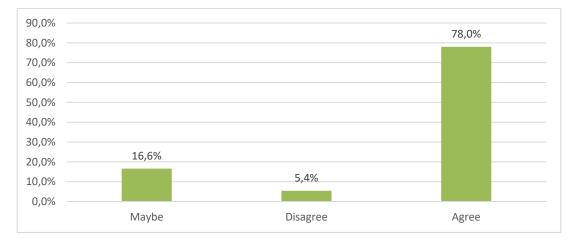
#### Figure 126

The Percentages of Replies for The Statement of "There Is High Traffic Level in Arab Neighbourhood" (Author, 2023).



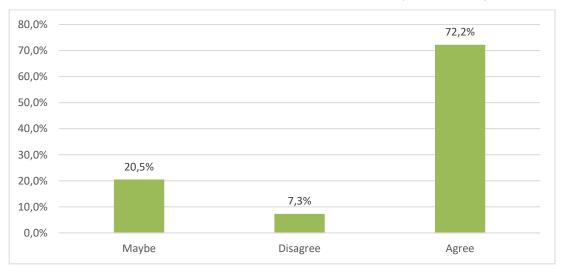
The question "it's not easy to find shelter, for example if it was very sunny or raining" was asked and the respondents by 78% are experiencing that there aren't places to sit and rest (Figure 127). It means there is lack of street furniture, before it was mentioned as one of the main gaps of commercial areas in Erbil city. A street is a long space with a small width therefore it needs nodes of seats for resting.

The Percentages of Replies for The Statement of "It's Not Easy to Find Shelter, For Example If It Was Very Sunny or Raining" (Author, 2023).



The question "Arab neighbourhood has potential streets to be used as commercial and socio-active places" was asked and 72.2% of respondents are "agree" on that Arab neighbourhood has potential streets to be used as commercial and socio-active places, and 20.5% of them think "maybe" it has but we didn't realize it (Figure 128). It means the streets can be used for more than one function. The respondents expect from the municipality to take care and redevelop this area, they think the idea of using the street as commercial and socio-active places could bring life to the neighbourhood.

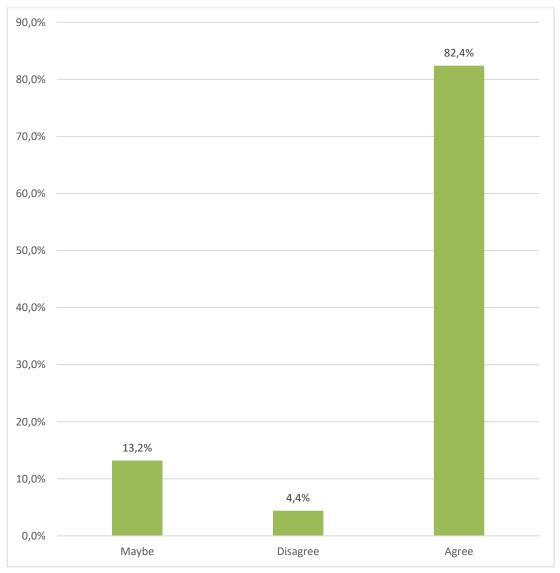
# Figure 128



The Percentages of Replies for The Statement of "Arab Neighbourhood Has Potential Streets to Be Used as Commercial and Socio-Active Places" (Author, 2023).

The question "renewing Arab neighbourhood streets promote tourism and economic development" was asked and 82.4% of respondents are "agree" on that renewing Arab neighbourhood streets promote tourism and economic development (Figure 129). The respondents think that renewing the streets help in welcoming more local people, at the same time it attracts tourist attention to the area which it provides an economic development to the area including land values of the place.

