

# Pedestrian Area Design to Promote Social Interaction (Case study: Isfahan Khajoo Neighborhood)

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**ABSTRACT:** Pedestrian areas are a type of urban public space, nowadays because of the serious consequences of car-dependency and ignoring pedestrian needs, a consensus on the importance of walking and the necessity for planning for pedestrians movement has been formed among urban designers, planners and people. The concerns about human health and movement in city create a new trend in contemporary urbanism, entitled "pedestrianization movement". So far, walking in the streets has been defined under the influence of cars and they have always been given a priority over pedestrians. As a result, cars gradually conquer urban spaces, retreat pedestrians from their essential rights to use public spaces. If it is accepted that the quality of urban public areas has a considerable influence on citizens' everyday social activities, this influence can be seen much greater in car free zones than anywhere else in the city. The main attention of the present study is enhancing social interactions in urban spaces, so the main purpose of the study is finding solutions and providing a model and design criteria to promote social interaction of citizens. The research methodology is qualitative which is based on reviewing literature of pedestrian areas and social interactions. The case of study is Khajoo Neighborhood, one of the oldest and historical neighbors of Isfahan<sup>1</sup>. The result shows that design of pedestrian zones invite people and residents to spend their time in urban space and have social interactions.

**Keywords:** Pedestrian Zone, Pedestrian, Environmental Qualities, Social Interactions, Urban Design, Isfahan Khajoo Neighborhood.

## INTRODUCTION

In general, pedestrian movement has always been the most natural, the oldest, and the most essential form of moving in the environment and walking is still a major tool for observing places, activities, feeling of liveliness, discovering the values and hidden attractions in urban environment.(Mofidi, 2013, 23).

Nowadays with the arrival of cars in cities, public urban spaces cannot invite people to peace, presence, and social interactions; however, cars cause people to leave the space, while environmental qualities have been reduced considerably. During the last hundred years, four main trends have been introduced about the relationship between cars and urban spaces which are vehicularization, pedestrianization, equilibriumization and traffic calming in chronological order (Kashanijoo, 2014, 46).

In protecting historical context, in contrast to conventional traditions which merely concentrate on physical renovation, revitalization is a social practice; it has been shown that considering social capital has much greater contribution in citizen's quality of life in revitalization projects in inadequate living areas. A successful revitalization project prepares a welcoming environment, therefore residents have more opportunity to make social interactions and have active life.

In Isfahan city there are vast deprived areas which need urgent operation. Khajoo neighborhood (in district number 3 municipality of Isfahan) is one of deprived areas which is located in proximity of two gorgeous historical sites (Naqsh-e-Jahan Square<sup>2</sup> and Isfahan Grand Bazaar<sup>3</sup>). It is also surrounded by main roads such as monumental Chahar-bagh Khajoo<sup>4</sup> Avenue, but nevertheless the neighborhood is confronting reduction in urban functions, blighted buildings and fading cultural and historical identity. The main goal of the present study is identifying areas which are drivers of development

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in the neighborhood. We aim to suggest design of pedestrian areas which enhances social interaction and consequently improves resident's sense of place. The study has been proposed pattern and design criteria which are practical in similar circumstances.

## MATERIALS AND METHODS

As the article is mainly concentrated on theoretical aspects of pedestrian area, the research methodology was based on reviewing literature of pedestrian area in books, scientific journals, research projects, and reliable websites. Because of the research data, qualitative research methods have been used.

In this study, at first, literature and theoretical fundamentals of pedestrian-oriented areas and social interactions have been reviewed; various qualities of pedestrian areas are categorized into four components such as physical, functional, aesthetic and environmental; then the principles, criteria and indicators of each category has been explained. Finally, by comparing the principles, criteria and indicators of pedestrian areas and social interactions with successful international cases, the theoretical framework of the study have been obtained. The research process can be defined as:

- Defining goals, qualitative objectives and research questions;
- Reviewing literature of pedestrian area in books, scientific journals, research projects, and reliable websites;
- Categorizing viewpoints of Iranian and International scholars on the pedestrian area and social interaction.

