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Urban Design and Social mixing in the Neighborhood Districts
(Case Study: Abadan, Iran)

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ABSTRACT: Social diversity in the neighborhood districts has been the new approach for the challenges resulting from varieties in cities. Social interpreters of this policy are to create neighborhoods where people of different ages, ethnic-racial backgrounds, income, etc. take a place in it. In this regard, many designers by using the concept of different forms of ownership such as housing schemas, different types of constructing and housing etc. have tried to promote it. Due to the less interest that came toward this issue, the knowledge of this mechanism is poor in urban ecology of Iran. The aim of this study is to assess the effects of urban design in promoting the social mixing which is determined with the research of the Abadan community areas. Relevant parameters have been studied with library studies, field visits and by the use of qualitative and quantitative analytical methods. Therefore, after reviewing the relevant concepts, we are going to test hypotheses by the examination of case studies, and finally, the influences of urban design criteria are presented.

Keywords: *Social diversity, Association and Mixing, Qualitative Components, Urban Design, Abadan*

INTRODUCTION

Social mixing promotion can be known as an approach for responding to "the switching separation" and "social exclusion". The formation of districts with distinct identities which reflect the common features of identity, ethnicity, income, lifestyle and nationality, is the objective reality of today's settlement that have fueled the social contradictions, inconsistencies, exclusion and inequality of the city. Social integration of people through planning and urban design, instead of separating the different social groups in different areas, which potentially lead to separation and fragmentation of the city, can open a way for the solidarity and the social integration. In this regard, many planners and urban designers by using different schemas that will lead to the creation of mixed communities have supported the promotion of associated communities. Advocators of this idea believed that such measures conducted toward vitality, security and economic well-being, and pave the including path of social equality and also social sustainability. This paper focuses on urban design, which helps facilitate peaceful co-existence, in order to assess the impact of urban design strategies with methods and receives policies in each quality indicators (visual, perceptual, morphological, functional, social and time) are explained on social mixing. The main question and hypothesis is: Is there any connection between the quality of urban design and social mixing degree in studied areas? It seems that there is a significant relationship between the diversity of the place and some qualitative aspects of urban design. The variables of this study, according to the mentioned hypothesis include land use incorporation, separation pattern of parts, different types of buildings, accessibility and communication.

MATERIALS AND METHODS

Approach is governing on quantitative - qualitative research and case research strategy and case research geographic areas

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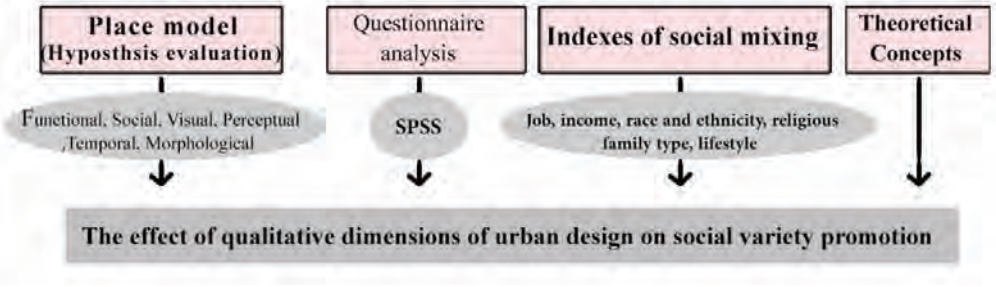

Fig. 1: Role model for measuring the qualitative indicators of area on social mixing in the Abadan areas

of Abadan. In this study, at first, we randomly selected 15 districts and in the preparation of the sample size of statistical population is used from Cochran formula. After the survey and data analysis by using SPSS software through using Simpson's formula, social diversity was measured in the 15 neighborhoods of Abadan, in following two areas with the highest and lowest social diversity selected and quality aspects of urban design and its effectiveness is evaluated on the mixing area. Finally, the impact of strategies and policies related to these indicators about the social composition promotion in neighborhoods are presented (Fig.1).

Research Background

Many theorists have consensus on this issue that design influences all non-physical areas. Despite knowing this issue, the role of urban design is often neglected in achieving social objectives such as social mixing, so that in many of the urban planning books such as "Planning for Diversity" by Dory Reeves (Reeves, 2004) or sociology books were widely talked about the consequences of social segregation, social exclusion and social equality need, but they were not provided specific recommendations and strategies for the realization of designing physical mixture. Among these items, we could point to two theorists who are specifically regarding the issue of diversity, Jane Jacobs and Emily Talen. Jacobs states four main conditions for creating a variety in street and urban areas 1. The range preferred to have more than two main functionally dominant 2. Blocks forms should be short 3. Area should be combined with buildings with various ages and conditions 4- enough compact density of people should be there regardless of the reason for their presence (Jacobs, 2009). In fact, Jacobs considers user diversity as the factor of activities variety and considers the activities variety as the diversity factor. What Jacobs suggests as variety is more close to the concept of complex life in public spaces (Francis, 2015). Emily Talen has expressed three basic ways to create neighborhoods with high social diversity.1- Incorporation -2 interactions 3. Security. It refers to different types of buildings, services and facilities and their support in combination, interaction refers to the importance of the public field relations, identified locations and also dealt with the role of road networks and security arises the issues to avoid the fear of living with strangers and their participation in the area (Talen, 2008). However, the valuable perspective that in particular refers to the need to design neighborhoods with social mixing which is the charter of the New Urbanism. New Urbanism principles with an emphasis on physical design as a tool to improve the quality of life in urban areas in an attempt to balance the mixed use, urban compact form, interwoven network of streets and organized city blocks, a variety of species and different density of housing and a sustainable design (Gard, 2015). New Urbanism design principles in the areas of neighborhood unit is originated from the neighborhood scheme, but in contrast to the emphasis on the concept of neighborhood areas on social heterogeneity with suggestions on the presence of a wide range of different types of housing with different prices in the neighborhoods that help the positive interaction of different classes of people from different ages and every races and any income in order to encourage disparate and heterogeneous neighborhoods in social terms (Calthorpe, 2008). Charter of the New Urbanism approach is acceptable in terms of physical and analytical model of the findings of the physical part of the Charter has been applied.