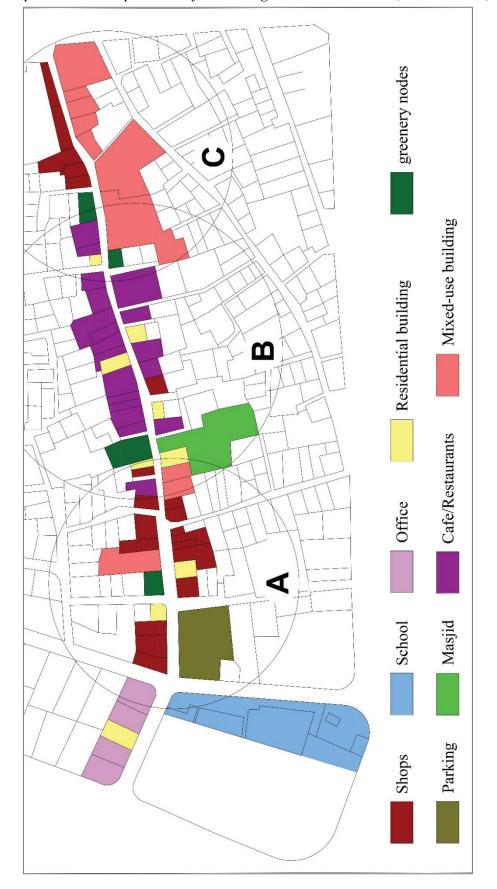
The Percentages of Replies for The Statement of "Renewing Arab Neighbourhood Streets Promote Tourism and Economic Development" (Author, 2023).



#### **Proposed Design of Arab Neighbourhood's Street**

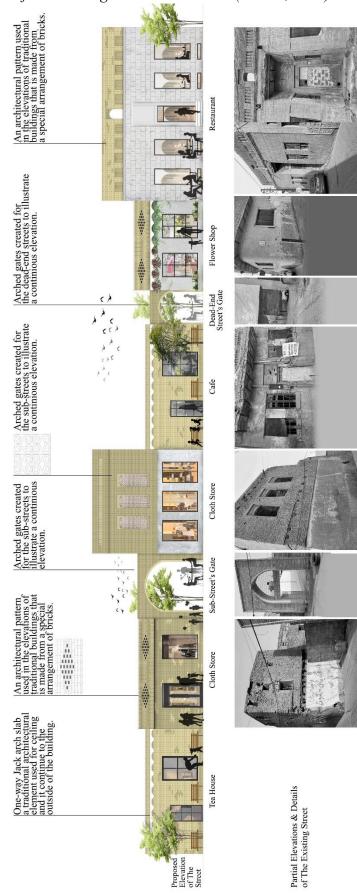
According to the analysis of case study area and similar examples and results of the questionnaire, the street needs redevelopments in the appearance and condition of the street and its buildings. The main development will be for the refunctioning the unused buildings and designing vacant lands. Therefore, the figure below illustrates a proposed elevation of the street that designed to satisfy the community needs yet keeping its architectural, cultural and historical values by reusing cultural and traditional elements and feature for the buildings. The proposal takes benefit from similar examples to activate the street with different new functions and social spaces and taking the considerations of access & linkages, comfort & image, uses & activities, and sociability qualities into account for transforming the street to a great place.

The proposed redeveloped plan explains the new functions that added to the land use of the place according to the responses of the respondents of the questionnaire survey (Figure 130), yet it keeps the used residential buildings, the school, offices and the parking that located at the beginning of the street. Gathering, shopping and reading books places are the most selected social places by the respondents. Also, clothes, accessories and flower shops, café and restaurants are the most commercial activities selected by the respondents. In addition, the street furniture, traffic, and cultural identity are the three main gaps that selected by the respondents that need to be managed. So, the figure shows a division of the street into three zones (A, B, C), the middle zone (B) consist of socially related activities and the two zones (A and C) at the end of the street are consist of commercial related activities in this case the people who just want to do commercial activity doesn't need to go to deep of the street. While it promotes people to spend money in the shops while passing through the street even if they intentions to spend time in a café or a restaurant. Also, the proposed design introduces some green spaces between the buildings to create soft environments among the solid building structures. The proposed elevation is a compact design for the case study area that displays all the important details applied for the case study area (Figure 131).