Revising the scholars' ideas and categorizing them into four components of physical, functional, aesthetic, and environmental;

Identifying the component, principles, criteria and indicators of pedestrian area and social interaction;

Overlay the component, principles, criteria and indicators pedestrian area and social interaction resulting from theories with the criteria of successful international cases.

## The Concept and Definition of Pedestrian Areas

As an inescapable part of our everyday life world, walking is an embodied practice with specific lived qualities. It is also a mode of "experiencing place" and "the city". It is a multifaceted activity and a temporal practice, which has an impact on design; as such urban walking has yet to be fully understood and engaged with. (Wunderrich, 2008,1)

Pedestrian areas are referred to the passages which are exclusively available to pedestrians and motor vehicles are only allowed to access for essential services. The passages can be streets, markets, malls, squares, parks or open space of a residential complex.

(Moeini, 2011, 24).

Pedestrian areas are paths with the highest social role; in these areas the pedestrians have full control of the space. They are tools for collective actions, particularly in relation to urban economics, environmental quality, and social health (Pakzad, 2005, 274).

Table 1: Characteristics of Good pedestrian City. (Gehl, 2002, 4)

		Good City			
strolling and lingering City		A Good City of social and cultural interactions	A Good City of talking, watching and experiencing	A lively, diverse and safe city Characteristics	
Characteristics	Room to walk with dignity, integrity and without overcrowding.	Space for cultural activities and communication.	Low level of noise and few disturbances.	A wide variety of 24 hour activities.	
	Comfortable climatic conditions. Sun and shade depending on the season and protection from the wind. Pleasant facades at street level to stroll alongside and observe.	Space for street theatre, clowns and jesters, music and small scale commercial activities.	Intimate public spaces. Fine landscape and good details.	Open in the evenings with lit window displays.	Safe places and streets both day and night.
	Good conditions for people with disabilities and people with prams.	Democratic public spaces for all.	Interesting facades.		
	Clear structure in the pedestrian system. It should be easy to find your way around.				
	A pedestrian system that connects important destinations. Ability to promenade through the city.				
	Good walking rhythm with few interruptions.				
	Few and short waiting times at intersections.				
	Many well placed benches.				
	Widespread secondary seating such as steps and edges of planter boxes.				
	Well-situated cafes and outdoor restaurants.				
Beautiful and effective lighting.					

Pedestrian areas are centers for walking, a place for presence of all citizens and their participation in public life. These spaces function in the scale of city and various groups of residents, with different socio-economical background may use them.

(Oranratemanee, 2014, 211).

In addition to the role of access and connection, pedestrian areas are safe and comfortable for social contact, amusement, observation and various activities, in pedestrian areas, people have a high freedom to stop, stay for white, change direction, and direct contact with other people and surroundings; therefore these spaces invite people to urban spaces, they gradually become accustomed to the presence in the city and civic activities and spend more time in urban areas (Moeini, 2011, 26).

### Objectives and Common Indicators of Comprehensive Plans of Pedestrian Area

Safety and security;

Continuity / integrity of network;

Access;

Creating an attractive environment;

Appropriate connection, transportation, land use and importance of mixed uses;

Public health/education;

Equity, environmental vitality, the vitality of neighborhoods.

(Moeini, 2011, 87)

### Characteristics of Pedestrianism Good City

A Good City for strolling and lingering;

A Good City for social and cultural exchanges;

A Good City for talking, watching and experiencing;  
A lively, diverse and safe city to move around in. (Gehl, 2002, 4) (Table.1)

### Major Emphases of Pedestrian Community

Preventing suburb growth;

Improving level of activity;

Economic restructuring. (Goli, 2008,27) (Fig.1)

### Characteristics of Pedestrian Friendliness

Permeability;

Legibility;

Variety;

Robustness;

Visual appropriateness;

Personalisation;

Richness. (Tiwari, 2013,23) (Fig.2)

### Diversity of Sidewalk Life Activities

3 important types of uses of sidewalk include:

Food;

Leisure;

Commerce.

And other uses of sidewalk include:

Store spillover;

Parking.