Theoretical Principles

The Qualitative Aspects in the Environment

All qualitative parameters in accordance with the findings of researchers are formed in a variety of different dimensions, due to this reason, some theorists for their studies for the classification of this qualities has offered some models. There are generally four models in this area: crank model, counter model, Appleyard model and Carmona model etc. In this study, the Carmona model which is dealt with it in "public places, urban spaces" book, has been the principle of the job, in which 6 different means of high quality urban environment are shown in Fig. 2(Carmona et al., 2009) (Table 1).

Social Association

As stated, social mixing promotion in response to heterogeneous

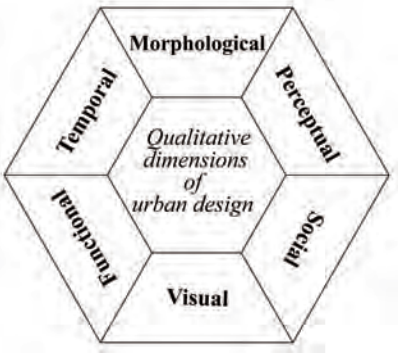

Fig. 2: The qualitative dimensions of urban design. Reference: (Carmona et al., 2009)

Table 1: Manufacturer indicators and components in place model (Carmona et al., 2009)

Dimensions	Morphological				Functional				Social					Temporal		Perceptual			Visual		
Manufacturer Component	Land uses	Building structures	Resolution pattern	Network communication	Use of Space	Mixing functional	Environmental design	Capital web	The relationship between people and space	Public realm	Neighborhood units	Safety & Security	Social equality	Cycle time	Time for change	Perception	Environmental meaning	Sense of place	Aesthetics preferences	Public space	Design of visual elements

of neighborhoods in the city, encourages many of planners and urban designers upon the physical measures such as the creation of lively public spaces, and mixed land uses, different forms of ownership housing, mixed-income areas to support the promotion of mixed and integrated community. However, this form of incorporation also varies from one place to another place, such as a large number of new cities in Europe, the main focus is on workers' housing and in the meantime housing a relatively limited number of houses mayS (Conzen,1960) also be considered for craftsmen and professionals while many planned communities in the United States, the middle classes and wealthy society are the target groups and only a few affordable housing are offered (Site, 2015). In Table 2, some examples of different approaches of theorists who are advocators of mixing in place type 1 are summarized. As Table 1 shows the development of social mixing is possible, in different urban spaces in different indicators by different ways. In this study, evaluating the manufacturer components of each indicator has conducted the effectiveness of each representative.

Case Study

Introduction of the Studied Area

Abadan is the center of the city of Abadan in southwest of Iran and is located in Khuzestan province (Fig.3). Cornerstone of Abadan was on migration from the UK, India and Iran urban and rural areas to the city. Abadan should be known as the first settlements and industrial city of Iran that the most important factor of its formation has been the oil refinery (Lahsaeizadeh, 2006).

Sampling Method, Sample Size Determination and Measurement Indicators

This study has used a systematic random sampling method due to the reason of being more common than the other methods. The number of questionnaires and the sample size were determined based on kukran formula (Table 4) and the evaluation of diversity degree in a range is used of Simpson index. In the study of the social composition, income basic aspects, occupation, education, family type, the type of life and ethnic issues in different areas were evaluated (Table 3) and the diversity of each sub-type of social mixing (employment, income, education, etc.) were obtained according to the formula Simpson and then with equal weighting to each of the factors influencing the social mixing and overlapping layers in the GIS, the social diversity at three levels: low, medium and high were evaluated. Amiri and Ahmedabad districts with the highest social mixture and community of north and south Bovardeh with the lowest level of social mixing were selected as target communities (Fig. 4).

Table 2: measurable details of social diversity norms in qualitative indicators of area in neighborhoods: where the presence and the existence of each of these features can be maintained, strengthened and cause social diversity in place

Dimensions/ Norms	Morphological	Functional	Social	Perceptual	Visual	Temporal
Social variety	The presence of buildings with different ages Design of small-scaled blocks The penetrating texture enhancement Variety in the size of segregation parts Preventing from the implication of large-scale project Variety in building density Different size and versions of residential Spatial unity between public places Variety in type and version of roads Checkered road network	Mixed activity Variety in activity and events Multi-services spaces Public places Land use variety Accessibility for all Predicting the movement forms	Accessibility for all Answering to all needs of people Compact density of people The power possibility in the freedom of speech The social life possibility Jobs frequency The presence of different types of people Variety in the form of ownership Variety in the houses prices Presence of special social groups (women, men, (…handcrafts Variety in people's income	The more readability of limited area The presence of different elements The presence of different principals in space	Variety in buildings styles The presence of differed forms of buildings Variety in materials of buildings	Activity balance in night and day Accessibility in different times Being 24/7

*This table summarizes the results and Table 3.8: " diversity in environmental indicators based on different views" in the M.A. essay of a urban design program entitled "Diversity in urban spaces" p106-198 that views of theorists such as Jane Jacobs, Allan Jacobs and Donald Applyard, David Chapman, New Urbanisms, Carmona, Kurten Knap, CD Pamir and the various components have been studied.

