

Socio-Physical Aspects of Urban Neighborhoods in Iranian Cities

With Special Reference to the City of Mashad

vorgelegt von

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ABSTRACT

From the third decade of the 20 century onward, Iranian cities have experienced a rapid transformation resulting from swift social, economic and political changes. These changes, stemming from many global factors such as industrial revolution, led to a new lifestyle in Iranian society and also in the cities and their residential areas. A lack of proper urban policy and management, as well as inadequate attention to the real societal and cultural needs of Iranian inhabitants has resulted in the emergence of many problems in Iranian cities and their residential neighborhoods.

This thesis –with an inquiry into the socio-physical aspects of the residential areas in contemporary Iran with a particular reference to the City of Mashad – tries to understand the physical aspects of residential areas, activities of residents in outdoor neighborhood spaces, and also the effect of these physical characteristics on the social behavior, activities, and sense of community of the inhabitants.

A *multi-method* approach (both quantitative and qualitative methods) is adopted to examine the objectives of this research. Also, in order to understand the influence of the physical characteristics of residential neighborhoods on social attributes of their inhabitants, a *quasi-experimental method* is employed. In this research, seven neighborhoods were selected as study areas and seven hundred households were interviewed using a multi-optional questionnaire. Additionally, observation by note and photo-taking was employed for data gathering during the field work. While quantitative data has been analyzed by statistical methods and by SPSS software, qualitative data has been analyzed using data reduction, and data display.

The findings indicate that a lack of *affordances*¹ and proper spaces in the most common urban pattern of all of the three income groups of these residential areas have led to reducing the creation and promotion of some or all of the examined social attributes like social connections, positive interactions, fulfillment of social needs, and sense of community. Also, the results demonstrate that the spatial and physical characteristics of the common urban pattern of current residential areas in Mashad are not able to form or integrate the social behavior of their residents. This inability is demonstrated through some different competitive and conflicting behavior in middle and low incomes neighborhoods and through accommodative behavior in high income neighborhoods.

¹ The term “*affordances*” coined by Gibson (1979) refers to the physical properties of the configuration of an object or setting that enables it to be used by some activity. The affordances of a built environment are what it offers in accordance with the characteristics of its configuration (P. 129).

Zusammenfassung auf Deutsch

Titel der Dissertation:

Soziologisch-physikalische Aspekte städtischer Wohnviertel in iranischen Städten:

Unter besonderer Berücksichtigung der Stadt Mashad

Seit Beginn der 30-er Jahre des 20. Jahrhunderts vollzog sich in iranischen Großstädten eine rapide Umwandlung, bedingt durch die schnell voranschreitenden sozialen, ökonomischen und politischen Veränderungen. Dieser Wandel, der auf vielen globalen Faktoren beruhte, wie zum Beispiel der industriellen Revolution, führte sowohl in der iranischen Gesellschaft als auch in den Städten und ihren Wohnvierteln zu einem neuen Lebensstil. Infolge des Fehlens einer effektiven Stadtplanung und Gestaltung sowie der mangelnden Beachtung der echten sozialen und kulturellen Bedürfnisse der iranischen Bevölkerung, tauchten in den Wohngebieten iranischer Städte viele Probleme auf.

Diese Dissertation ist bemüht – mit Hilfe der Untersuchung der soziologisch-physikalischen Gegebenheiten der Wohngebiete im Iran der Gegenwart unter besonderer Berücksichtigung der Situation in der Stadt Mashad – sowohl die Bedeutung der Strukturen eines Wohngebietes zu verstehen als auch die Aktivitäten der Bewohner in den dazugehörigen Freiflächen ebenso wie den Einfluss, den die Beschaffenheit der Strukturen auf das soziale Verhalten, die Aktivitäten und das Gemeinschaftsgefühl der Bewohner ausübt.

Zur Untersuchung des Gegenstandes dieser wissenschaftlichen Arbeit wurden Multi-Methoden-Ansatz (sowohl in qualitativer als auch in quantitativer Hinsicht) angewendet. Um den Einfluss zu verstehen, den die äußere Struktur eines Wohngebietes auf die sozialen Verhaltensweisen seiner Bewohner ausübt, wurde auch eine quasi-experimentelle Methode herangezogen. Im Rahmen dieser Arbeit wurden sieben Wohnviertel als Studiengebiete ausgewählt und 700 Haushalte mittels eines multi-optionalen Fragebogens befragt. Außerdem wurden während der Feldstudie durch direkte Beobachtung, die schriftlich und durch Fotografien dokumentiert wurde, Daten gewonnen. Die quantitativen Daten wurden mit Hilfe statistischer Methoden und SPSS-Software analysiert, während die qualitativen Daten durch Datenreduktion und Datendarstellung ausgewertet wurden.

Die gefundenen Ergebnisse zeigen, dass der Mangel an „Nutzungsmöglichkeiten“ (affordances²) und geeignetem Lebensraum, wie er in den meisten städtischen Mustern von allen drei Einkommensgruppen dieser Wohngebiete vorherrscht, dazu geführt hat, die Entstehung und Förderung einiger oder aller untersuchten Eigenschaften, wie soziale Kontakte, positiver Austausch, Befriedigung sozialer Bedürfnisse und Gemeinschaftsgefühl zu reduzieren. Die Untersuchungen haben auch ergeben, dass die vorherrschenden räumlichen und strukturellen Eigenheiten in den zur Zeit bestehenden Wohngebieten in Mashad nicht geeignet sind, soziales Verhalten der Bewohner zu erzeugen oder es zu integrieren. Das wird sichtbar an den unterschiedlichsten Konkurrenz- und Konfliktverhaltensweisen in den Wohnvierteln der mittleren und unteren Einkommensschichten sowie dem angepassten Verhalten in den Wohnvierteln der Bewohner mit hohem Einkommen.

² Der Begriff „affordances“ den Gibson (1979) geprägt hat, bezieht sich auf diejenigen physikalischen Eigenschaften der Bestandteile eines Objekts oder einer Einrichtung, die ihm oder ihr die Eignung verleihen, zu Aktivitäten benutzt zu werden. Die „affordances“ einer gestalteten Umwelt sind diejenigen Möglichkeiten, die sich bei ihrer zweckbestimmten Benutzung anbieten (S. 129).

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Chapter 1: Introduction

Since the 1930s, a new approach towards the formation and organization of the elements and components of Iranian cities has been taken. Instigated by the industrial revolution, mechanization, motorization, and modernization, these changes have led to transformations in the social, economic and political aspects of the cities. As such, attempts have been made to prepare and adapt Iranian cities to the new world. In this manner, new socio-economic and spatial relationships have been employed with the intention of bringing modernization to the inhabitants (Banani 1961: 121; Madanipour 2003: 137; Hunter 2005:263).

At this time, in all Iranian cities, the traditional urban texture was cut through by two cross-shaped streets³ (Brunn and Williams 1993: 346; Mazumdar 2000: 317-322) to mobilize vehicular transport and develop the city based on the network of streets. Accordingly, a new “*extroverted*” texture has emerged, which is totally different to the “*introverted*” system of traditional Iranian cities.⁴

From the 1960s, a substantial increase in the growth rate of urban residents has led to intensive urban development, especially in large cities. Based on the most common pattern of the simple street-grid and with no regard to open spaces and social centers, in some cases even the most basic housing needs had difficulties being fulfilled. Lack of proper urban policies and management along with inadequate attention to the real societal and cultural needs of Iranian inhabitants have brought about the emergence of many socio-physical problems in the cities⁵ (Habibi 1996: 185).

The growth of urban population with a lack of proper urban policy and planning continued on a larger scale after the Islamic revolution of 1979, which led to a boom in inadequate and inappropriate development of the cities. This situation has exacerbated the problems of the cities and led to the emergence of a “*city-crisis*” in the urban society of Iran (Habibi 1996: 197-199).

The master plans and detailed plans formulated in Iran after 1965 have not succeeded because of their unrealistic and static character and also a lack of understanding of the real needs of the residents (Mozaiani 1994: 222).

Also, during the construction of the residential areas as well as other urban areas, socio-cultural issues and the behavioral interactions of residents seem to have been ignored. The lack of proper services, an appropriate street network hierarchy and public transportation services, as well as inadequate open space and the growth of class distinctions are some factors whose study and analysis seem crucial to the rehabilitation and reconstruction of residential areas.

The main purpose of this research is to study the influence of the physical aspects of residential areas on the social attributes and attitudes of the residents. These issues will be propounded in the following section.

³ These are taken from Haussmann’s patterns in 19th century of Paris. See chapter 2 for more information.

⁴ In this research, the terms “introverted” and “extroverted” texture refer to morphological aspects of urban architecture. Introverted texture refers to the old structure of Iranian cities, in which the main building façades face inward, towards the yards. In contrast, the extroverted texture refers to the building façades facing outward, towards the streets.

⁵ This issue has been identified as a “*city-problem*” among Iranian scholars (Habibi 1996: 185).

1.1 Problem Statement

A glance at Iranian cities and into the various aspects of public life reveals to us that contemporary cities are facing fundamental problems in the formation and integration of residential areas. The cities seem to encounter many difficulties in providing and arranging spatial patterns for residential areas with regard to the needs and adaption to the behavioral patterns of inhabitants. This issue is so crucial that many experts and researchers on urban issues and architecture in Iran have labeled the new cities as “cities of no foundation” and “cities of no space” (Hashemi 1996: 1).

With the change of lifestyles in contemporary Iran after the 1930s and especially in the past half-century, the concepts and functions of home and residence have changed in Iran (Haeri 1994: 60-61). This change comprises most of the social and economic aspects and consequently the organization and construction of the residential areas.

On the other hand, the effects of worldwide factors and especially the industrial revolution, modernist approaches, and new economic, social, and cultural aspects are the main reasons for the changes to urban life which have led to the expansion of Iranian cities and consequently residential areas.⁶

After 1960s, and especially after the 1979 revolution, economic and social urban policies resulted in urban living having a greater appeal, which consequently led to a rapid and haphazard development of the cities. Most of this development was accompanied by straight grid streets and converting agricultural fields to residential areas⁷. This development not only suffered from inadequacies in terms of planning but also from lack of implementation and control. Lack of social centers and open spaces in the organization of residential neighborhoods, in addition to injustice in the distribution of urban services and conveniences, and class distinction⁸ are some of these inadequacies (Farivar-Sadr 1995: 600; Etemad 1990: 7).

Social distinctions among residential areas are usually based on the concept of poor-rich and north-south divisions. In these distinctions, *poor neighborhoods* are associated with unorganized, disorderly, and unsanitary spaces with very small houses as well as a severe lack of urban services. On the other hand, *rich neighborhoods* can be recognized by expensive, luxury-filled houses, and status symbols (Hashemi 1996:1). In between, the middle-income residential areas are facing many problems in terms of urban services and conveniences.