All uses will be increased at 6PM: by evening, some of the motorbike parking is replaced by sidewalk cafes which have swelled again to meet the after-work crowd. (Kim, 2012, 9) (Fig.3)

Principles of prioritizing to Pedestrian Movement in Urban Space are summarized in Table 2 and the characteristics of

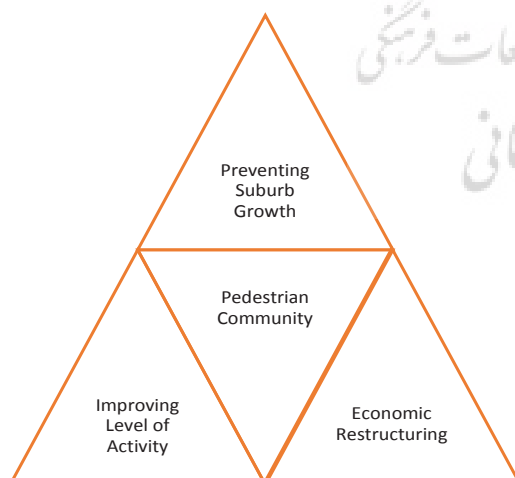


Fig. 1: Major Emphases of Pedestrian Community. (Goli, 2008,27)

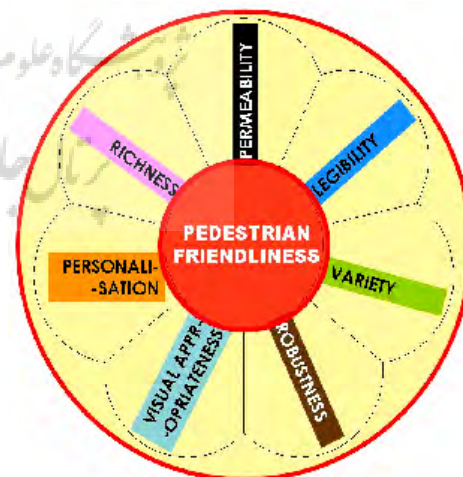


Fig. 2: User friendly trails. (Tiwari, 2013, 23)



Fig. 3: Diversity of Sidewalk Life Activities in 24 hours. (Kim, 2012, 9)

Table 2: Principles of prioritizing to pedestrian movement in urban space (Kashanjoo, 2014, 67)

Tom Franklin's control list (Ten-Items)
Landscape
Involvement
Focusing on Accessibility instead of mobility
Assessment of Walking as a form of Transportation
Attention to Quality of Pedestrian Paths
Need to Connection with Health Centers
Placing Equal Value between Small and Large Projects
Necessity of Result, not Outcome
Attention to Quality
Not Restricting Local Transportation Plan to Engineers

pedestrian site selection in the neighborhood are shown in Table 3.

### Categorizing Viewpoints of Iranian and International Scholars on the Pedestrian Area and Social Interaction

In accordance with the topics presented in Table 4, Iranian and International Scholars Viewpoints on Pedestrian Area such as Jane Jacobs, Jan Gehl, Serge Chermayeff, Bill Hillier, Cy Paumier, Ali Madanipour, Mostafa Gholipour has been presented and categorized into four components of physical, functional, aesthetic, and environmental.

Also Iranian and International scholars Viewpoints on

Table 3: Site selection criteria for pedestrian area design in the neighborhood (Kashanjoo, 2014, 72)

Dom Nozzi's criteria (sixteen-Items)
Convivial concentration of pedestrian
Residential densities
Human-scaled dimensions
Active and diverse retail
Traffic calming
24 hour activity
Narrow lots
Weather protection
Wide sidewalks
Unobtrusive equipment
Active building fronts
Modest turn radii and crossing distances
Proximity
Short block lengths
Vista termination
Appropriate businesses

social interaction such as Jan Gehl, William H. Whyte, Carr, Montgomery, Gehl and Gemzoe, Oldenburg, Christofer Alexander, Cyrill B. Paumier, Lefebvre, Cent, Henry Shaftoe, Wilson and Claret, Madanipour, Mostafa Hoseini, Rafeian has been presented and categorized into four components of physical, functional, aesthetic, and environmental. (Table.5)

### Definition of Case Study: Khajoo Neighborhood in Isfahan

#### The History of Khajoo Neighborhood

To Talk about Appellation and short history of Khajoo Neighborhood, it could be mentioned that Khajoo means deep stream. Khajoo is among the oldest and historical neighbors of Isfahan. Historical resources confirmed that the neighborhood existed in the 5th century and also it was thriving.