Fig. 3: The location of the studied area: (wikipedia, 2019)

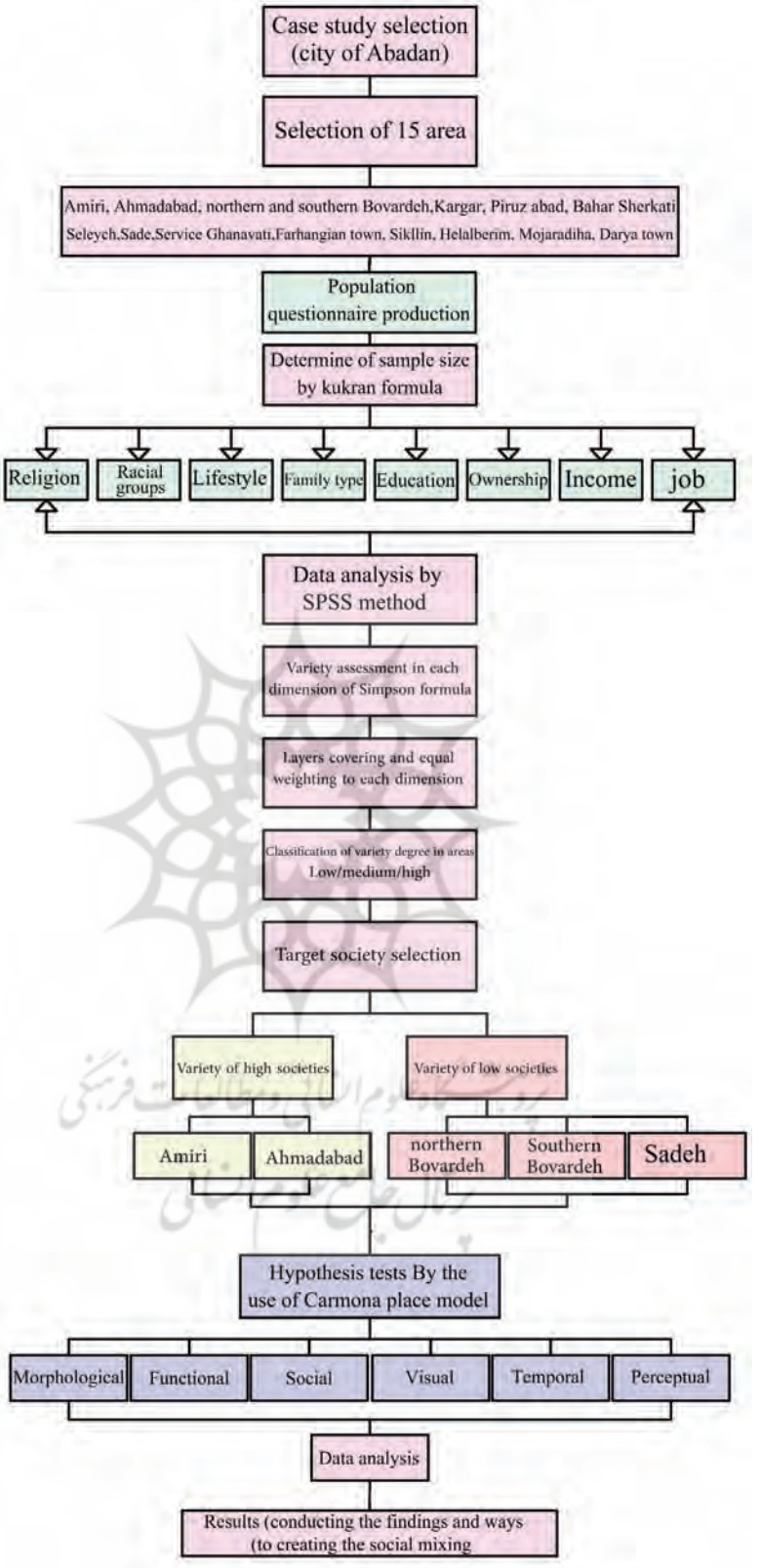

Fig. 4: The Research Process

Table 3: Description of categories used to calculate the index of social diversity

Social diversity indices	Categories
Job	1. Agriculture and livestock / 2. Worker / 3. Employee / 4. Free (seasonal) / 5. Unemployed / 6. Other (carpenter, etc.)
Family income	1. Less than 300 thousand toman / 2. Between 300 and 600 thousand toman / 3. Between 600 to 900 thousands toman / 4. Between 900 to one million toman and 500 thousand toman / 5. More than one million and five hundred thousand toman
Education	1. Illiterate / 2. Under diploma / 3. Diploma and Advanced Diploma / 4. BA and higher
Race and ethnicity	1-Tork / 2-Kord / 3-Lor / 4-Arab / 5-Persian / 6-Other
Language	1. Turkish /2. Kurdish /3. Lori / 4. Arab / 5. Persian / 6. Other
Religion	1. Shia / 2. Sunni/ 3. Christian / 4. Armenian / 5. Zoroastrian / 6. Jewish / 7. Hindi / 8. Other
Family Type	1. Single / 2. Married
Lifestyle	1. Multi-core / 2. Independent

$$n = \frac{Nt^2S^2}{Nd^2+t^2s^2}$$

n=sample size statistical population

N = statistical population of whole population

S^2 = variance

t= Confidence index

Kukran formula

$$D = \frac{\sum n(n-1)}{N(N-1)}$$

D=Variety index

n=Total number of organisms of a particular species

N =The total number of organisms of all species

Simpson index

Fig. 5: Simpson Formula index (level of social diversity) and Kukran formula (sample size)(Supergeotek, 2019)

Table 4: the required sample size based on Cochran formula is trust level of 95% and the number of questionnaires collected from localities (according to the experience upon the limited area, in the neighborhoods where it was initially assumed that has the highest and lowest social diversity with the reliability of 99% of the questionnaire)

	Amiri	Piroozabad	Service Ghanavati	Selych	Northern Bovardeh	Kargar dormitory	Farhangian town	Ahmedabad	Darya Town	Bahare sherkati	Sadeh	Southern Bovardeh	Siklin	Helal Bream	Mojardyha
The number of required questionnaires according to Kukran	55	50	50	55	1 5	54	51	55	52	53	55	51	47	47	33
The number of removed questionnaires	249	50	50	55	174	55	55	170	55	60	55	180	50	50	40