Current factors, such as the inclination to lead an urban life, an increasing young population, the housing shortage and the need for regeneration of the existing neighborhoods, have intensified the significance of the study and investigation of residential areas. Other motivating factors for research in this field are the extreme research deficit and the lack of awareness about the new urban lifestyle of contemporary Iran, and the interrelation of social, economic, political factors with physical factors.

⁶ This will be specified in detail in the following chapter.

⁷ Absence of economic power as well as lack of profit on production and industry brought about the land speculation phenomenon in cities.

⁸ See chapter 2, for more familiarity to different problems and effects on the Iranian cities.

In this research, by focusing on the socio-physical aspects of Iranian residential areas, with special reference to the city of Mashad, an attempt will be made to understand physical features and social attributes of residential areas in the three high, middle, and low income levels. The scope of this research will be clarified in the following paragraph.

1.2 Scope of the Study

This research is *an inquiry into the socio-physical aspects of residential neighborhoods* in Iran with special reference to the city of Mashad. In this regard, this study deals with physical characteristics of outdoor spaces and the social aspects of residential areas. Also, in examining the relationship between the physical aspects and the social sphere of residential areas, in this dissertation, questions are raised concerning the effect of physical characteristics on social aspects of neighborhoods.

In this study, the physical attributes include the system of organization and construction of outdoor spaces in residential areas and their different features (see Appendix A). At the same time, to present a fuller picture of the residential situation, different facilities and spaces involved in fulfilling the needs of inhabitants will be examined.

Additionally, the scope of social aspects incorporates the social behavior and activities of residents in exterior spaces of residential areas, the social interactions of neighbors, the fulfillment of concepts such as privacy and crowding, and also the sense of community among residents (see Appendix A).

1.3 Motivations and Objectives

As mentioned above, the most significant motivations for undertaking this study are:

- The change of lifestyles in contemporary Iranian cities and its influence on the construction of socio-physical aspect of city and residential areas;
- The lack of scientific research on the new lifestyles of inhabitants in their residential areas;
- The intensive growth of urban population and the need for new residential areas;
- The existence of social, physical and cultural problems in the existing residential areas and the need for renovation and rehabilitation of these parts.

Understanding the physical characteristics and the social aspects of residential areas as well as the influence of physical features on social aspects in these areas are the main aims of this research. Therefore, the objectives of this study can be highlighted as follows:

- Investigating the physical characteristics and features of the selected neighborhoods as case study areas;
- Improving the knowledge about the lifestyle of residents and their social behavior/activities within the sphere of these neighborhoods;
- Investigating the *psychological sense of community*⁹ of inhabitants as a factor of social attributes in these neighborhood; and
- Understanding the effect of physical aspects of these neighborhoods on social behavior and sense of community of their inhabitants.

⁹ See definition of this term in chapter 3

1.4 Research Questions

1. What are the physical features and principles of the three (high, middle, and low) income residential areas in Mashad?
2. What is the space-related social behavior of inhabitants in these areas?
3. How is the sense of community in these residential areas?
4. What is the effect of physical aspects on social behavior and activities of the residents of these areas?
5. What is the effect of physical aspects on sense of community in these residential areas?

1.5 The Organization of the Chapters

The second chapter deals with the processes of change of Iranian cities and their residential areas –with an overview on the situation in Mashad. The processes of change are classified into four parts according to Iranian history: historical development (up to 1930), first and second Pahlavi period, and after the Islamic revolution. In every part an attempt is made to present the overall conditions of society, economy, and policy regarding urban issues.

The third chapter is a literature review. In this chapter theories about community, neighborhood, quality of fulfillment of needs, as well as relevant theories about humans' behavior in the built environment are discussed. Moreover, the conceptual framework of the study will be presented at the end of this chapter.

The fourth chapter comprises the method and approach of the study, and adopted techniques in selection of study areas, data collection, system of data analyzing, and validity and reliability of the data and data collection instruments.

Chapters five and six present the results, discussion and conclusion. In chapter five the findings of the study are introduced. Discussion of the findings, concluding comments, planning and design implications, and future research recommendations will be presented in the final chapter.

Chapter 2:

The Process of Change in Iranian Cities and Their Residential Areas

The main goal of this chapter is to provide an overview of the situation of residential areas in Iranian cities, with a special reference to Mashad. Thus, the salient social, economic, cultural factors and their effects on physical aspects of cities and their residential areas will be presented.

Since this study focuses on the conditions of residential areas in the contemporary period and the new changes in lifestyle and physical aspects of the Iranian cities, the processes of change will be described in four parts: historical development (up to 1930), the first Pahlavi, the second Pahlavi, and post-Islamic revolution period.

2.1 Historical Development (Until 1930)

The history of the old parts of Iranian cities belongs to the historical period from the 7th century up to 1930. These historical areas have special organizational features and trends that belong to the shaping of cities in the Islamic Period. These historical developments were interrupted by the actions of the first Pahlavi and the entrance of modernization and new ways of living.¹⁰

There are many issues involved in the process of the formation of the city in this period. However, such issues as the limitation of this study, the different trends and principles¹¹ in the organization of this part of the city, and also the very small geographical area that this area represents in comparison to the current city as a whole, resulted in this area not being selected for case study. Therefore, in order to become more familiar with the processes of change in Iranian cities, only a brief explanation about historical development of the city has been offered below.

The official governing system of this period was based on an aristocracy of bureaucrats forming an organized government, with a king at the head as a “shadow” of god on earth (Savory 2007: 2). The economic situation of this time was based on trade and commerce. The official religion of this period was Islam. In the Safavid period, Shiite sect had been propagated and the Islamic concepts were theorized based on this faith in Iran (Daniel et al. 2006: 47).

The main urban pattern was established during the early of Islamic period and continued and improved its principles and concepts through the passage of history – up to 1930. This pattern consisted of four elements (Figure 1): (1) the palace as the place of government; (2) the Jami mosque as the place of religious and social public life; (3) the bazaar as the place of trades; (4) the quarters as the place of people (Falamaki 1991:128-138).

The bazaar was recognized as the defining structure of the city and was the major public thoroughfare. The quarters surrounded the bazaar. The Jami mosque was connected with the bazaar as the social, cultural, and political center for the public. Also, the palace was usually erected in a square with connections to the bazaar (Habibi 1996: 42-49).

The city grew very slowly and gradually with an organic texture. Additionally, a primary

¹⁰ See second Pahlavi Period.

¹¹ Some of these trends will be presented in the following paragraph.

physical principle of this city was the “inward” orientation of its architecture (Gulick 1983: 107; Tavasoli 1990: 26-30), in such a way that every physical structure except the bazaar turned inward.

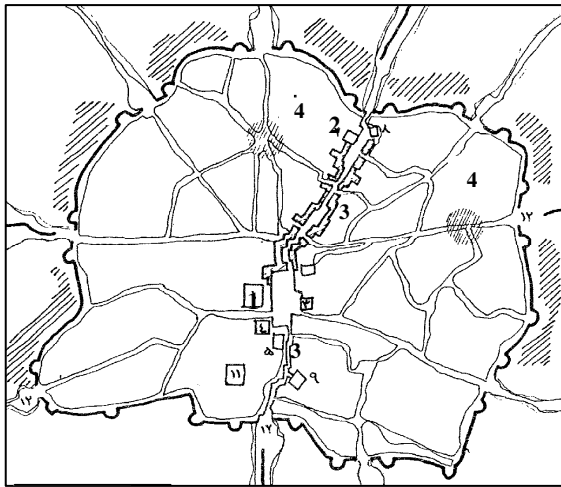


Figure 1: The main pattern of Iranian cities in the Islamic period. (1) Palace, (2) Jami, (3) Bazaar, (4) Traditional Quarters

Source: Habibi 1996: 105

As mentioned, the residential areas formed around the bazaar in some quarters (Figure 2). Every quarter generally had a center as a public space and a place for meeting everyday needs (Hashemzade Homauni 1994: 42). This center usually comprised spaces such as different stores, mosque, hammam, and takieh or hosseinieh (a special religious place in Iran). The configurations of houses were inward-oriented; and they connected to the alleys only with entrances.



Figure 2: Mashad in 1858. (1) Bazaar, (2) Center of quarters, (3) Main thoroughfares, (4) The holy shrine of Imam Reza, (5) Palace

Source: According to Jarpnof, Rezvani 2004:37

The divisions and social distinctions of quarters were based on ethnicity, professions, and religious orientations; in such a way that there was a non-existence of social class distinctions in the quarters and the rich and poor lived together. On the other hand, every quarter usually had its traditions and conducted most of its dealings with villages and tribes with which it shared faith, ethnicity, etc. Therefore, in some part of this period, quarters had boundaries and walls around themselves (Habibi 1996: 48).

The overall principles and features shaping Mashad and its residential areas were similar to the other cities of Iran in this period. Additionally, the existence of the holy shrine of Imam Reza¹² was the most important instigating factor in the formation of this city. Mashad's roots are in Noghan and Sanabad villages which were built around the holy shrine of Imam Reza (Khazeni 1966: 17).

2.2 The Process of Change in the First Pahlavi Period (1930- 1941)

This time has been described as the period of contradictions (Hunter 1990: 16). Alterations in concepts of society, lifestyle, government, military forces and city were among the important changes that occurred during this time. The government, changing the old relations and trends, tried to drive the society toward modernization and innovation based on a framework of outside influences, drawing on ideas from abroad, i.e. western countries (Farivar-Sadr 1995: 596).

The Pahlavi government started to change the historical organization of production through an attempt to borrow ideas from the industrial revolution, which was accompanied by social division of labor. In fact, however, the economy of this era was defined by the failure to establish an effective production structure, government income from sale of petroleum not production, and a very gradual transformation into a consumer society (Habibi 1996: 145-154).

What became of the cities in this period was influenced by ideas from outside –the 19th century industrial city. The physical changes inside the cities manifested themselves through new streets which intersected (“cross streets”) and cut through the old urban fabric in order to create a new guise for the city (Brunn and Williams 1993: 346) (Figure 3). The idea and pattern of these streets had been adopted from Haussmann actions in 19th century Paris (Mohammadi 1995: 622-625).



Figure 3: New cross-shaped streets cut through the old textures of the cities.

Left: Shahrood.

Right: Yazd.

Source: Asar 1995: 125

These new streets, lined with outward-oriented buildings, caused a disintegration of the past principles and structure of the city. The old Bazaar's pivotal role as a main structure of the city was taken over by the street. Businesses were established along the new streets –converting the “trade place” to “trade space”; and the street became the agent of the city development and the dominant element (Habibi 1996: 159).