The Proposed Redeveloped Plan of Arab Neighbourhood's Street (Author, 2023).

Proposed Elevation of e Arab Neighbourhood's Street (Author, 2023).



# CHAPTER V Discussion

The research discussed important problems, findings and solutions for the case study area related to the study's topic. It's focused on the solution-oriented approaches for the area. The research defined a new and usable form of the historical street to be used by recent and new generation of people. It showed the potential of selected street that could work as car-free place where it has social and commercial intentions. The case study area explained that other historical areas of the city could be redeveloped and used for human and environment benefits.

Stepping in exhaustive research by determining the main aim of the study as it targeted to propose an urban renewal and development methodology for the historic streets in the area, and transforming them to places that are efficient and compatible for human social life needs and demands of tomorrow developments.

The supportive side of the research that helped to reach the aim of the study was the literature review, as "National Association of City Transportation Officials" in 2017 discussed that street is the main provider of economic, social related and physically oriented activities which they transform cities to a pleased living area for people. Additionally, the organization of "Project for Public Spaces" considered streets as places that people could do activities such as walking, strolling, looking and gazing someone, playing, shopping and maybe working, but it's not places for driving cars. It showed that streets have potential to be used as places, especially if we consider the old streets that lost their main function and waiting to be renewed and rehabilitated. It continued with studying of the concepts of commercial, socioactive and pedestrian places to form a place that the research aimed to reach. As Relph in 1972 by his statement supported the idea of commercial streets could consider as places that have physical structure and functioning well within a cultural meaning that satisfy more people of local and non-local. Also, it showed that the academicians from diverse domains related to studies of urban design advising to see street as a social place instead of as the merely channel of movement. It means the idea of using streets only as vehicle accesses became an old concept that today's people don't want to have it. As Mayor in 2011 explained that a well-designed socioactive place from a street help in creating suitable atmosphere for people to do their social activities. And these activities will increase further by restricting car access and using only by pedestrians. Also, Jones in 2007 supports that the high density of pedestrian movements is the main determiner of the lifelines of activities in a multi-function street or place.

Moreover, analyzing related researches is helped in understanding wider ranges of transformation of streets to places. It showed that different cities tried to adapt the old streets to new places of commercial and social activities and connecting them to their culture. It makes easy to see what a place needs to serve its visitors, so a good level in access on the street and linkage between the street and its buildings, the feeling of comfort while staying in the place and beside that it provides good sights and view, also a good level in providing many uses and activities that people could take benefit from them, all these qualities promote the quality of sociability in the place.

The first and third similar examples are highly renovated and still represent the history and culture of the area. All the similar examples are kept the old buildings by renewing and adapting them for new functions, it means they preserve the history of the buildings and their architectural styles. They changed the level of the street from just a historical street to a hybrid place of historical and cultural senses enriched with commercial and social activities. These similar examples are compared to the existing situation of the case study area to determine the gaps that Arab neighbourhood's street has. The comparison illustrates many lacks in the access & linkages, comfort & image, uses & activities, and sociability qualities. The existing situation of the study area alerts for a quick redevelopment works to save the remained architectural features. For this reason, a proposal designed to fill these gaps in the case study area and become a suitable place for the people of the community from different ethnics. All these means, the research conducted a transformation of an old street to a place with various commercial oriented buildings beside its social activity promoters that can be experienced through walking without using vehicles.

In the public condition, the area of the research arranged an immense event for the community in discovering their complication with the misuse of historical streets in the area. This, became a significant advantage, which sets points that are able to shape valuable social, commercial and physical relationships on the historical streets. Erbil city needs developments in the fields that related to social life activities, accordingly, the research reaches this important point of the need through a wide study and proposed design for the case study area. Therefore, the topic of the research delivers a functional perception of cultural, social and commercial needs in the case study area. Also, the topic helped the research in branching into the improvements to the known data of the historical neighbourhoods and their streets in the area. It helped in the development of the city and creating active streets from existed ones. Reusing old buildings to reduce waste supported by the topic of the research.