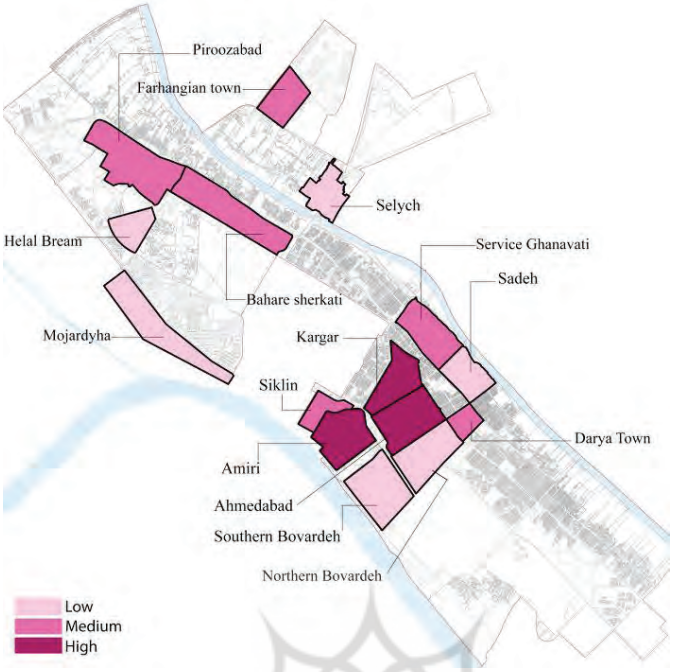

Fig. 6: The social composition of neighborhoods was classified into three

RESULT AND DISCUSSION

Morphological: Its dimensions and effective measures on social diversity

The analyzing of results of studied morphological parameters in indicator and their impact on social diversity of the neighborhoods in Abadan are as follows:

- Land use: land use maps and field observations of neighborhoods status quo indicate that the Amiri and Ahmedabad district has a high mixture in its land use type and this land use mixing covers different radius of action (local urban scale). Most land use forms with regional scale can be located in the main urban areas and other land uses are located within the local and regional scale in the secondary passages. From other characteristics of the land in this neighborhood, we can name the constant changes of land use types, mobility and their location changes within the neighborhood and also pointed to a commercial retail presence. In North and South Bovardeh, land uses are most residential and only public index is educational (Fig. 7) (Table 5).

• Buildings: A wide diversity in age, quality of buildings are characteristics of Amiri and Ahmedabad neighborhood, which causes variations in land uses and increasing the purchasing power and living of different parts of the neighborhood. Another important feature of the process of renewal and improvement in this field should be pointed out in the neighborhood. Construction of buildings with 3-4 floors and sometimes 5 floors in the neighborhood, is portrayed a perspective of different classes of urban villa apartments. The existence of homes in various architectural styles addresses that people with different tastes are in the neighborhood. Northern and southern Bovardeh neighborhoods have the lack of diversity in the age and quality of life and buildings, and often in a villa with quality refurbished buildings with a lifetime of more than 80 years (Fig. 8) (Fig. 9). •

Land Separation Pattern

Blocks separation pattern: In North Bovardeh neighborhood, shaping blocks has often irregular form and mostly forms the big residential blocks, which in some cases have taken introverted form. Large blocks in the neighborhood reduced the infiltration rate within the context. In the neighborhood of South Bovardeh, the blocks are irregular and checkered and the frequent number of blocks of coarse grains can be found in the neighborhood. Ahmedabad neighborhood has checked and regularly blocks often have a fine and high permeability within the context. The form of checked network has increased the texture availability. In Amiri neighborhood, the number of coarse grains blocks and mid-grain ones were roughly equal (Fig. 11).

Separation model of parts: in the northern and southern parts

Table 5: A comparative study of land use in the neighborhood

The dominant details of land uses of north and south Bovardeh areas	The dominant land use Details of Amiri and Ahmedabad areas
• Single-use (residential)	• Diversity in land use type
• Register of teaching index	• The variety of mixing applications
	• Availability of land
	• Variations in the performance measure of land use
	• Structural cohesion between different performance scales
	• Land use distribution in the neighborhood
	• Changes in public places in the neighborhood

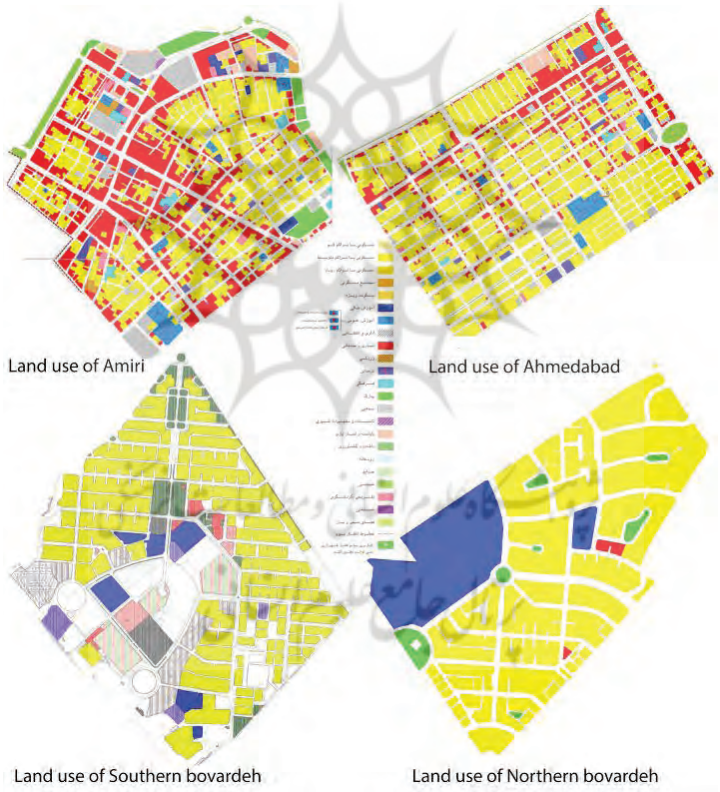

Fig. 7: Land use in neighborhoods. Reference: (Tarh o Amayesh, 2012)