The growth of the city in this period was slow; however, this development, due to the attraction of the city as a result of the trade and capital concentration (particularly in the big cities), was much faster than in the past. The first layer of the new texture –today known as

¹² Imam Reza was the eighth Imam of Shiite sect.

the semi-old texture– of the contemporary city was shaped in this time. This texture endured the lack of services, conveniences, and social distinctions (Haeri 1989: 20). Despite considerable contradictions between the new part and the old part of the city, there was still a particular coherence between the new and old textures (Tavasoli 1990: 21).

The main new elements of the new city pattern were (1) the street that was the symbol of new pattern of life with new façades and new architectures (Figure 4), (2) the square, the main function of which was to aid the movement of vehicles, and (3) the official and services buildings expressed in monumental architectural styles that indicated the government power and new style of life (Habibi 1996:155-166). Most of these buildings were made by German and French architects– e.g. Alfred Fisher from Germany and André Godard from France.

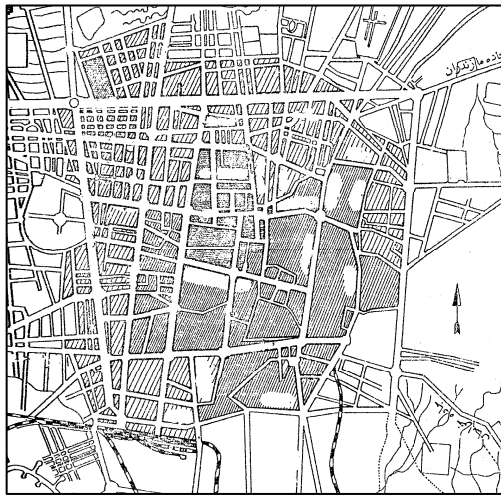


Figure 4: Tehran in the first Pahlavi period. Streets became the symbol of new life and the agent of development of the city.

Source: Habibi 1996: 176

In this period the loss of the old social concepts of the quarter in residential areas began. The formation of the social distinctions and the emergence of the concept of rich and poor neighborhoods changed neighborly relationships.

On the other hand, the physical aspect of residential areas was changed because of the new street pattern and developments. Inside the city, the formation of the cross streets led to the destruction of some neighborhoods. Moreover, the new internal constructions were shaped according to the extroverted orientation –as a physical feature.

In the new development of the city outside the old part which was shaped with grid texture, the street replaced the neighborhood center (Hashemzadeh Homauni 1994: 43). From this time on, the new pattern of grid streets with row housing and narrow lots became common. Meanwhile, the houses in this part were built with extroverted orientation and the streets were prepared for vehicular movement. In addition, the absence of open and public spaces and also a shortage of services and conveniences in neighborhoods became one of the biggest problems in residential neighborhoods during this period (Farivar-Sadr 1995: 600).

Mashad was also changed in this way at the beginning of the contemporary period (Figure 5). Some of the most important changes of the city in this period were the construction of two cross streets inside the city with no adaptation to the old texture, and also new development outside the old part with wider streets in comparison with old textures to adjust to vehicular movement (Mehrazan 1985: 121).

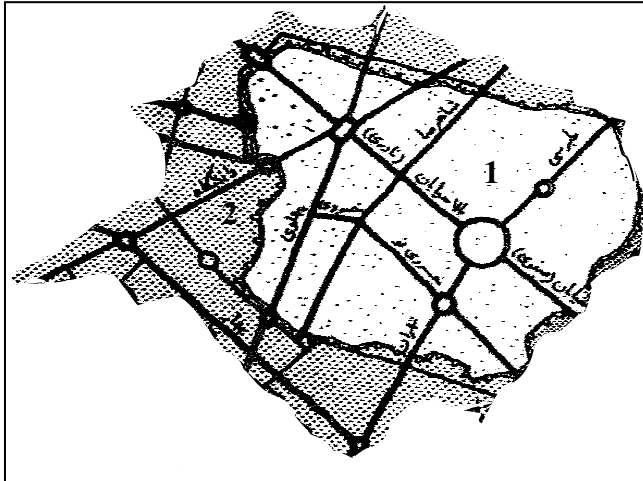


Figure 5: Mashad in the first Pahlavi. (1) Old texture, (2) New texture in this period (semi-old texture)

Source: Khazeni 1971: 87

Also, in Mashad's residential areas two kinds of textures were shaped during this time: grid texture, and the texture between old texture and grid (Ardam 1989: 97). The areas of lots usually differed according to the income of the neighborhoods. The land division¹³ in neighborhoods followed the new pattern of the Iranian city and was based on row housing built on narrow lots in accordance with the grid street pattern, usually without any open spaces. Every property consists of a building constructed in the north of the lot and a yard with closed boundaries. The vertical density of houses was low –usually with one or two floors.

2.3 The Process of Change in the Second Pahlavi Period (1941- 1979)

In this period because of some global issues such as World War II and also because of some policies and events (described in the following paragraphs), the processes of change in Iranian cities have been categorized into three periods: 1941-1953, 1953-1966, and 1966-1979.

The Process of Change from 1941 to 1953

The most important event that impacted the situation of Iranian society in this period was the World War II and the problems that followed it (Keddie 2006: 105). While Iran announced its impartiality, it was occupied by the allies' military forces. Other important issues that happened in this period were the nationalization of the oil industry in Iran and the coup-d'état in 1953. These events slowed down the speed of changes; Therefore, any changes in this period, in society, economy, and in cities were in line with those in the first Pahlavi period. The trade, migration to the city, and city development had slowed down. Additionally, the residential areas were shaped according to the pattern of the first Pahlavi period (Habibi 1996:173-178).

The physical changes in Mashad and its residential areas like other cities of Iran were in line with those of the first Pahlavi period (Figure 6). The important events in this time were the establishment of two main utilities in the city and movement of the direction of city development toward them: main railway station in the north of the city, and the airport in the east of the city (Ardam 1989: 107).

¹³ Distribution of lots into building plots

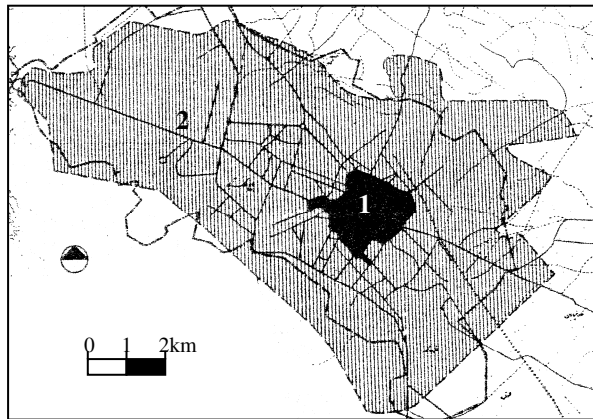


Figure 6: (1) Mashad in 1953. (2) Mashad in 2000.

Source: Gammami 1995: 69

The Process of Change from 1953 to 1966

The failures in the policies of the government of the second Pahlavi period in the production organization led to the emergence of a single commodity economy – oil was exchanged with consumer production. The new society was planned for modernist appearance but in fact changed to consumer society with further widening of the gaps in class differences (Keddie 2006: 137-138).

The consequences of these conditions in cities of this period were the beginning of the rapid growth, the formation of the second city layer –New Texture– suffering such problems as lack of facilities and services, rapid growth, improper use of land area, and social and economic discrimination. Additionally, this new layer was not in coordination or coherence with the *semi-old* texture¹⁴ and the historical part. Therefore, this time has been known as the beginning of the disruption of the unity in the city (Haeri 1993: 31). Meanwhile, urban planning attempted to manage city problems in this period, but it was irrational and unrealistic because of a lack of understanding of the real needs of the residents. Hence, the final result of different issues at the end of this period turned the city into a problem (Habibi 1996: 185).

Residential areas in this time were shaped with low-rise buildings and wider streets with undue attention to movements of automobiles. These areas usually have a shortage of open spaces, appropriate services and also neighborhood conveniences (Etemad 1990: 7). As mentioned before, the developmental pattern was based on grid streets and division of land with tight lots along the streets. These streets usually did not have very clear and exact hierarchy from the city to the neighborhood scale. Additionally, with increasing social distinctions in this period, “North” and “South” of the city entered the Iranian public’s discourse and became synonymous with the rich and poor neighborhoods (Mirsepassi 2000: 74).¹⁵

During this period, Mashad and its residential areas began to spread almost in every direction with rapid growth. This issue brought about the new layer in Mashad like the other cities in this time (Gammami 1995: 68-74). The features of this layer were like those in the other cities that were described above (Figure 7).

¹⁴ See the first Pahlavi period.

¹⁵ The Iranian public began referring to rich urban neighborhoods as “north” and poor neighborhoods as “south” regardless of the real geographic location. For instance in Mashad, the poor neighborhoods are located in the east and the rich neighborhoods are located in the south-west.

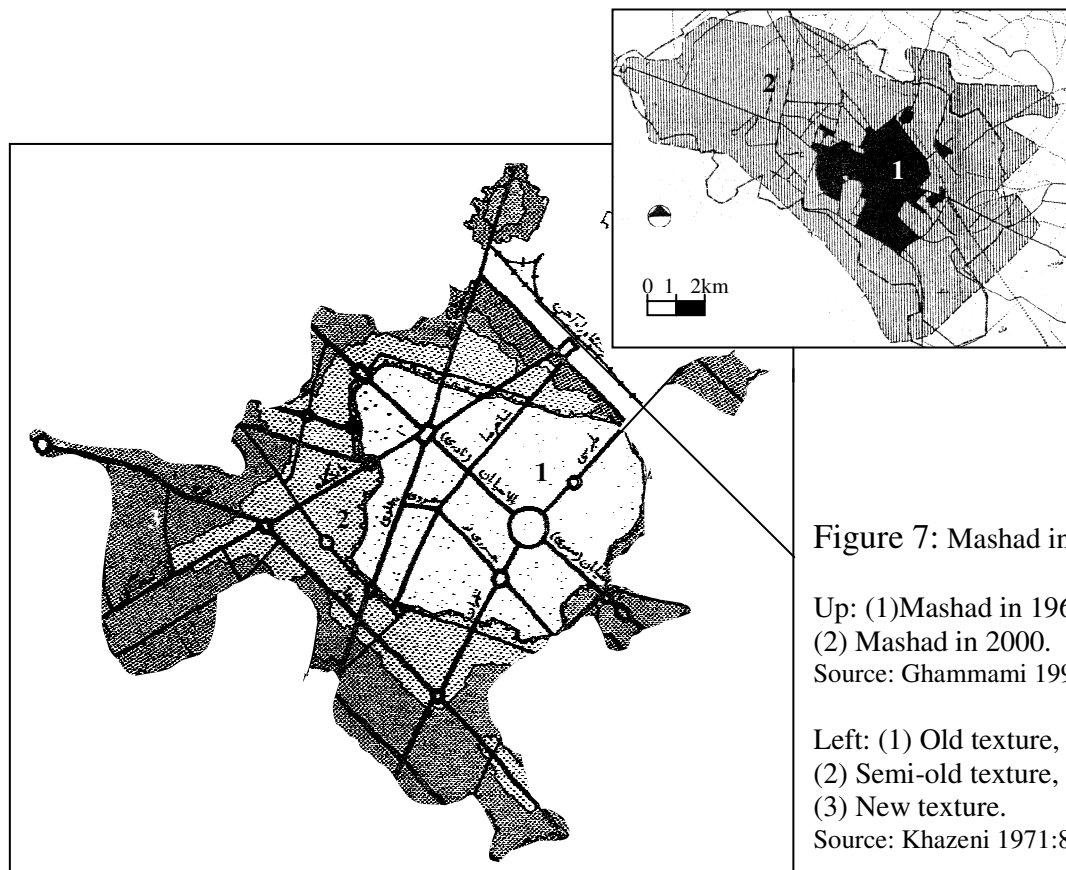


Figure 7: Mashad in 1966.