As other researches, the study take some approaches to create a methodology that serve the aim of the study. Depending on quantitative and qualitative methods, the research used a descriptive approach for the study to investigate the potential of the Arab neighbourhood's street to be used as pedestrian depended commercial and socio-active place. The research design divided into three substantial key points which are literature review, analyses of similar examples and case study area, and field survey, each key points will breakdown into sub-contents, the complete figure designed to orient the research to its goals.

The research's survey results showed that people of the community are the one who demands places which serve them social and commercial facilities for their daily needs and yet its comfortable for using in which it will not force them to use cars as other places in the city. It figured that 72.2% of respondents are "agree" on that Arab neighbourhood has potential streets to be used as commercial and socio-active places. It means the streets can be used for more than one function. Also, it showed that 82.4% of respondents are "agree" on that renewing Arab neighbourhood streets promote tourism and economic development. it means that people of the community believe that historical areas particularly streets could be redeveloped and used for recent functions to influence local people and tourists to visit these historical areas that they couldn't visit before. Therefore, the study analysed and evaluated three similar examples from different countries, it explains that similar examples are places that redeveloped for the public use which they influence the activity of the

area to an active and lively area inside the cities.

Generally, through the research it shown that historical streets of other countries are adapted for various uses, and they make easy to perceive this type of streets in a local level. The findings from similar examples and questionary survey's result supports that Arab neighbourhood's street in Erbil city have potential to be used as pedestrian depended place for commercial and social activities, and it was documented by a proposed design for the case study area which displays a redeveloped phase of the street.

The proposed design explained through a designed plan and elevation. The designed plan animates the new functions that added to the land use of the place according to the resulted responses of the questionnaire survey. The plan showed a division of the street into three zones, the middle zone consist of socially related activities and the two endings are consist of commercial related activities. In this case the people who just want to do commercial activity doesn't need to go to deep of the street. In another side it promotes people to spend money in the shops while passing through the street even if they intended to spend time in a café or a restaurant. Also, the proposed design introduces some green spaces from vacant lands between the buildings to create soft environments among the solid building structures.

The proposed elevation illustrates the street that designed to satisfy the community needs yet keeping its architectural, cultural and historical values by reusing cultural and traditional elements and feature for the buildings. The proposal takes benefit from similar examples to activate the street with different new functions and social spaces and taking the considerations of access & linkages, comfort & image, uses & activities, and sociability qualities into account for transforming the street to a great place.

# CHAPTER VI Conclusion and Recommendations

# Conclusion

Historical streets that we have in our cities, they were significant networks of transportation and communication in the past. Beside their function as movement paths, they were used for social communication and interactions and selling platform for commercial activities. Streets changed their forms till they reached recent day and maybe it continues to change for future generations. But most important thing is that keeping streets for current uses and benefits. Therefore, the research started through conducting a wide study for the potential of historical streets and showed how they used for commercial and social needs. The research explained some important concepts including commercial places, social places and pedestrian places that related to the topic and objective of the study, and showed the benefits of these concepts on the aim of the study. It showed that commercial and social activities give life to a dusty and unused historical street, especially if pedestrian is the only movement used to cross these places. Because pedestrian depended places ensures safety and security more than a street that is used by vehicles. The case study area of the research gave the opportunity to prove that any historical street could be developed within its context after a clear analyse and evaluation and an appropriate methodology that could help in applying solutions to the problems of the area. So, Arab neighbourhood's street took this opportunity to be used as the case study area for the research, to approach solutions for its problems.

It's been a decade that Erbil city faced a rapid development except the periods of Daash war and pandemic of covid-19 that slowed this development. During this development, the city introduces new places for leisure, entertainment, commercial and social activities. While historical places are neglected and became dark points of the city. Therefore, the research tried to reuse these historical places for public benefits.