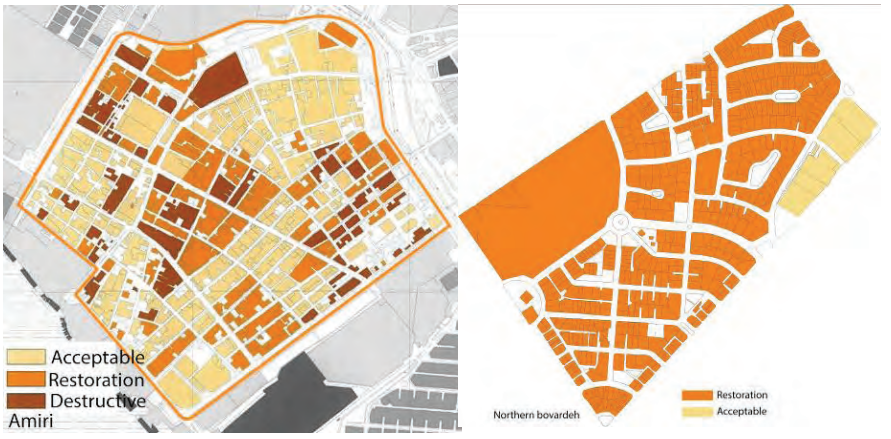

Fig. 8: Quality of the buildings in neighborhood of Amiri (left) and northern Bovardeh (right)

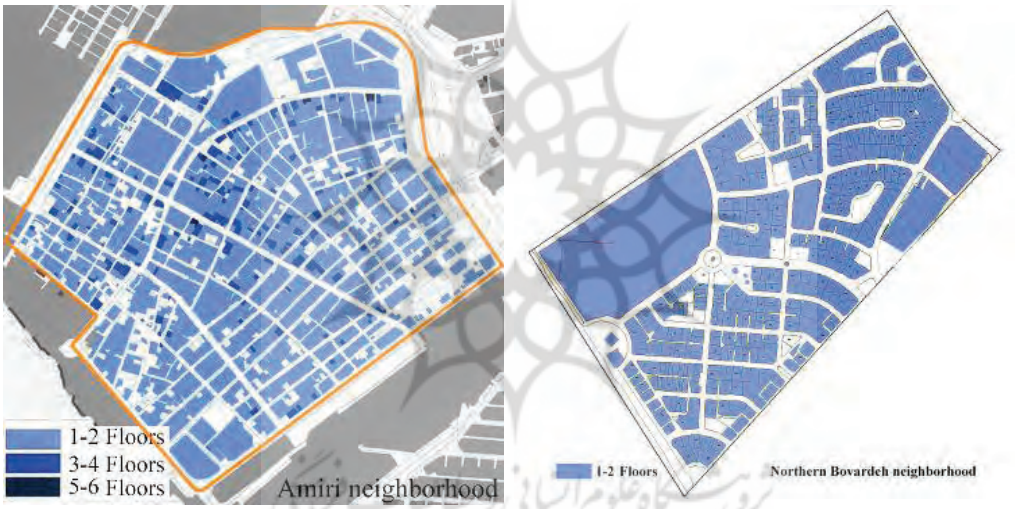

Fig 9: Number of floors of Amiri neighborhood (right) and northern Bovardeh neighborhood (left) (Tarh o Amayesh, 2012)

Table 6: The dominant feature of buildings in the neighborhood Amiri and Ahmedabad

The dominant feature of buildings of Amiri and Ahmedabad neighborhood
Diversity in the ages of buildings
Variations in the quality of the buildings
Variation in the number of classes

of the Bovardeh neighborhood, the size of parts are often large-scaled and often between 500-2500 square meters which can mean financial ability to purchase a limited number of classes or residence. In Ahmadabad and Amiri, the variety of segregation details can be seen clearly and this can provide the purchasing and residence power of people with different incomes and caused a variety of types of property (Fig. 10) (Table 7).

The Communication Network Structure

Permeability within the texture: The available regular checkered grid in the area of Ahmedabad increased the accessibility rate to environment and has provided the choice to cross within the context or median issue. The small block of this area also has provided more visual and physical access to the various parts. In the neighborhood of Amiri, communication network in terms of form was chaotic. Northern Bovardeh neighborhood streets can be seen in part as a pod, and in most cases is of irregular form. Southern Bovardeh local network in general view is checked and regular (Fig. 12).

Access to the neighborhood: The best availability of various

Table 7: The Grading frequency degree of the pieces in four quarters neighborhoods by percentage

Ranging	Amiri	Ahmedabad	Northern Bovardeh	Southern Bovardeh
0-200	75/7	81/1	1/1	2/0
200-500	19/2	17/5	33/3	48/3
500-2500	0/6	1/1	63/5	42/5
2500- higher	0/6	0/15	2/1	7/2

Fig. 10: parts separation pattern

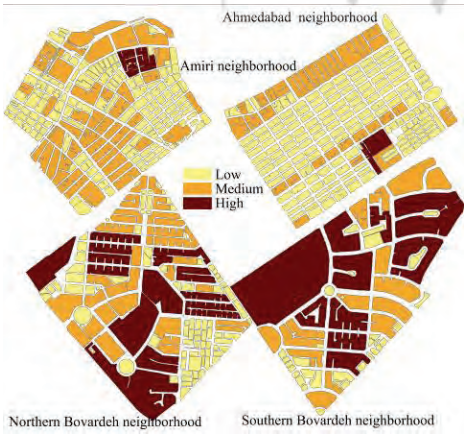

Fig. 11: Blocks separation pattern

parts of the city is toward Amiri and Ahmedabad districts and the Northern and Southern Bovardeh accessibility is often difficult and often only private car is possible. Also, around and within neighborhoods of Amiri, public transport Ahmadabad services such as taxi lines in order to access different parts of the common can be seen frequently.

Public open spaces: Public spaces of Ahmadabad and Amiri neighborhood were the same order of major markets of the neighborhoods within-context

That has a lot of vitality and dynamism due to the diversity of users around the area. The structural integrity of these areas with the network is important points of Contexts: Public open spaces in the neighborhood of Bovardeh have become semi-private areas because of blocking within the blocks.

Functional: its Dimensions and effective measures on social diversity

This section focuses on urban design and functional aspects (how spaces work) and includes sectors such as public spaces, functional and accessible blending.