The neighborhood was one of the most prosperous areas and the place of nobility and courtiers. Long history of neighborhoods shows that there are strong cultural traditions and social customs.

In the following, Geographical location of Khajoo neighborhood, District 3 of Isfahan, Isfahan, Iran and Bazaar path in Khajoo neighborhood has been presented. (Fig.4 and Fig.5)

#### Identify Neighborhood Problems

The most important problems in Khajoo neighborhood are:

- Traffic node;
- Poor quality of pavement;
- Lack of public space for public use;
- Physical problems of neighborhood cores. (Fig.6)

Table 4: Summary of Different Theories on Pedestrianism

Theorists	Book, Article, Report	Concepts and Theories	Physical dimension	Functional dimension	Aesthetic dimension	Environmental dimension
Jane Jacobs	"The Death and Life of Great American Cities" Book, 1961	-Mixed uses, social mixture, Flexibility -Giving meaning to city center by active and vibrant pedestrian areas with possibility of social interactions and diverse behaviors		X	X	
Project for Public Space	Resulting from studying more than 1000 urban public spaces in different countries, 2003	-Accessibility and integration (pedestrian activities, transit, eligibility, connectivity) -Comfort and mental image (Walkability, Spirituality) -Uses and activities (Retailing, celebration and ceremonies, entertainment) -Sociability (social networks, night activities, voluntarily activities, amiability, diversity, cooperation)	X	X	X	
Serge Chermayeff	"Community and Privacy" Book, 1964	-Free public transportation facility -Rental bike in city centers		X		X
Jan Gehl	"Life Between Buildings" Book, 1987	-Three types of activity in urban space: necessary, optional, social -Livable city=Traffic Calming=using of public spaces by more numbers of people and spending leisure time in it		X		
Bill Hillier	"Space Syntax" Theory, 1996	-Natural preservation of urban space by presence of people in the space -Compatibility of successful public spaces with local traffic system and the importance of connection between spaces for pedestrians -Presence by product of movement in space in most of pedestrian travels: Possibility of doing other activities in addition to the primary function of travel from origin to destination, such as stopping to buy newspaper, talking with a friend, viewing and watching around.	X	X		
Cyril B. Paumier	"Creating a Vibrant City Center" Book, 2004	-The need to landscape design city center main streets as an attractive, inviting, comfortable environment for pedestrians by benefiting from plants, amenities and urban furniture -The role of high quality environment for city center pedestrians in physical and economic regeneration and making a high quality mental image for shopkeepers and retailers' activity -The need for having more than one commercial pedestrian street in a successful city center -The need to integrate both pedestrian and automobile traffics in urban core - Rich and vibrant outdoor restaurants and street cafes with city center pedestrian areas -The recommendation of only one specific type of pavement for using in whole pedestrian network	X	X	X	X
Jan Gehl	"Cities for People" Book, 2010	-More benches in space provide more sit -Fulfilling the goals of 21st Century including more vibrant, safer, more sustainable, and healthier city by increasing attention to pedestrians, bike riders, and life in city -Understanding space details by walking -Bike riders, part of urban life -Integrated transportation -Attention to urban soft edges -Inviting people to long stops and attractions -Presence of attractive sights at eye level -Making an attractive diversity from sensory stimuli in space -Creating desirable human landscape resulting from combining micro- and macro-scale new constructions -Prioritizing urban life in cities	X	X		X
Ali Madanipour	"Urban Space Design" Book, 2013	-Space-Time: A four-dimensional unity that incorporates the three dimensions of space with time. -Movement, the factor of experiencing space -The effect of transportation method on environmental perception: walking, the most proximity with environment	X	X	X	
Mostafa Gholipour	"The Role of non-Visual Senses in Quality Pedestrian Space" Article, 2014	-Possibility of benefiting from non-visual stimuli in city by pedestrian citizen				