Examples are analysed and evaluated from different countries that preserved their street's history and culture. The analysis showed that historical streets can be used as a place for commercial and social activities. Also, they point out that these streets works well if pedestrian movements are the only choice to pass through the street. The evaluated examples became a general consideration for redevelopment of the study area. In the other side the questionnaire survey represents specific considerations for redeveloping the study area. The results of the survey figures demand and needs of people in the community. All these together structured the proposal design for the Arab neighbourhood's street that figures a set of recommendations along with it. The proposed plan and elevation of the case study illustrates a concept of redevelopment in the form and function of the buildings along with the street to adapt the new uses, yet they are keeping the original architectural and historical features. The proposed design could be an additional data for the existing documents on the historical places generally and Arab neighbourhood particularly.

# Recommendations

Many historical places and streets are left and neglected to be demolished in different cities and countries. While, it can be redeveloped and used as other areas of a city instead of leaving them as a solid and useless historical place. Countries that have historical places are tend to face problems related to these areas. Therefore, reusing and adapting these areas for recent human needs could help in preserving the areas from damages and misuses. The main needs of human after a shelter, is a place that he/she can spend a quality time. On this basis, commercial and social activities could be placed in this period of quality time. Thus, some of the cities take benefits from these places and used them to present the city's culture beside using them for commercial and social activities. And these places are working well if they are used by pedestrians only without using vehicles as they were paths for pedestrian movement in the past.

Nowadays, people expecting the streets to carry more than one function beside its transportation ability. So, using them as places for shared uses rather than one usage is highly recommended, especially if these uses are commercial and social activities. Cause these activities giving the definition of place to a street. So, it is recommended to have commercial and social activities in places that is suitable for these uses.

#### **Recommendations According to Findings**

The main problem of Arab neighbourhood including its buildings and streets, are being exposed to really long periods of negligence, where no attention is paid, resulting in the possible loss of important cultural and historical values. According to this, it needs a quick intervention by the government to prevent excessive loss of these values through redevelopments and activating the area. according to the findings, people demand a clean, active, safe and secure place to do their commercial and social activities. Renewing the buildings with modern functions and providing an indirect monitoring system from visitors and occupants and supplying a car-free place to the visitors could fulfil these demands.

Historic places could attract tourists if they are suitable to visit. Therefore, Arab neighbourhood' street need to be redeveloped by renewing buildings with modern functions, and adding suitable commercial and social activities. While, preserves its local identity and historical value. The visitors and inhabitants of Arab neighbourhood's street dissatisfied with the current situation of the street. So, it needs to be designed according to the community needs. The visitors of the area are supporting the idea of using Arab neighbourhood's street as a place for commercial and social activities.

The transformation of Arab neighbourhood's street to a place could benefit the users of the area were they complaining about high traffic on the street, in this way it became a solution because streets are movement platforms, while places are movement and relaxing platforms. Considering below recommended points, historical streets could be improved and developed as a place:

- If its suitable, using the street for pedestrians only.
- Introducing commercial activities.
- Providing social activity environments.
- Preserving and renewing traditional buildings in the area.
- Reintroducing traditional architectural elements, features and patterns.
- Creating quiet and active environment along the street.
- Lightening the street during the night to ensure that the street continue to work at night as well.

# **Recommendations for Further Research**

- Recommended to develop the proposed design of the case study area to a real design in the future researches.
- Conducting the research topic in a wider context is highly recommended for future researches.
- Recommending documentation-based research that addresses reliable historical and existing data and information about Arab neighbourhood in the future, because gathering data on Arab neighbourhood was hard and sometimes disappointing.
- The proposed design formed by the needs of people for the case study area, the future research could compare the needs of people in historic places and modern places.

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#### **APPENDICES**

# Appendix A



**BİLİMSEL ARAŞTIRMALAR ETİK** 

KURULU

26.01.2022

Dear Shaymaa Jalil Ibrahim

Your application titled **"The Potential of Historical Streets to be Used as Pedestrian-Depended Commercial and Socio-Active places, Arab Neighborhood Street in Erbil City as A Case Study"** with the application number NEU/AS/2022/146 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of theScientificResearchEthicsCommittee

Direnc Kanol

**Note:** If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

# Appendix B

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