Public spaces: From the evaluation of field observations and surveys can be concluded that the commercial-recreational streets of Amiri, Amirkabir, Imam and Pahlavi in the neighborhood of Amiri and the main roads of 1, 4,7,10 and the sub-4 in the neighborhood Ahmadabad involve the public spaces in which significant presence and social interaction are important. In addition to this, we should point out the need to expand the parks of Shapur, Taj and Moalem around

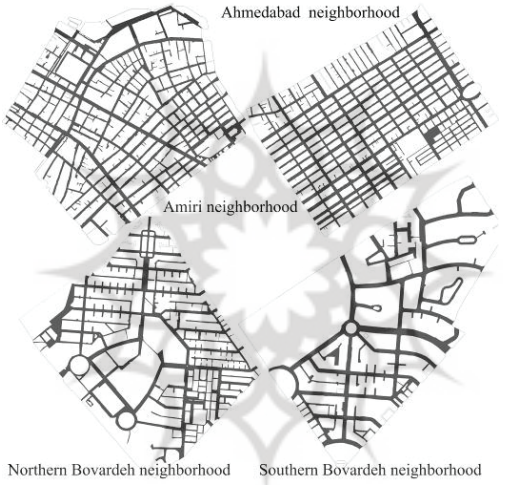

Fig. 12: Streets pattern

Table 8: The dominant characteristics of Morphological components in the Ahmedabad and Amiri neighborhood

The dominant characteristics of Morphological components in the Ahmedabad and Amiri neighborhood
Diversity in the age
Variations in the quality of the buildings
Variation in the number of floors
Small-sized blocks
Variations in segmentation segregation
Access to the neighborhood
Access to different parts of the various forms of public transport
Strong cohesion between the position of public areas with the within-context of the communication network

Table 9: The physical mode of public spaces of social activist in the neighborhood

Quarter	The physical public space socially
Amiri	Public spaces such as streets of Amiri, Emam and Pahlavi such as the function of most commercial recreation Shapur parks green spaces, Moalem parks, Taj park, park within the regional crown
Ahmedabad	Lane 1 Avenue and sub-4 as a function of the prevailing commercial and recreational spaces There are green spaces and parks in Karoon Square neighborhood - adjacent to the park Teacher
Northern Bovardeh	Green spaces between the blocks without social spirit
Southern Bovardeh	A green spaces around the neighborhood
Sede	Local streets with poor functional socially Vegetation in the East Area

the neighborhood of Ahmadabad and Amiri. These areas are important in performance of social vision to the possible involvement of active and passive performance in space. However, in the neighborhood of northern, southern Bovardeh due to lack of supervision on little public spaces, lack of absorptive performance on the field of public and private and public has rarely used these spaces and the presence of all were observed in that place (Table 9).

Functional Incorporation: There are open areas in the neighborhood of Amiri and Ahmedabad and variety of applications and land uses around them have caused that people get motivated to see, and,walking. This is likely to increase the possibility of face to face increased the social interaction among people. In this case, the important things, such as the presence of specific uses like religious places that in the Amiri neighborhood has the most diversity by the presence of the church, mosque, temple, Khanqa' and Hosseinieh of different ethnic groups can be seen, and these spaces with special functional activities and special events give special

Table 10: Details of most public areas

The dominant feature of the public areas in neighborhoods with high social diversity
High social control on space
Having a sense of security
socialization (social diversity)
Being Public
A variety of applications (especially applications that are enabled space leads)
The structural integrity of the public sector
A strong relationship with the network main thoroughfares
Strong communication with the public transport in the city
Off facade walls
Dynamism and vitality of space

performance to the neighborhood. Unlike the neighborhood of Northern Bovardeh, there were only an inactive half of a mosque and public open areas for public spending on housing around them and the lack of adequate supervision has not a proper vitality and dynamism, the mere use of the space in their homes causes the single performance in place. In terms of performance in the areas of Ahmedabad and Amiri School property, which are private, non-profit and public, but in Northern and Southern Bovardeh state owned public ones. It should be noted that the lack of social diversity in schools in neighborhoods can cause to lose confrontation and coexistence with other classes of society.

Accessibility and Public Parking: These studies concluded that the places with social diversity have more public facilities in this field, so that the two public parking are located in the neighborhood of Amiri and one in the neighborhood of Ahmadabad. Also, out of the three position of the terminals of public transportation, one is located in the Ahmadabad neighborhood and the other one is located in the Amiri neighborhood. While both south and north Bovardeh have no convenient access to public transportation, this matter is one of the main reasons people settled in these places because of accessing to other parts of the city can be difficult because of increased dependence on private cars (Fig. 13-14).

Social dimension: Effective dimensions and measures on social diversity

The studied social components actually are the same measures of social diversity that reflects the diversity of occupation, education, religion and family in the neighborhood of Amiri and Ahmedabad. The statistical results show that racial and ethnic distribution in all areas is about the same, and the most important social separation can be stated as economic returns. One of the most important social issues can be stated such as social security of areas, according to prepared statistical questionnaire, the rate of crime in public open spaces and neighborhoods of Amiri and Ahmadabad due to the 24/7 hours of activities, active monitoring of streets and spaces are less than that of the both southern and northern neighborhoods of Bovardeh

Perceptual dimension: effective dimensions and measures on social diversity

Studying the perceptual dimension was to ask neighborhood residents to sketch and draw their image of their place of residence, then tied the visual elements, signs, road, the

Table 11: The dominant feature of functional integration in neighborhoods with high social diversity

The dominant feature of functional integration in neighborhoods with high social diversity
Diversity in land use
Variety in Performance Scale of each land use
Structural cohesion between different performance scales
Land distribution in the neighborhood
Diversity in schools and educational facilities in terms of ownership types
Variations in the quality of schools and educational spaces
(.The diversity of religious places (church, mosque, etc

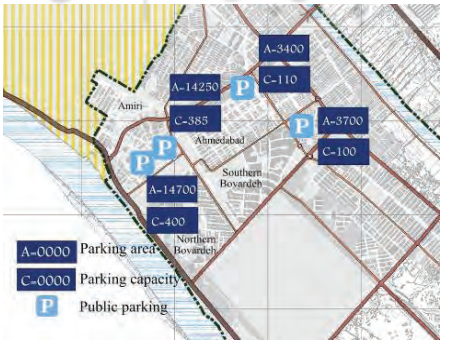

Fig. 13: Public parking (Tarh o Amayesh, 2012)