Table 5: Summary of Different Theories on social interaction

Theorists	Book, Article, Report	Concepts and Theories	Physical dimension	Functional dimension	Aesthetic dimension	Environmental dimension
Jan Gehl	"Cities for People" Book, 2010	-City as place of meeting - public realm for exchanging thoughts and ideas		X		
William H. Whyte	"City: Rediscovering the Center" Book, 2009	-The best places: Rare mixture of qualities		X		
Carr et al.	"Public Space" Book, 1992	5 main needs that people want to meet in public space: - Comfort - Relaxation -Active engagement: A more direct contact with friends, relatives and strangers -Passive engagement: Watching people in environment -The possibility of discovering environment -Triangle phenomenon: Connection between people and strangers with the aid of external stimuli		X		
Montgomery	"Animation: a plea for activity in urban places" Article, 1995	-The importance of soft infrastructures (plans, activities, and various ceremonies) as much as hard infrastructures such as designing spaces -24 Hours city as new approach to city centers revitalization -A diversity of primary and secondary uses -Growth of retailing economy		X		
Gehl and Gemzoe	"New City Spaces" Book, 2000	-Three main functions of public realms over the history:resorts,Market and business,Place for meeting and communications		X		
Oldenburg	"The Great Good Place" Book, 1999	-The third place:The Great Good Place: Cafes, coffee shops, bookstores, bars, hair salons and the other hang-outs at the heart of a community -The third place: informal public realms which embraces communities that voluntarily gather happily away from home and workplace		X		
Christofer Alexander, Murray Silverstein, and Sara Ishikawa	"A Pattern Language" Book, 1977	-Effective factors in creating functional diversity: Diversity of uses, usage over time, diversity of age and sex groups of users		X		
Cyril B. Paumier	"Creating a Vibrant City Center" Book, 2004	-Possibility of observing the social interactions in city centers by creating opportunities for choice, surprise and adventure in individuals -Creating enough attraction for resorts to this place -Successful public space in the city center as basis for unusual social interactions, civil gatherings, informal recreations and holding special ceremonies -Using materials with highest quality as sign of respect to human values -Simple design of successful public realms	X	X	X	X
Lefebvre	"The Production of Space" Book, 1991	-Introducing three dimensions of cognitive, intellectual, and biological space as three social spaces	X	X	X	
Henry Shaftoe	"Convivial Urban Spaces: Creating Effective Public Places" Book, 2008	-Friendly urban spaces -Public realm as everyday social life -The necessity of formation of universal public spaces - Strolling in space -Open space restaurants -Providing possibility of impromptu dialogue between strangers by three ways: hard and soft landscaping, public art and entertainment	X	X	X	
Madanipour	"Urban Space Design" Book, 2013	-Place is a space that has got value by people -Urban core , a place with rapid movement of multiple identities and potential multiplicity of social relations and interactions -social Everyday life viewpoint: Looking at issues from below by the street-level -To spatially comprehension of city, we should look at it both from above and below: From above the viewpoint of political economy, from below the viewpoint of everyday life	X	X	X	
Mostafa Hoseini	"The Role of Collective Memory in Revitalizing Urban Contexts" Article,2013	-The role of collective memories on making sense of place and creating social capital and encouraging collective activities.			X	
Rafieian	"Urban Public Spaces, A Review and Qualitative Assessment" Article, 2005	-Four essential components of successful public realms: Accessibility, active engagement with the environment,Comfort,Relaxation, Being a social place		X		

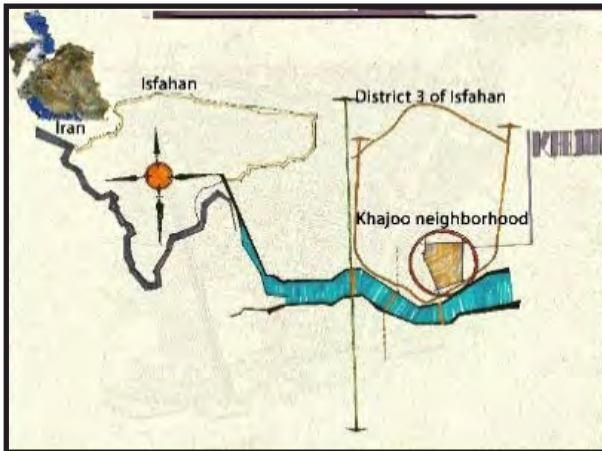


Fig. 4: Geographical location of Khajoo neighborhood





Fig.5: Google Earth photograph of Bazaar path in Khajoo neighborhood

❖ **Problem 1: The node between the roadway and pedestrian traffic and reduce pedestrian safety**