Up: (1) Mashad in 1966,
(2) Mashad in 2000.

Source: Ghammami 1995: 69

Left: (1) Old texture,
(2) Semi-old texture,
(3) New texture.

Source: Khazeni 1971:87

The Process of Change from 1966 to 1979

During this period, the production structure and economic conditions became increasingly ruined. “*Unproductive consumption*”¹⁶ became the main feature of the economy and society. The allocation of more services to big cities, and the deprivation in villages and small towns brought about the cities’ appeal. These issues led to further migration of the rural and town population to the cities (Bayat 2007: 291). At the same time, the lack of facilities, possibilities, and reliability for investment in industry as well as the weak constitution of the economy brought about the land speculation phenomenon in cities, i.e. due to the lack of profit in the production sector, most of the deposits moved to this part. Consequently, this led to an increase in the price of land and housing in the cities (Habibi 1996: 187-192).

The above-mentioned factors led to the formation of informal settlements in the suburbs of the big cities. The consequence of this phenomenon was the emergence of the third new urban layer – *Suburb Texture*. This texture like other city textures suffered from problems such as lack of facilities and services, improper land use, shortage of open and public spaces, inappropriate coherence with other parts, etc (Haeri 1989: 25-32).

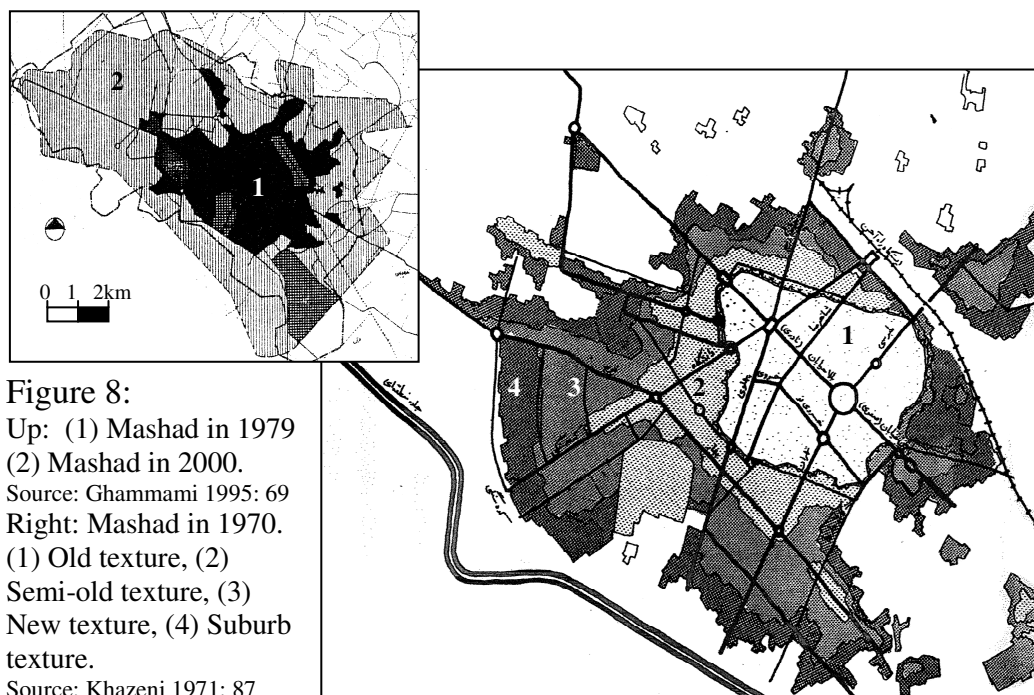
Meanwhile, in this period, due to a lack of attention and suitable maintenance of the old textures, these parts of the cities got more damaged. Comprehensive plans were supplied and executed for cities in this time, but most of these plans were unrealistic, fragile, and static. Additionally, the absence of specialist performers and sufficient expertise made these plans

¹⁶ This term is used in Iranian society because of the existence of an unproductive economy: the production of oil as an almost single commodity (in fact as a consumption of the public resources) and import of abundant foreign consumption goods.

themselves very problematic (Mozaiani 1994: 222). These issues cumulatively brought about the emergence of the city-crisis concept (Habibi 1996: 197-199).

The composition of residential areas in *Suburb Texture* formed with grid texture. This texture like the *New Texture* suffered from lack of open spaces, services and conveniences, and suitable access hierarchy.

Mashad and its physical changes followed the new changes in other cities (Figure 8). The comprehensive plan of Mashad was approved as the first urban plan of Mashad in 1971. According to this plan, the main direction of development was south and west. Rapid urban growth in this period led to the annexation of some villages to Mashad (Farnahad 2003: 123). As a consequence, the third new urban layer –*Suburb Texture*– was formed in this period. Mashad's residential areas like those in the other cities suffered from lack of services, facilities, open spaces, and extreme class distinctions (Ardam 1989: 111). In this period the first residential complex was constructed with 600 units in 4 and 5 floor blocks.



2.4 The Process of Change after the Islamic Revolution (since 1979)

The Islamic Republic of Iran was established on the basis of a popular revolution for attaining independence, freedom, and religious democracy. This revolution attempted to find meaning by employing Islamic culture and tenets, and tried to gain independence by cutting off outside influences and by inward orientation (Esposito 1996: 52). In fact, it was an idealistic search for a good life under the auspices of Islam.

The 8-year war and economic sanctions isolated Iran in this period. On the other hand, the improper postwar economic policies have led to the non-formation of a solid economic structure. The economy has become more dependent on oil income, and *unproductive consumption* has intensified because of a single commodity economy. The consequence of these issues has been the emergence of a more caste-based system and extreme class differences in society (Izadi 2000:14).

The revolution, which encompassed a search for an Iranian urban identity, did not result in the accomplishment of its ideals in the city. The urban policies evidenced by many plans such as master plans, detailed plans, rehabilitation and renovation plans (for the historical textures) have not succeeded to solve even some of the basic problems of the cities. Due to nonparticipation of people, ignoring residents in these plans, lack of specialists for conducting the plans, shortage of budget, unrealistic and sometimes idealistic planning, etc, most of these plans have not been implemented (Ghiasi 1994 :21; Mozaiani 1994: 221-225; Ghammami 1992: 24 & 1997: 26). Therefore, the city problems have continued to develop from bad to worse in the last period and sometimes in contradiction with the plans.

Additionally, two other main reasons – (1) extreme population growth¹⁷ (especially in the first two decades after the revolution), and (2) the large-scale migration of rural and small-town residents to big cities (because of deprivation, lack of facilities and jobs, and also the attraction of the big cities) – have brought about an excessive growth in the development of cities –especially larger cities¹⁸ (Haeri 1998: 27-32).

This excessive growth has been mostly shaped by informal settlements and led to the formation of the fourth new layer of the contemporary city, the “unconnected layer”. This new texture has developed only to solve the housing problem in the most basic manner—through the provision of shelter. This texture, like the other new layers of Iranian cities, has serious problems providing appropriate services, facilities, and also open and public spaces (Haeri 1993: 33). The overall pattern of this new city development was an extension of grid streets and division of land along them with row housing on narrow plots.

Further, with the extension of the bad economic situation and the absence of a strong industry and production organization, most investments have shifted to land trading and land speculation (Parsa 1989: 75-76). Hence, the price of land and housing has increased excessively. This issue has encouraged people to construct buildings with higher density. In addition, to supplement their budget, the municipalities have erratically granted permission to develop plots at higher densities than stated in the detailed plans.¹⁹ This phenomenon has brought about the chaos in the sky line and townscape. Moreover, the problems with accessibility and traffic along with lack of appropriate services and conveniences are the other consequences of this phenomenon that big Iranian cities have faced. Additionally, the absence of open spaces and an increasing interest in making higher density buildings has led to the formation of a dense, qualitatively poor spatial structure in most parts of the cities (Figure 9).

The speed of city growth arising from immigration and population growth has attached most of the new contemporary layers. On the other hand, the low life-cycle of buildings in Iran²⁰ with a lack of prominent style of architecture and improper city plans in the current period has created a disorderly townscape (see figure 9). At the same time, the historical part of the city has become increasingly ruined due to new constructions and a lack of appropriate planning. (Tavassoli 1993: 20-22).

¹⁷ According to census of 2006 in Iran, the current population of Iran is about 70 million. This rate in comparison with the population of Iran at the end of second Pahlavi has doubled (statistical center of Iran 2007: n.p.).

¹⁸ Urban population of Iran in 1956 was 6.5 M. which was 1/3 of the total population. This urban population in 2006 reached 48 M. which was more than 68% of the total population (Statistical Center of Iran: 2007: n.p.).

¹⁹ This phenomenon is recognized as “*selling height density*” by people.

²⁰ The life-cycle of buildings in Iran is about 20 years. This criterion in residential areas is less than this (statistical center of Iran 2007: n.p.).



Figure 9: The dense, qualitatively poor spatial structure of the city of Tehran, today

Source: Tavasooli 1993: 22

Moreover, as in the previous period, the grid pattern has been responsible for shaping the texture of residential areas to a large extent (Figure 10). Some of the other common features of these areas include the undue significance given to vehicular movement, lack of open spaces, row housing on narrow plots, shortage of appropriate services and conveniences (Farivar-Sadr 1995: 600). The physical characteristics of the residential areas in Iran (with special reference to the City of Mashad) and the effect of them on the space-related social behavior of residents in these places are the focal points for investigation in this research.



Figure 10: The most common pattern of residential areas (grid pattern) in the contemporary period of Iran (Azad-Shahr district, Mashad).

Source: Iranian Survey Organization 2005.

Mashad and its residential areas have followed the above-mentioned trends in this period. Similar to other Iranian cities, Mashad has experienced very fast growth in this period –the city area has more than doubled in comparison to that at the beginning of the Islamic revolution (Figure 8&11) and the population has increased from 0.7 million (Zist-Kavosh 2002: n.p.) in 1979 to 2.8 million in 2006 (Statistical Center of Iran 2007: n.p.).