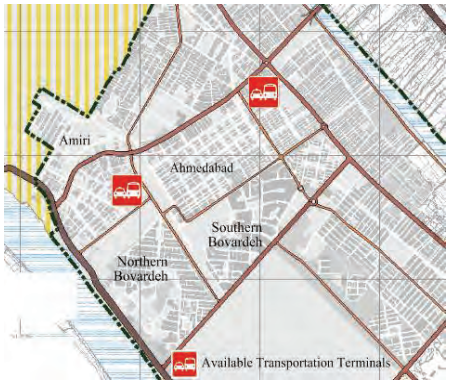

Fig. 14: Available Transportation Terminals (Tarh o Amayesh, 2012)

zone and the edge on their painting drawings were analyzed, the results showed that Amiri and Ahmedabad districts have more readability (Figure 18-19) and north and south Bovardeh neighborhoods due to the absence of signs and elements of visual uniformity, people often do not have an image in their minds and different parts of neighborhood are the same for them (Table 14).

Visual dimensions: effective dimensions and measures on social diversity

Studying the visual dimensions in neighborhood shows that areas of Ahmedabad and Amiri have low quality in this context, and however the North and South Bovardeh have a good quality. Modernization process in Amiri and Ahmadabad without the control of construction standards created buildings of different styles, often without coordination with each other and hence leads to visual confusion. Buildings with a number of different classes and floors in proximity to each other only formed amorphous and irregular skylines. Low quality building materials, burnout, poor quality and unsuitable flooring and totally low quality of aesthetic elements are characteristics of Amiri and Ahmad Abad neighborhood. However, in north and south Bovardeh neighborhoods buildings with a height of one floor, central residential homes with abundant vegetation around them led them to visual harmony. Strong vegetation covering in the streets and the green wall of in the houses of area has created beautiful Corridors.

Time dimension: Effective dimensions and measures on social diversity

Based on field observations and active presence of author in the studied communities, Amiri and Ahmedabad neighborhood due to the variations in the land use, the occupation of the inhabitants of the activity is 24 hours. In contrast, both south and north Bovardeh neighborhoods are fully residential and due to this reason that residents' jobs are the same during the day only women and children are in the neighborhood and due to the absence of non-residential use and lacks of special overnight operation and neighborhood vitality is limited to a specific time period, it is also affecting the security of the

Table 12: how do you feel safe in the streets and public spaces? (Percent)

Neighborhood	Very low	Low	Somewhat	High	Very much
Ahmadabad		5	35	50	10
Amiri	4	5	25	58	8
North Bovardeh	15	19	50	13	3
South Bovardeh	13	24	47	11	5

Table 13: do you have relationship with your neighbors? (Percent)

Neighborhood	No	Yes
Amiri	32	68
Ahmedabad	25	75
South Bovardeh	63	37
North Bovardeh	55	45

neighborhood.

The impact of urban design guidelines

As the comparative study of place quality dimensions has explained 4 quarters of Amiri, Ahmedabad (high social diversity) and northern and southern Bovardeh (lower social diversity), urban design strategies and policies in this field will have an effective impact in promoting and maintaining the social mixture of Neighborhood residents. Some of these effects can be seen in below Table 17.

Table 14: visual elements of inhabitants' mental map

Ingredients		Ahmadabad	Amiri	Northern Bovardeh	Southern Bovardeh
Sign		oil Faculty / Amialmomenin Mosque / Island Jazire Passage / Abadan Museum / Mosalla	Cinema Naft / Shirin theater / Mehr Forum / Cinema Rex / Kadus passage / Central Market / Saderat Bank / Mehr Hospital / Parrots Square / Mehregan school / free zone passage / church / mosque / Kuwait passage / Customs Building	Ab Tower / Mosque of Bobo Alhavayej / oil Faculty	Gas station
Node	Performance	Karun Square / Moalem Park / Imam Ali Mosque / library Samen Alaeme / Beheshti hospital / prison / Bushehrian mosque / keyhan cinema / game palace / birds park / Mosalla / vegetable market / Revolution markets / Lin a primary / main lane fourth / Lin 7th / convenience store	Central Market / Kadus / tah Lenjyha road / Amiri road / Pahlavi street/ Old drapery Market / Shatt Edge / park / Shapur / park, Child	Oil School / Teachers' Home / Saadi markets / Ghazali School /	School
	Traffic	Karun Square / Crossroad Lane 1	Amiri four-way / four-way side		
Way		Lane A / Lane fourth / Lin seventh / Lin fifteen / wedding street	Amiri / Shapur / Pahlavi / Taleghani / Tahlenjiha / schools / Customs		
Edge		Arosyeh Street / teacher Park / Lane 15th	School / river	Lane 15th	
Area		Business road of Lin 1 / commercial zone fourth lines / area of field vegetables	Trade zone of tahlenjiha / Amiri commercial / Old Market of Fabric sales / Pahlavi business		

Table 15: Implementing designing strategies in other aspects of quality from the standpoint of processing systems with the status quo of the target neighborhoods

	Performance		Perceptual		Visual		Social			Time		
	Mixing activity	And multi-purpose public spaces	Most readability neighborhood	The symbols and elements	The variety in building styles	Variations in the details of construction	Accessibility for all	Meet the need of individuals Various	The possibility of social life	Diversity of ownership	Variation in housing prices	24-hour time
Amiri	Ω	Ω	Ω	Ω	Ω	β	Ω	Ω	Ω	Ω	β	Ω
Ahmadabad	Ω	Ω	β	β	Ω	α	Ω	β	β	Ω	Ω	β
Northern Bovardeh	α	β	α	β	α	β	β	α	β	α	Ω	α
Southern Bovardeh	α	β	α	α	α	β	β	α	β	α	α	α

Alpha Weak / ß average / Ω strong

Table 16: Implementing the design solutions in the morphology dimension from the standpoint of processing systems with the status quo of the target neighborhoods