*Examined qualities:* the permeability of the pedestrian, safety, social mix, vitality

**Goal 1:** Provision of safety and security of pedestrians in the neighborhood






**A**

❖ **Problem 3: Lack of suitable space design in proximity of local waterfronts for public use**

*Examined qualities:* vitality, beauty, socialization, welcoming

**Goal 3:** Increasing the quality of public realms to encourage the neighbors to spend more time in public space





**C**

❖ **Problem 2: Poor quality of paving**

*Examined qualities:* safety and efficiency

**Goal 2:** Using new materials, divers with high quality, especially at sidewalk





**B**

❖ **Problem 4: Inadequacy of neighborhood core according to physical criteria**



*Examined quality:* eligibility, memorize, visual proportions, sense of place



**Goal 4:** Reorganizing of public spaces on the site according to physical criteria








**D**



Fig. 6: Identify the neighborhood problems (Khajoo neighborhood, Spring 2015)



Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Increase active participation of residents in urban spaces				1.convivial concentration of pedestrian	
-Mix use of residential and commercial				2.Residential densities	



Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
Usually the proportions and human scale are considered				3.human-scaled dimensions	3
increase the number and variety of retailers				4.active and diverse retail	4

Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Prioritizing pedestrian movement -Reduce the width of the roadway				5.traffic calming	5
-Increasing the number and open hours of grocery store, bakery in the neighborhood core				6.24 hour activity	6

Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Designing narrowed areas with especial paving for pedestrian				7.narrow lots	7
-Preparing canopy for pedestrians and cyclists for weather protection				8.weather protection	8

Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Paying attention to providing spaces for staying and people with disabilities				9.wide sidewalks	9
-Appropriate site selection of power lines in order to have visibility and accessibility				10.unobtrusive equipment	10

Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Increase the activities of commercial uses				11.active building fronts	11
-Paying attention to geometrical dimensions in design				12.modest turn radii and crossing distances	12

Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Site selection of compatible uses				13.proximity	13
-Defining the low length blocks in order to permeability -Determining criteria for size of blocks				14.short block lengths	14



Solutions	Pictures	There is not This criteria in Khajoo neighbourhood	There is This criteria in Khajoo neighbourhood	Dom Nozzi's criteria	row
-Encouraging pedestrians to continue walking				15.vista termination	15
-Increase the number of active commercial uses all around the paths,not only in the core of neighborhood				16.appropriate businesses	16

Fig. 7: Examining criteria of pedestrian site selection in Khajoo neighborhood (Khajoo neighborhood , spring 2015)



## Examining the Criteria of Pedestrian Site Selection in Khajoo Neighborhood

According to theoretical framework about pedestrian areas site selection, in this chapter we examine Dom Nozzi's criteria (sixteen-Items) in the area of study through the pictures, Then suggested solutions were represented in order to improve and design pedestrian area. (Fig.7)

## RESULTS AND DISCUSSION

Various aspects of physical design of pedestrian area include:  
Surface Design;