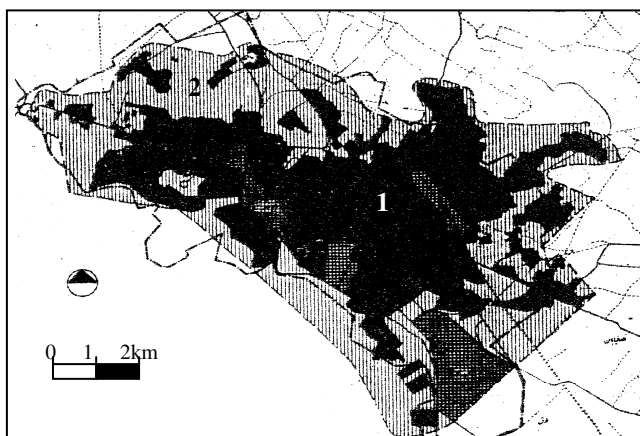


Figure 11: (1) Mashad in 1986, (2) Mashad in 2000.

Source: Ghammami 1995: 69

Chapter 3: Review of Literature and Relevant Theories

In this chapter some theories and background research, which are salient in the field of the study of residential areas, have been studied. Since the scope of the research comprises socio-physical aspects of residential areas, most of the selected literature deals with the areas of community and neighborhood. The role of social behavior in residential areas is another subject that will be focused on for the better understanding of the association between the social and physical aspects of neighborhoods.

In this chapter, first of all community and neighborhood construction and related notions such as sense of community and psychological sense of community will be discussed. Then, some user needs and quality of fulfillment of the needs in neighborhood will be propounded. At the same time, theoretical concepts about the role of social residents' behavior in environment and neighborhood will be brought out. Finally, an attempt is made to present a conceptual framework for this study.

3.1 Concepts of Community and Neighborhood

There are a variety of definitions for community and neighborhood. While both are controversial concepts, critics have highlighted two underlying notions with their definitions: social and physical aspects (Barakpoor 1999:38). It should also be borne in mind that these two terms are often used interchangeably and sometimes coincide with each other. The objective of many urban planners and architects has been to attempt to unify both terms and implement them in the creation of neighborhoods with higher social coherence. Attempts have been made to increase social interactions, a friendship network, and consequently a sense of community in neighborhoods by increasing spatial proximity and localizing facilities (Lang 1987: 171). This attribute is usually an important part of the construction of neighborhood in old cities (Ögdül 2000: 321).

After Seymour Sarason (1974) introduced the concept of “*psychological sense of community*”²¹, sociologists, psychologists, and urban planners got very interested in understanding the effect of community neighborhood on issues like crime, health, civic participation, social community capacity, sense of attachment, social network, social interaction, social capital, etc.

In what follows, some different ideas of community and neighborhood as well as some relative terms like sense of community –as a social indicator in a neighborhood– and the method of measuring of this term by a psychologist will be presented.

3.1.1 Community

To many scholars, the term ‘community’ is a problematic and controversial concept (Puddifoot 1996: 331). For instance, Hillery (1955: 111-122) has found about 94 definitions for this construct. Some of these definitions appear in the etymology of this term in some dictionaries:

“The people of an area or country considered collectively;”²²

“The people with common interest living in a particular area;

²¹ Cf. Sarason 1974.

²² Oxford's Online Dictionary: <http://www.AskOxford.com/concise_oed/community?view=uk.>

An interesting population of various kinds of individuals in a common location;
A group of people with common characteristics or interest living together within a larger society;
A group linked by a common policy;
A body of persons or notions having a common history or common social, economic, and political interest;
A body of persons of common and especially professional interests scattered through a larger society.”²³

In sociology, the *Chicago School* made the most important contribution to understanding urban sociology as a field of study. Robert E. Park, as one of the leading figures of the Chicago school, presented a definition for community from the viewpoint of urban sociology (Bulmer 1982: 2, 129). His definition comprises three primary elements: a community is a population that (a) is characterized by relationship of social interaction and mutual interdependence; (b) has common ties; and (c) is territorially organized (Park 1925: 1-47).

In another similar definition, the community has been defined as a group of people that have the following characteristics: interaction, a common bond, and occupation of a common geographic area (Bell and Newby 1971: 29).

A primary look at these definitions reveals binary aspects of community construct: social and physical aspects, or relational and territorial community, or community of interest and community of place (Garfield 1975: xv-xvi; Obst et al. 2002: 88).

Communities of interest (relational communities) are those communities in which members have something in common such as shared values, goals and ideas, and their primary bond is not territorial proximity (Hummond 2006: 23). On the other hand, communities of place are those territorial, geographically bound areas in which residents feel some kind of bond with each other. Therefore, community of place as a territorial concept shares a common geographical setting and may simultaneously be community of interest (Obst 2002: 106).

The distinction between communities of place and interest has been enhanced by the impacts of the industrial revolution, modern transportation and communication (telecommunication), on the new lifestyle. These changes have made us move away from communities based on traditional values and emotional bonds to communities of individualism, rationality and utilitarian interest (Webber 1964: 108-114; Weber 1978: 40), or as Tönnies (1887) argues, we have moved away from *gemeinschaft* to *gesellschaft* (Cahnman 1995: 81-86; Keller 2003: 41).

3.1.2 Community in Urban Planning

The concept of community in the view of urban planners is very different. Sometimes it is equivalent to neighborhood and sometimes they believe that it is not constrained by geography and can occupy various urban realms. Melvin Webber (1964: 108-120) refers to the tie between two ideas of community and place. He suggests that spatial proximity –place propinquity– is considered a necessary condition along with other factors such as sense of belonging, a body of shared values, a system of social organization, and interdependency for shaping a community; however, –today– the accessibility is a more necessary condition.

²³ Merriam-Webster's Online Dictionary: <<http://www.Merriam-webster.com/dictionary/community>>

Webber refers to interest-communities as urban realms, and believes that the spatial extent of each realm is ambiguous and non place. Also, he likens the urban realm to urban regions and suggests that an urban region consists of an urban settlement with a spatially delimited territory.

Kevin Lynch (1981: 246-249) suggests that in a community as a social neighborhood or a local unit, people are acquaintances because of residential proximity. These kinds of places, because of such features as social homogeneity, identity of boundaries, and common services, may play a definite role in promoting control, and presenting identity and sense of community. He states that the “neighborhood of this kind is probably no larger than 100 households at the most, and more likely 15 to 30”, and it is “smaller than that neighborhood which in classical planning doctrine is sized to fit an elementary school” –Perry’s pattern (1929).

The community in *pattern language* of Christopher Alexander (1977: 71-74) is a physical phenomenon. He insists on the ability of communities in controlling their own living spaces and to some degree, their own economy. Also, he indicates that individuals have no effective voice in any community of more 5000-10000 persons.

Jon Lang (1987: 171) refers to interchangeable use of community and neighborhood, uses the concept of community as “the web of interpersonal relationship of a person or a group” and neighborhood as “a geographic area.” Moreover, he refers to the goal and the effect of many planners who try to adapt these two concepts –e.g. Le Corbusier in design of high-rise buildings (Unité d’Habitation in Marseilles) and Perry with idea of neighborhood unit which is exemplified in Radburn.

While the concept of “*community*” is used for both social and physical aspects, in this research, based on Lang’s definition, “*community*” is nearer to social aspects and it is distinguished as the web of interpersonal relationships of a person or a group.

3.1.3 Sense of Community

Sense of community (SOC) is a term that is different from *community* because SOC focuses on factors of social relationship rather than geographic location (Wilson-Doenges 2000: 598). MacMillan and Chavis define sense of community as (1986: 9): “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together.”

SOC is a useful concept to understand a community’s social fabric (Huggins 2002:10). It is distinguished as a catalytic element driving and influencing other social factors in a community and neighborhood, factors such as social participation (Haney and Knowles 1978: 201-214; Goeppinger and Baglioni 1985: 507-523), social network (Temkin and Rohe 1998: 61-88), community capacity (Foster-Fishman et al. 2007: 91-106), affective bonds (Ringer and Lavarkas 1981: 55-66), social cohesion (Buckner 1988: 771, 791; Robinson and Wilkinson 1995: 137-148; Ögdül 2001: 321-328), social capital (Lochner et al. 1999: 259-270), health (Davidson and Cotter 1991: 246-253), sense of place (Butz 1997: 1-25), community competence (Eng and Parker 1994: 199-220), etc.

Since SOC is a multi-level construct in social analysis, it is applicable to both macro-structural human interaction –on the level of neighborhood and communities– and the micro

individual level for the examination of human relationships (Kingston 2000: 682-683). These kinds of macro and micro approaches to humans and their social interactions offer an understanding of the dimensions of social spaces.

On the other hand, since SOC goes beyond behavior and can qualify as the shared norms and social networks developing within communities, this concept would be really useful in community assessment and in informing how and where a community and neighborhood could achieve increased positive social aspects as a goal (Talen 1999: 1363). Therefore, this factor has been selected in this study to assess social aspects of the community of the neighborhoods.

3.1.4 Psychological Sense of Community (PSOC)

Psychological sense of community is a concept in *environmental psychology* as well as in several other research disciplines, such as *social psychology* and *community psychology*. Sarsason (1974) was the first to present the theory of *psychological sense of community*. He defines PSOC as “sense that one is part of a readily available, mutually supportive network of relationships upon which one could depend and as a result of which one did not experience sustained feelings of loneliness that impel one to actions or adopting a style of living, making anxiety and setting the stage for late and more destructive anguish.”(p.1)

In realizing the importance of measurement of a sense of community in the field of community psychology, it should be expressed that many studies²⁴ have been published on this issue since the 1970s (Hill 1996: 431). This construct has been refined as a measurable concept by MacMillan and Chavis (1986: 6-23). They identified four separate dimensions for PSOC: Membership, Influence, Integration, and Shared Emotional Connection. Each of these dimensions is discussed below:

Membership refers to the feeling of belonging to a collective or a group (Lochner, 1999: 262). Membership encompasses emotional safety and a sense of belonging and identification (MacMillan and Chavis 1986: 9). Members feel that they fit in and feel accepted by the group. This dimension has been applied under other names in different researches, e.g. *belonging* (Obst et al. 2002: 106) and *sense of attachment* (Kim 2000: 51). This dimension here is labeled *belonging and attachment*.

Influence as a bidirectional concept, in a community to be both cohesive and attractive, implies that the community must influence its individual members while allowing them to feel they have some control and influence over it (Obst et al. 2002: 106-107).