	Land use		Building				Land Separation pattern			Network communication			
	Incorporation Register	Various measures of performance	Different: Quality of	Different: According life	Different: Floors	Different: Different types of building	The small size of the block	Regularly block	Variations in the size segregation	Public Access to the neighborhood	Suitable tissue penetration	There is a hierarchy of access	Structural integrity of roads and public spaces
Amiri	Ω	Ω	Ω	Ω	Ω	Ω	β	β	Ω	Ω	β	Ω	Ω
Ahmadabad	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	β	Ω	Ω	Ω	Ω
Northern Bovardeh	α	α	α	α	α	β	α	β	α	α	β	β	α
Southern Bovardeh	α	α	α	α	α	β	α	β	α	α	β	β	α

Alpha Weak / ß average / Ω strong

Table 17: strategies and its impact on social mixing

Urban design policy	The impact on social diversity
Preservation of buildings of different ages and life	Increasing the purchasing power and housing for people with low income The location possibility of land uses that was not economically possible but leads to the creation of job opportunities for low-income strata (e.g. retail outlets) Increasing the sense of space due to a memory intrudes
Different types of building design	The possibility of living with different inclinations of the residence Choice of housing for people with economic benefits
Land use Variety (mixed use, distribution scale, according to our schools and religious places)	Creating the diversity and vitality to the presence of a wide range of people at the time to be longer than days in space Meet the diverse needs of residents Availability of shops and local facilities for all people (children, the elderly, etc.) Due to the proximity to residential areas, reducing the need for car
The small size of the blocks	Increasing the permeability of the tissue The possibility of walking in the tissue and increase social interaction .Access to different parts of the public places, especially for the elderly and children
Variations in the size of segregation parts	The possibility of buying and living for all sections of society, The possibility of designing different types of construction
Emphasis on public transport system	Possibility of affordable shift for those with lower income levels Access to different parts of the city
Road network design implementation	Increased social interaction through the design and implementation of cohesion between the streets and public areas The currency exchange of ideas and opinions toward passages fields
Public open areas	The possibility of social interaction of residents Increase face-to-face connection Understanding others and showing no fear of strangers.

CONCLUSION

In support of social mixing, overcoming social exclusion and fragmentation, urban design with codes, procedures, policies and physical strategies have not only the solution but a key role. Providing different schema design in this area reflects the strength of influence on this issue. According to the conducted reviewing of this research can be concluded that the three morphological, functional and social have more impact on the promotion of greater social mixing and the three-dimensional space-time, visual and perceptual items by affection of this social mixing turned into many forms or in other words to be more effective, have been influenced by social mixing. In integrating the design solutions in three functional, morphological and social dimensions can propose three goals of the Communication, association, mixing and security in accordance with any specific policies (Figure 15). Proposed policies in the field of mixing conducted and the two issues of 1) creating a variety of housing options 2) combinations of services and facilities to support a variety of addressed needs. The first matter in an attempt to settle people with different lifestyles and economic revenues and the second issue is related to policies that can support different kinds of jobs associated by establishing a strong presence in a variety of activities from a range of people (Fi. 16).

Policies related to two issues: 1. Protection of the public transport system and 2. A combination of different public spaces, public and multi-purpose security policies. Preventing the formation of the spaces in urban areas is illustrated (Fig. 17).

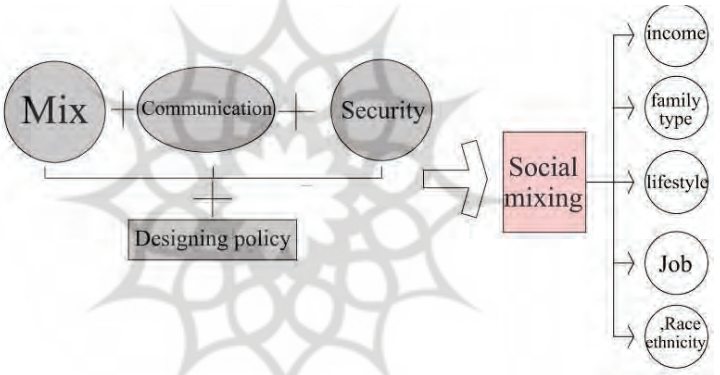

Fig. 15: The conceptual model of urban design targets in the creation of social mixing

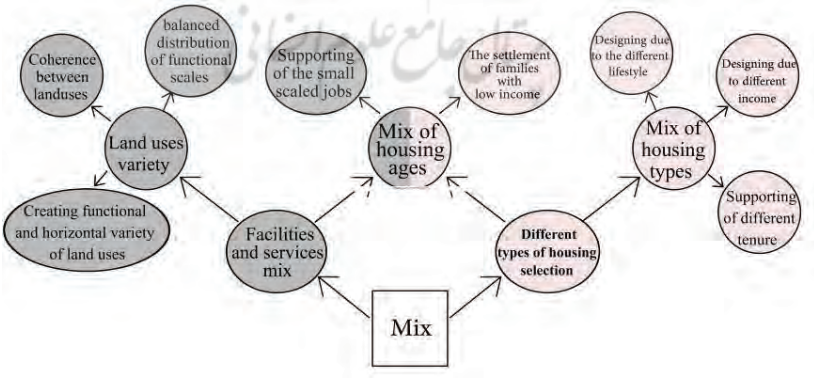

Fig. 16: Urban design strategies to improve quality in mixing elements of social mixing

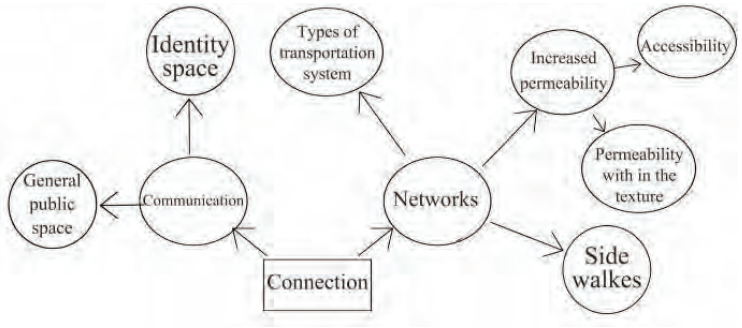

Fig. 17: Urban design strategies to improve the quality of the mixture in relation to social factors

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