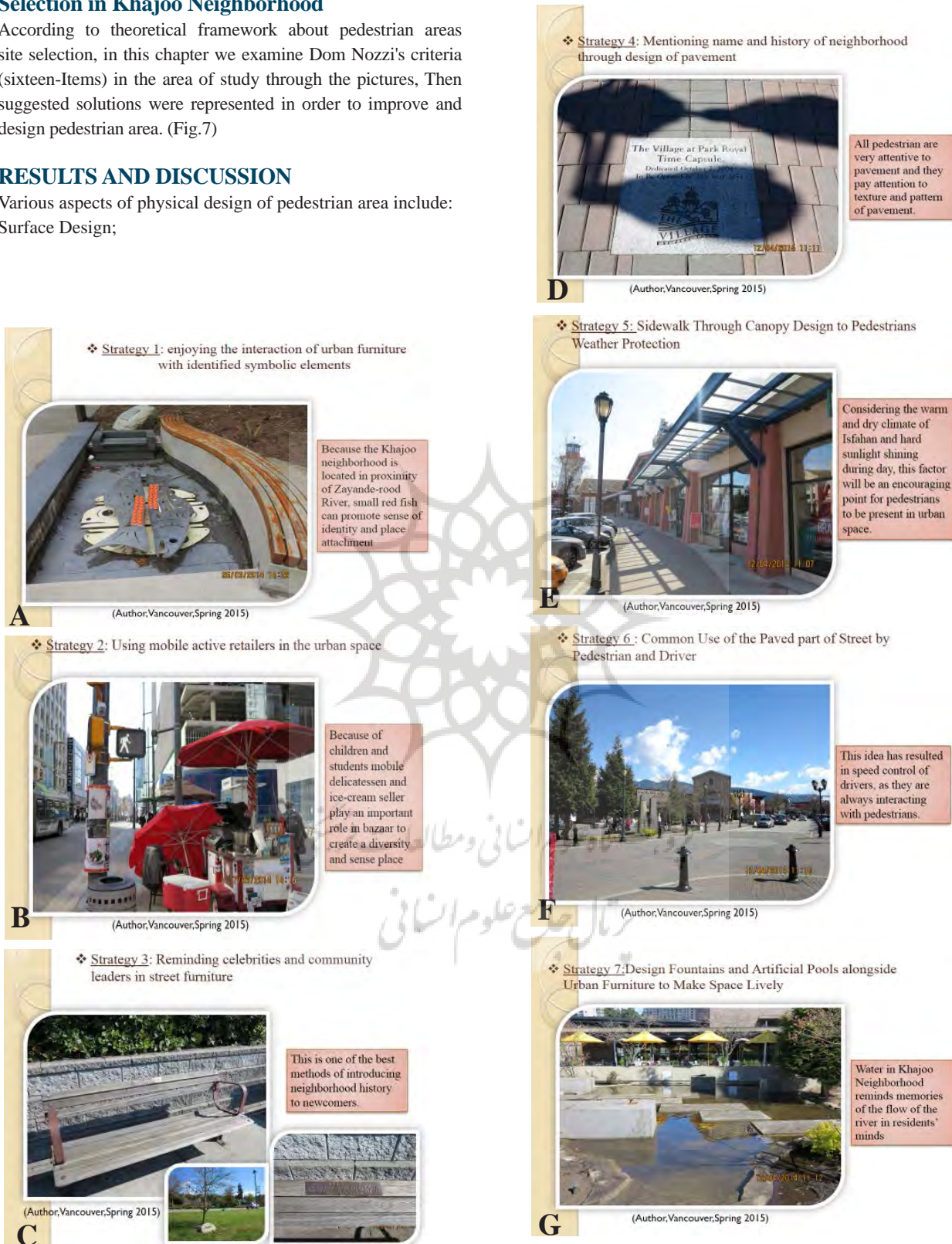


Fig. 8: Proposing creative solutions for pedestrian area design in Khajoo neighborhood (using the successful international pedestrianism projects)(Vancouver ,Canada ,Spring 2015)

Minor Architectural Features;  
Equipment for play and leisure;  
Lighting;  
Green spaces and plants;  
Fountains;  
Public art. (Kashanijoo, 2014, 90)

In the following ,some of the best creative strategies for pedestrian area design in Khajoo neighborhood by using the successful International pedestrianism projects have been proposed. (Fig.8)

## CONCLUSION

In the present study based on relevant literature of pedestrian zones, some of the most important criteria for of design of pedestrian areas and social interaction have been obtained. Also the criteria are categorized in four components including physical, functional, aesthetic, and environmental. For effective use of indicators, they compared and adapted with local cultures and social norms of residents. In this process special attention has been paid to mobility, cultural traditions, social norms, gathering places and so on. As a result, indicators to assess and design of pedestrian areas in the neighborhood have been