MacMillan and Chavis (1986: 12-13) point out that *Integration* –as the third dimension of PSOC– refers to the idea that for a community and its members needs to maintain and reinforce a positive sense of togetherness. There are probably many aspects that individuals find reinforcing. They state that what certain individual members find reinforcing, is believed to be directed by shared values. People with shared values are an integrative force for cohesive communities. This indicator here is named *Shared Values and Cooperation*.

Shared Emotional Connection is identified with the shared history in the community (Lochner et al. 1999: 259-270). People who have a history of frequent interaction, positive and meaningful contacts as well as stronger bonds and spiritual ties will have a greater community

²⁴ At least 30 separate studies until 1996

bond (MacMillan and Chavis 1986: 13-14). This indicator here is labeled *Emotional Connection and Ties*.

Psychological sense of community was measured by MacMillan & Chavis through these 4 dimensions and 23 items on a “*Likert Scale*”²⁵. Despite the popularity of POSC, a standardized and operational definition of this construct has not been developed. Moreover, there is still a lack of agreement as to what specific characteristics make up PSOC (Chipur and Pretty 1999: 643-658; Hill 1996: 431).

Chipure and Pretty (1999: 645) argue that scholars have frequently chosen items from several other scales and the result is “collage of sociological, historical and anthropological ideas with some psychological concepts.” However, they remind us that these items are the most frequently used items as a valid measurement device for ‘sense of community’. In Table c-1 (see Appendix C), the dimensions and items that some researchers have employed as the PSOC scale are presented.

Since SOC has been distinguished as a multi level indicator²⁶ for social aspects in a community and neighborhood, it will be a central focus of this study (based on the psychologists’ method for measurement of PSOC: method of MacMillan and Chavis) and provide a better understanding of the social aspects in residential areas and the social behavior of their inhabitants.

3.1.5 Neighborhood

As to the definition of the term “*neighborhood*” in urbanism, there is disagreement and little consensus in the scholarly literature. The neighborhood is assumed to comprise an organization with different components and functions like physical, social, economic, political and even administrative (Clay and Hollister 1983: 9; Ugochukwu 2006: 122). The limitations and significances of these components and functions may vary in different countries and cultures –i.e. there is no economic, political, and administrative functions in the concept of neighborhood in many countries (such as Iran). However, the social and physical aspects are emphasized as two essential components of every residential neighborhood by most critics and planners.

Suzanne Keller (1968: 91) in a comprehensive review identifies four definitions of neighborhood with reference to two important concepts (i.e. social and physical):

1. An “area having an ecological position in a large area and particular physical characteristics arising from natural geographic conditions and form a particular configuration of activities and usage.”
2. An area having such facilities as shops, school(s), public transportation, etc.
3. “An area representing social values both for the residents and for the larger community,” values such as safety, social solidarity, etc.
4. An area with a special atmosphere. This special atmosphere shows how the area looks and how people look at the area.

In another definition for neighborhood, Kuo et al. (1998: 824) refers to two dimensions of neighborhood: a collection of individuals and place. In addition to these two factors, social

²⁵ See chapter 4.

²⁶ See subheading “Sense of Community.”

ties are seen as the glue which makes a collection of unrelated neighbors into a neighborhood place.

Chaskin (1995: 1) conceptualizes neighborhood as a “geographically bound unit in which the residents share proximity and the circumstances within that proximity.” The circumstances within proximity include social connection, functional connection, cultural connection, and circumstantial connection.

Gerphart (1997: 9-10) states that “neighborhood and communities are the immediate social contexts in which individuals and families engage with the institutions and social agents that regulate and control access to community opportunity structures and resources”. In this definition, she notes that neighborhood comprises special units and associational networks.

Neighborhood based on Meegan and Mitchell (2001: 2172) is described as a “key living space through which people get access to material and social resources, across which they pass to reach other opportunities and which symbolizes aspects of the identity of those living there, to themselves and to outsiders.”

Terrence Lee (1970: 2-10) differentiates between three models (a) the social-acquaintance neighborhood, (b) the homogenous neighborhood, and (c) the unit neighborhood. The limitation of the first model is set by human interaction, and it is like a community of interest in a community of place. The homogenous neighborhood is characterized by neighbors who live together in similar houses. The third model of neighborhood refers to the type of residential units with a common service area such as a school, shops, open spaces and park, religious centre, etc.

Localizing facilities in terms of achieving efficient circulation and attaining positive social aspects as well as a sense of community in residential areas has been a goal of many urban planners, designers and architects. Le Corbusier attempted this in the design of high rise building residential complexes (Unité d'Habitation in Marseilles), and Clarence Perry presented the idea of a neighborhood unit which was sized to a catchment area of an elementary school. It was to be a unit free of traffic as self-sufficient in daily services as possible. Later, the social connotation of this idea was discredited because the spatially limited unit did not fit the network of social interaction; however, the idea is still influential in urban design throughout the world (Lynch 1981: 246-247).

As mentioned before, there are many definitions for the concept of residential neighborhoods. According to the definitions which have been presented in this study, the two most important components that every definition emphasizes are physical and social aspects. However, for the purpose of this study, based on Lang's definition, the concept of “*neighborhood*” indicates more physical attributes of a residential environment as “*a geographical area*.”

3.2 User Needs in Residential Neighborhoods

User needs and the level of satisfaction of users are among the most significant parameters discussed by critics in order to examine the capacities and circumstances of an environment and a residential area.

Maslow (1943: 370-396) classifies the human needs as five main sorts of physiological needs, safety, belonging, esteem, and self-actualization. Regarding the purposes of the built environment, Steele (1973: 1-25) suggests some dimensions that affect the functioning and

fulfillment of needs of persons or groups, i.e. shelter and security, social contact, symbolic identification, task instrumentality²⁷, pleasure, and growth.

It is also discussed that if the built environment can house and support desired activities, human patterns of interaction, and human patterns of movement – in other words, “behavior setting” and “activity system”– it can fulfill most human needs (Lang 1987: 109; Peterson 2000: 232).

In this part major physical user needs related to the layout and construction of neighborhood will be presented. These needs include services and conveniences, safety, aesthetic appeal, and appropriate activity setting. This study will examine outdoor spaces of neighborhoods; however, due to the effect of spatial variables of housing on the behavior of people in neighborhood spaces, housing will be discussed in this section too. Additionally, since some “*user needs*” such as privacy and territory are relevant to social behavior, they will be presented and discussed under the title of “The Built Environment and Human Behavior.”

3.2.1 Housing

Housing is a basic human necessity. This concept is broadly covered in the literature on human settlements. It is not only to provide protection from the environment - as a shelter (the primary function of housing), it also has a social and psychological significance. It is a source of status, a basis of personal identity (Van Vliet et al. 1987: xi) and moreover a cultural symbol (Cf. Rapoport 1969).

Garcia Mira et al. (2005: 1) point out that the physical setting of a residential environment is critical for human well-being. They believe that is a reasonable justification for the significance of studying the role of housing in the life quality of individuals and communities. In other words, aspects of housing quality have a considerable role in the quality of the residents’ lives.

Quality refers to distinguishing properties that promote a degree of excellence (Smith et al. 1997:229-241). According to Good Child (1997: 32-34) the “discussion of quality implies a search for criteria that may be used to distinguish between good and bad.” Furthermore, he states that “unraveling the concept of quality in housing begs a series of questions: what are the main differences between types of housing and types of layout? What are the advantages and disadvantages of these types? What are the different aspects of quality? How can a designer or developer identify and measure perceptions of quality in different contexts?” Most discussions of housing quality concentrate on its socio-cultural aspects (Özsoy and Gökmen 2005: 18). Good Child (1997: 32) reminds us that discussions on quality in housing should focus on how people experience their surroundings; how they interact with that environment; and how they judge its suitability in relation to their daily routines and their expectation of the future.

Francescato (1993: 42) suggests that *use* is the original reason for building houses. He suggests that it seems more appropriate to think of use as any interaction of people with their residential areas. This term has often been taken to mean engaging in activities. It tends to be synonymous with *function* in architecture and planning (Özsoy and Gökmen 2005: 19). Use gives meaning to housing, and meaning simultaneously shows how housing is used and these

²⁷ “Task-instrumentality refers to the facilities and layouts appropriate for carrying out tasks in a particular setting.” (Kernohan et al. 1992: 157)

notions are the two most important issues in housing policy, planning or design and quality in any cultural context around the world (Arias 1993: 169-199). Therefore, the behavior of inhabitants in their residential environments and the quality of using these spaces usually reveal some meaning that is adopted from the common culture of residents.

Given the above-mentioned issues and taking the socio-physical inquiry of this study into account, the term “*quality*” has been accepted as “*fitness for use*”, i.e. fitness with behavior of people and their activity settings and the adaption of these aspects to their social and individual lives. Understanding of this “*quality*” by “*fitness of use*” can be evaluated through an examination of the users’ satisfaction and fulfillment of their needs in their respective residences (Juran and Gryna 1993:13, Özsoy and Gökmen 2005: 19).

3.2.2 Services and Conveniences

It is anticipated that every residential neighborhood has some services for meeting the necessities of its inhabitants, and also some conveniences for the promotion of the social capacities, such as sense of community, of residential areas. These include services and conveniences include the lighting system, maintenance and cleaning of spaces, trash and waste management, shops, schools, open spaces for recreation, playground, transportation, religious centers, parking lots, open spaces, etc (Perry 1924: 415-421; Keller 1969: 91; Kaiser et al. 1995:362; Walter 2007:145).

Convenience is a balancing of availability and desirability. A person may believe that each convenience is near, whereas he is balancing his desire to do the activity with the availability of that activity (Hester 1975: 98).

Another point about conveniences is the distance of convenience from one’s home. Hester (1975: 98) points out that the distance depends on two factors: time and mode of transportation which can be described in actual or functional terms. Actual distance is measured by definite measurement like meter; but, functional distance is measured in relation to neighborhood focal points or patterns (Gutman 1966: 103-115). In many cases, people will use a facility which is farther from their house in actual distance than a similar facility which is closer due to fact that the farther facility is placed on the way they often go or walk (Hester 1975: 98). In this manner, the functional distance is shorter than the actual distance. Therefore, in effect it is functional distance that determines convenience (Downs and Stea 2005: 317-319).

Some issues like services and conveniences are dependent on the opinion of residents and may have a significant impact on the level of satisfaction of inhabitants from a particular residential area. Therefore, the quality of this factor in the fulfillment of residents’ needs will be examined through the level of satisfaction of residents.

3.2.3 Safety

One of the initial and essential needs of man for residing in an environment is safety. Safety as a community factor comprises the two dimensions of “physical” and “social” (Galea 2007: 61).

Physical safety is the control and prevention of physically dangerous situations (e.g. accidents) from arising by proper arrangement of activity settings and special settings like signs and barriers. For instance, the layout of streets and sidewalks in a neighborhood can

control and limit the speed of cars to prevent harmful accidents and create a safe living place for families (Russ 2002: 163).