Table 6: Dimensions, principles, criteria and indicators of pedestrian area design to promote social interaction in Khajoo Neighborhood

Dimension	Principles	Criteria	Indicators
Physical dimension	Walkability Promote social interaction	1.Accessability and permeability 2.Safety and security 3. Physical form	1-1-Smart and integrated transportation system 1-2-Traffic calming 1-3-Priority of pedestrian and bicycle 2-1- Visibility of pedestrian and driver 2-2- Diminishing dark and secrete corners 2-3- Active building's facade 3-1- Beautification of the urban environment 3-2- Removing obstacles and annoying elements in space 3-3- Suitable pedestrian infrastructure
Functional dimension	Walkability Promote social interaction	1.Diversity, mix use and compatibility of activities 2. Flexibility 3. Liveability and vitality 4. Welcoming and social interaction	1-1-Diversity of users 1-2-Diversity of available transportation mode 1-3-Compatibility of land use 1-4-Restaurants and cafes in open spaces 2-1- Multifunctional spaces for days and nights 2-2- flexible urban furniture 2-3- preparing urban spaces for optional social activities 3-1- convivial concentration of pedestrian 3-2- Long time stop and attractions in space 3-3- Easy face to face communication 3-4- Presence in the street as a destination 4-1- Social urban space 4-2- collective memories 4-3- Paying attention to human scale 4-4- Strolling and pause 4-5- protecting public space, semi-public and private spaces 4-6- Sense of place 4-7- Public art
Aesthetic dimension	Walkability Promote social interaction	1.Legibility 2.Visual character	1-1-Landmarks 1-2-Historical building 1-3-Human scale design at eye level 2-1- Complexity, enjoyment and visual pleasure 2-2- Considering architectural values in design 2-3- Proportions and details of facades
Environmental dimension	Walkability Promote social interaction	1.Harmony with nature 2.Energy Efficiency 3.Weather protection	1-1-Promoting pedestrianism 1-2-Prediction of open spaces 1-3-Encouraging people to use non-motorized vehicles or public transportation 2-1- Paying close attention to shadow and orientation of buildings 2-2- Using local materials 2-3- Active and diverse retails 3-1- Reducing pollution (noise and smell) 3-2- Design Shelter of Transportation stations 3-3- Preparing the charming fountain in urban space

proposed.

Among important criteria of sustainability are: reduction of fossil fuels use, reduction of air pollution in order to increase public transport, promoting attractive of urban space in order to encourage its citizens to enhance walkability and health. Since in recent centuries these criteria are attracting considerable attention, therefore the importance of walking and pedestrian role has been raised again and planners and managers in Europe and America are trying to putting them into practice. It is rational to use international experience in order to make urban spaces healthier and more suitable to human needs. In present study based on principles and criteria of pedestrian-oriented design several indicators have been proposed which all of them intend to encourage people to walk and social interactions, and in whole view they leads to revitalization of Khajoo neighborhood.

It is worth mentioning that in proposing solutions, we always keep in mind three major goals of urban design including enhancing sense of unity, enhancing sense of attachment to place, diversity and vitality.

At the end, the most important Dimensions, principles, criteria and indicators of pedestrian area design to promote social interaction in Khajoo Neighborhood will be presented in the following chart. (Table.6)

## ACKNOWLEDGEMENT

This article is taken from the Elaheh Naghibi master's thesis entitled "Design of walkway with the promotion of social interaction approach "that is presented in Islamic Azad University, Science, and Research Branch Tehran.

## ENDNOTES

1. Isfahan is the capital of Isfahan Province in Iran, located about 340 kilometres south of Tehran.
2. Naqsh-e Jahan Square is one of the first Iranian national monuments as World Heritage is also a world record.
3. The Grand Bazaar is a historical market located in Isfahan, Iran, also known as "Qeysariyeh Bazaar"
4. Chahar Bagh Khajoo Boulevard is a historical avenue in Isfahan constructed in the Safavid era of Iran, The avenue, historically, is the most famous in all of Persia.

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