The social aspect of safety is usually recognized to be more important by people. Dangerous issues like crime, burglaries, violence and drug abuse play a determinant role in residing in a neighborhood.

Regarding the dimensions of social safety in residential areas, the subject of *supervision* is a significant element (Sieh 2005: 171). Supervision can occur formally or informally. Formal supervision can be executed by police protection, and informal supervision can be performed by local inhabitants. The latter can be more conducive to security (Jacobs 1969: 55-73). Although provision of safety is one of the essential needs in a neighborhood, some social informal supervision can lead to negative influence on some residential needs like privacy (Hester 1975: 95).

Safety in this research is based on the social and physical dimensions and will be assessed through the level of satisfaction of residents.

3.2.4 Aesthetic Appeal

“*Aesthetic attraction*” as a user need may lead to encouraging residents to use their neighborhood’s spaces, and consequently it can improve a sense of belonging and attachment in the neighborhood (Hester 1975: 98). The appearance of a neighborhood is important for its inhabitants. Therefore, the residents would like to have an aesthetically appropriate neighborhoodscape.

Aesthetic appeal can be identified by many components such as style, compatibility, balance, cleanliness, order and disorder, deteriorated building and age, etc.

Since aesthetic attraction may influence the social factors of a neighborhood, it must be considered a significant factor in the planning and design of residential areas. Therefore, the quality of this factor in fulfillment of needs will be examined as an indicator of conveniences in this study.

3.2.5 Appropriate Activity Setting

Appropriate activity setting is one of the essential needs for the provision of usable and comfortable space. It is described as a determinant of use of a particular space by individuals. Appropriate activity setting includes both location and site characteristics (Hester 1975: 87). The location of occurrence of an activity must be compatible with that act. For instance, the location of an energetic activity like soccer must be in a wide open space, not near houses. Site characteristics must have some capabilities to fulfill and support an activity. Therefore, designers try to match the desired activity setting with the site capability.

Site characteristics can include “adaptable” and “fixed” activity settings (Neuliep 2000: 108). The use of a fixed space is determined through special activities. The characteristics of a fixed activity setting are restricted to the function of that activity. In contrast, the use of an adaptable space is not dictated. For example, a wide green space can be used as a playground for children, picnic, resting, and a variety of other activities.

The concept of appropriate activity setting is very different from culture to culture and society to society. In the next part of this chapter this subject will be discussed in terms of the behavior and activity systems of inhabitants in outdoor spaces of neighborhood.

3.3 The Built Environment and Human Behavior

There are four major theoretical approaches about the relationship between built environment and human behavior. These approaches involve a *free-will* approach, a *possibilistic* approach, a *probabilistic* approach, and a *deterministic* approach (Rapoport 1976:9; Porteous 1977: 210; Lang 1987: 100; Michelson 2000: 143).

The “*free-will*” approach assumes that environment has no effect on human behavior. Lang (1987:100) states that this approach is indefensible because of the severe limitations that humans have as biological beings.

Contrary to the free-will approach, environmental “*determinism*” argues that physical aspects of environment determine human behavior (Rapoport 1976: 9). The *determinism* approach implies a cause and effect relationship between environment and behavior (Lipman 1974: 23; Bell 2005: 373-374). Physical aspects of environment are significant factors in human life, but some scholars believe that the physical environment cannot be regarded as the sole determinant of human behavior (Leeds 1969: 377-394; Alexander 1999: 196-197).

The “*possibilistic*” approach suggests that the physical aspects of environment provide *possibilities* within which people select based on their cultural criteria (Rapoport 1977: 2). *Possibilists* perceive the environment to be the supplier of human behavior which consists of a set of opportunities for behavior on the basis of which action may or may not be taken. However, according to Lang (1987: 100) “the analysis of human behavior suggests that people are not completely free to act on their own choices as the *possibilistic* approach assumes. Every individual has a set of motivations and competencies that are at least partially conditioned by the terrestrial, social and cultural environments.”

According to the “*probabilistic*” approach, the physical environment provides possibilities for choice and is not a determining agent. However, some choices are more probable than others (Rapoport 1976: 9; Goldstein 1996: 49). This position implies uncertainty in human behavior system in the physical environment.

With regard to the effect of built environment on human behavior, Rapoport (1976: 9) argues that the built environment can be seen as a behavior setting –a setting for human activities. He suggests that behavior setting may be neutral, inhibiting, or facilitating for the creation of acting, but cannot however determine and generate or block activities.

This study is based on the “*probabilistic*” approach and will use the concept of “*behavior setting*” as one of the research frameworks in analyzing the social behavior of inhabitants in neighborhoods.

3.3.1 Behavior Setting

The creation of ecological psychology by Barker (1968) focuses on extra individual in field behavior rather than on individual behavior in the laboratory. This branch of psychology provides the concept of *behavior setting* similar to activity space. This concept of a behavior

setting examines the relationship between a physical environment –setting– and the pattern of behavior that may possibly occur in it (Lang 1987: 113).

The behavior setting has been defined as a stable combination of one or more extra-individual patterns of behavior surrounded by non-psychological milieu or as a combination of *standing patterns of behavior* and its surrounding milieu (Barker 1968: 34-35; Rapoport 1982: 168). In other words, a behavior setting is considered as a stable combination of activity and place, and it consists of a milieu (a particular layout of the environment), a standing pattern of behavior (a recurrent activity), a *synomorphy* (a congruent relationship between the two) and a specific time period (Barker 1968: 34-35; Lang 1987:113).

Rapoport (1977: 299), in analyzing the concept of behavior setting, suggests that the setting for a special activity must supply it with the necessary props and facilities. As stated before, he points out while behavior setting does not determine behavior, it can be inhibiting, facilitating, or neutral for creation of activities (1976: 9).

Every environment consists of various behavior settings that usually imply the lifestyles of their users and their cultures. Therefore, the behavior settings can be used as a unit for environment analysis and even design (Lang 1987: 113; Cotterell 1998: 383).

Additionally, an “*activity system*” comprises many behavior settings that link together in an environment (Lang 1994: 187). *Activity systems* show many variables like the users’ motivation, attitudes, cultural norms, and competencies (Porteous 1977: 93; Lang 1987: 113). Neighborhood has been examined as an activity system in this research. Further, an analysis of behavior settings (based on abovementioned definitions) can help us understand the relationship between physical aspects of environment and social behavior and activity patterns of its residents.

3.3.2 Social Interaction Processes and Built Environment

In the process of socialization, the social interaction comprises some different forms: cooperation, acculturation, accommodation, assimilation, competition, and conflict (Kinloch 1979: 44; Taneja 2003: 50).

There are many arguments about the effect of built environment on social interaction of users. Hester (1975: 46-51) refers to particular processes involved in social interactions in the built environment. These processes include cooperation, accommodation, acculturation, competition, and conflict. In fact, the characteristics of a built environment can shift users’ interactions from cooperation into conflict. He also identifies some social interaction settings for these social interactions processes: vis-a-vis and inclusive interactions for cooperation; congruent and incongruent interaction settings for acculturation; exclusive and parallel interaction settings for conflict or accommodation. An Inclusive interaction setting provides a small space in which a limited number of people can get together and shape a clique. A vis-a-vis interaction setting provides a space that it is appropriate for face to face social exchange between two persons. Congruent and incongruent interaction settings are those that allow observation of a role model’s behavior and either the acceptance or rejection of that behavior. Finally, an exclusive interaction setting is the remaining space that comes from an inclusive interaction setting, so the exclusive setting as a setting occurs outside that inclusive setting.²⁸ Another point here is a parallel interaction setting which does not promote cooperative face to face interaction. It generally prevents or discourages social exchange by forcing people to be

²⁸ For instance, in a playground, places of play are inclusive interaction settings, and spaces out of these places such as spaces of seating and parental control are exclusive interaction settings.

arranged side by side –e.g. the long rows of park benches. These definitions clarify two concepts of sociopetal and sociofugal space, as spaces that cause people get together or force them apart.

Many scholars believe that the arrangement of houses and the form and proximity of streets in neighborhoods can have an effect on social interaction and inhabitants' behavior (Skjaeveland et al. 1996: 413). Meanwhile, Rapoport states (1977) that in most luxury houses, residents pride themselves on not knowing their neighbors. While functional proximity is a motivation for social interaction, there must be a predisposition for such social behavior from users. These interactions depend on some variables like personality, social and cultural backgrounds (Lang 1981: 137). The social interaction and the effect of physical aspects of neighborhood on it are controversial subjects which, based on abovementioned definitions and “*probabilistic*” approach, will be examined in this study.

3.3.3 Privacy and Territory

The objective of this part is to put forward factors relating to privacy, territorial behavior and refer to some other effective factors such as personal spaces and crowding. These factors affect the perceptions on environmental comfort and quality. The concepts of privacy, territory, personal space, and avoidance from crowding contribute to other human needs such as security, esteem and affiliation (Altman 1975: 6-9; Lang 1987: 145; Stewart and Menconi 2005:4). However, the shape of expression and mechanism of these factors are manifested very differently in various societies and cultures (Cf. Hall 1966; Rosenberg 2000: 75; Brain 2002: 228).

The notions of “*privacy*”, “*territory*”, “*personal space*”²⁹ and “*crowding*” are closely linked. Irwin Altman (1975: 3) proposes a conceptual model in which privacy is the main core for linking these four concepts.

Rapoport (1977: 289) defines privacy as “the control and avoidance of unwanted interaction with other people.” He introduces the “unwanted”, “interaction”, and “control” as culturally variable terms (1976: 29). Therefore, the kind and degree of privacy depends on the activity pattern, cultural context and personality of users. He identifies privacy as a process for determination of boundaries between people that control their interaction based on these boundaries.

According to Jon Lang (1987: 145), definitions of privacy have one thing in common: The definitions “stress that it has to do with the ability of individuals or groups to control their visual, auditory, and olfactory interactions with others.” This research will attempt to examine this variable in neighborhoods based on the last definition from Lang and also the aforementioned definition of privacy by Rapoport.

The sense of crowding will occur when privacy is too little –e.g. social interaction is more than the desired rate (Altman 1975: 8; Merry: 1981: 38). Crowding is stressful because it limits the personal autonomy and expression and hampers desirable communication. Also, crowding can causes negative behavior because of its relation to social overload. Therefore,

²⁹ Since this concept does not contribute much to the understanding of the built environment (Lang, 1987: 147), here its definition suffices. Robert Sommer (1969: 26) defines personal space as “an area with an invisible boundary surrounding the person’s body into which intruders many not come... personal space is not by necessity spherical in shape, no does it extend equally in all directions... it has been linked to a snail shell, a soap bubble,...”

the behavior settings should not be overmanned and crowded, so, people should have adequate personal space and territorial control (Lang 1987: 147). On the other hand, most of scholars (e.g. Stokols 1972: 275-278; Aicher 1998: 37) differentiate between crowding and density. However, they suggest that an increased density is an important prior condition for a feeling of crowding.

As mentioned before, Altman (1975: 107) identify territoriality as one mechanism for attaining privacy: “territorial behavior is a self/other boundary regulation mechanism that involves personalization of or marking a place or object and communication that it is owned by a person or group.”

Rapoport (1977: 278-279) defines territory as a “ particular area or areas which are owned and defended –whether physically or through rules and symbols– which identify an area as belonging to an individual or group.” He distinguishes personalization as one important way to territorialize.

Lang (1987: 148) in his examination of some of the definitions of territory refers to four characteristics of territories: (a) the ownership of or rights to a place; (b) the personalization of an area; (c) the right to defend against intrusion, and (d) the affording of many functions ranging from the meeting of basic physiological needs to the satisfaction of cognitive and aesthetic needs. He also suggests that attaining privacy through territorial control by the layout of the environment fulfils some of the basic human needs like identity, stimulation, and security. Furthermore, it leads to stabilized social relationships.

Personalization is a way to claim ownership or belonging by marking of places, or the accretion of objects within them (Becker 1977: 51-69; Fischer 1997: 10). It is a manifestation of territorial control and expression of aesthetic tastes (Lang 1987: 147; Vischer 2005: 70).

Types of territory or territorial hierarchies are presented in many ways. Territory will be examined in this study based on *territorial hierarchy* in neighborhoods. The territorial hierarchy model that is employed in this research is adopted from Oscar Newman (1972) and his study about defensible space. He identified four types of territory from private to public space: private space, semi private space, semi public space, and public space (P.13). Private spaces are privately owned spaces; semiprivate spaces tend to be owned with others; semi public spaces are not owned by the residents, who still feel they have some control and ownership over them; and public spaces are used by individuals or some groups but are not owned or personalized by them (Lang: 1987: 150).

3.4 Conceptual Framework of the Study

Based on the cited studies and theories in the literature review, this study’s conceptual framework is outlined here (Figure 12). The quoted notions in various domains on community and neighborhood in the literature review refer to the interchangeable use of these two concepts. However, the concept of *community* as “the web of interpersonal relationship of a person or a group” targets more social aspects of residential areas; and the notion of *neighborhood* as “a geographic area” indicates more physical attributes of the residential environment (Lang 1987: 171). Therefore, these two concepts with aforementioned meanings are applied in the conceptual framework of this research.

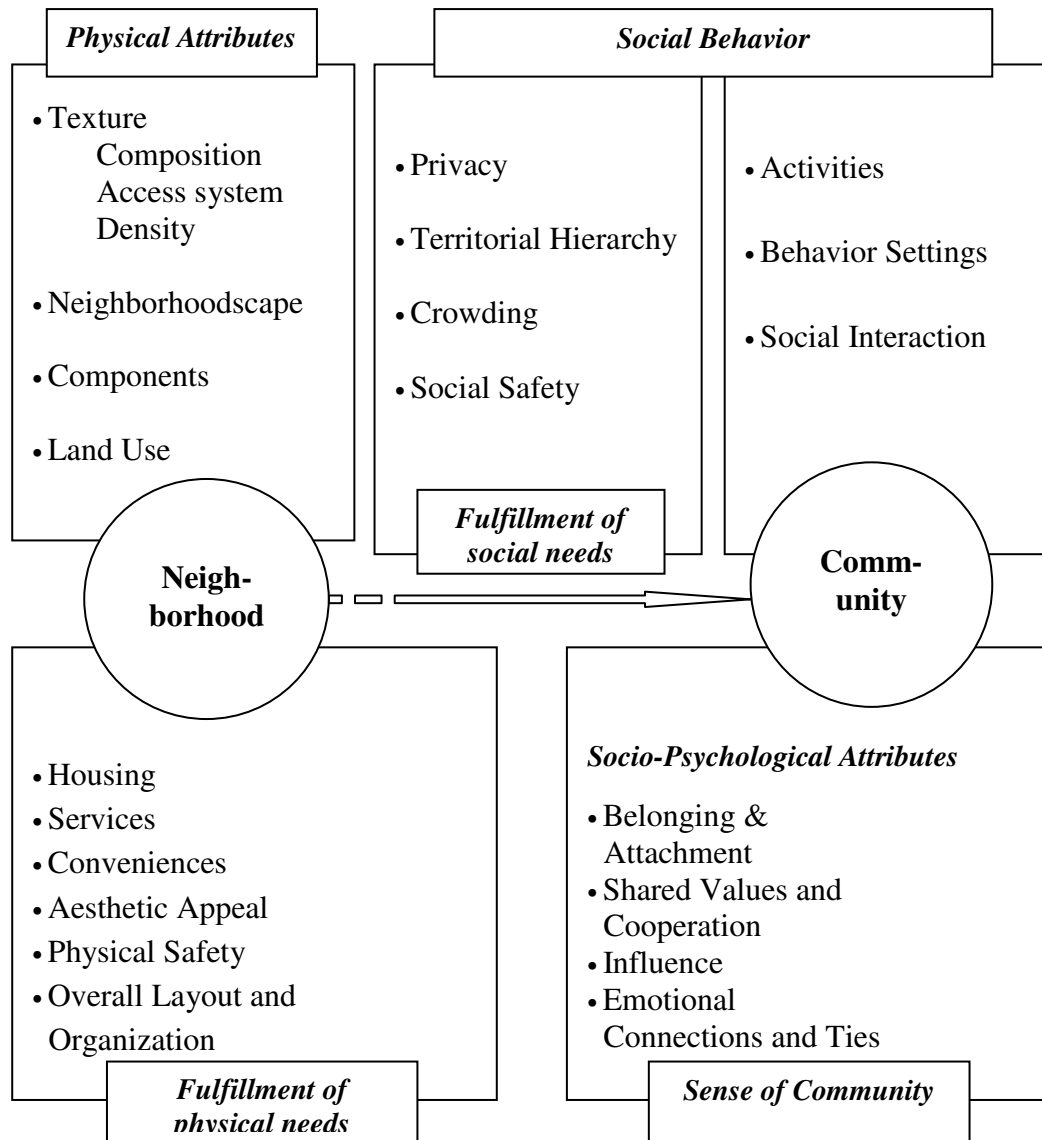


Figure 12: Conceptual Framework of the Study.

Four factors of *texture*³⁰, *neighborhoodscape*, *components of neighborhoods*, and *land use* reveal the physical attributes of neighborhood as a geographic area in this conceptual framework. Meanwhile, the fulfillment of physical needs with such factors as housing, services, conveniences, aesthetic appeal, physical safety and overall layout and organization are presented here, as physical features of neighborhood.

The term “Community” used in this conceptual framework comprises two main parts: sense of community and social behavior. Sense of community here is adopted from environmental psychology and indicates socio-psychological attributes of community with four indicators of belonging and attachment, shared values and cooperation, influence, as well as emotional connections and ties. Social behavior comprises activities of residents, social interaction, and behavior settings. Additionally, some indicators like privacy, crowding, and social safety emerge as both indicators of social behavior and factors for the fulfillment of social needs.

An examination of physical and social aspects of residential areas using these variables will provide the opportunity for understanding the effect of physical aspects on social variables of a residential environment and on the possibility of matching two concepts of neighborhood and community in these areas.

³⁰ Lynch (1981: 274) suggests three factors of density, access system, and composition as the indicators of the external texture of a settlement, by which we may judge the performance of a settlement.

Chapter 4: Methodology

A “*mixed method*” strategy was adopted for this study to make up for the limitations of this study and because of the advantages of *mixed method* in providing “appropriate checks against the weak points in each method, while simultaneously enabling the benefits to complement each other” (Groat and Wang 2002: 361). The *mixed method* strategy in this research consists of both qualitative and quantitative data, which were collected concurrently and merged during the analysis phase. “The quantitative research excels at summarizing large amounts of data and reaching generalization based on statistical project” (Trochim 2004: n.p.) and the qualitative research excels at the capacity to take in rich and holistic qualities of real life circumstances, and sensitivity to meanings and processes of peoples’ activities and artifacts (Miles and Huberman 1994: 6-7; Groat and Wang 2002: 199-244).

Moreover, a “*quasi-experimental*” method was employed for the examination of the effects of physical aspects on social behavior and sense of community of residents. David Wang (2002: 91) in his description of architectural research methods points out that the experimental method can be used in studies dealing with peoples’ behavior. Moor and McCabe (1993: 202) suggest that “The best method –indeed the only fully compelling method– of establishing causation is to conduct a carefully-designed experiment in which the effects of possible lurking variables are controlled. To experiment means to actively change {X} and observe the response {Y}.”

Using this method and controlling different variables except physical and social aspects of neighborhoods, the researcher has tried to understand the situation of social aspects of neighborhoods by examining the changes in the physical aspects through the selection of different neighborhoods.

In this chapter, an attempt is made to describe the overall approach that has been employed for fulfilling the research objectives and answering the study questions, as well as methods, and techniques that have been adopted for the selection of study areas, sampling the population, data collection, analytical techniques, and examining the reliability and validity of results.

4.1 Procedure

The purpose of this part is to provide a description of the procedure adopted and the methods and techniques utilized to answer the research questions. Since the scope of this research relates to a socio-physical inquiry, both physical and social aspects and the effect of physical characteristics on social attributes are the central focus of the study.

In this way, first the physical features of selected neighborhoods were examined. As stated before, the mixed method approach was employed in this research. Hence, in this step, both qualitative and quantitative methods were applied. Some physical factors such as: components of neighborhood, the texture, composition, density, accessibility, etc (see Appendix A) were collected by field work with the provision of land use map, photos, and field notes. Additionally, some physical aspects of the neighborhood such as services, conveniences, housing, layout and organization, aesthetic appeals, and physical safety were surveyed by observation as well as examination of the extent to which they fulfill the needs of their residents in the neighborhood by interviewing the inhabitants and analyzing through quantitative methods.

The social aspect of the neighborhoods, examined in this research, consisted of the social behavior of inhabitants as well as sense of community. For a better understanding of social behavior of residents and their activities, both qualitative and quantitative methods were again used. The behavior settings and activity systems, social interactions, privacy and territorial hierarchy, as well as social safety were observed firstly with the non-interactive and non-participant method. This phase involved reviewing many photos and field notes on the common social behavior and activity settings. Then, as a second step, the face to face interview by questionnaire along with interactive participant observation was conducted. Additionally, the sense of community as an important indicator of social fabric (Huggins 2002: 10) was surveyed through a five-point “*Likert Scale*”³¹ questionnaire (see PSOC in chapter 3).

It is clear that many variables influence the creation of a phenomenon. Based on the *quasi-experimental* method, if every variable can be controlled except for two variables, then by changing one of these two variables, we can observe what will occur with the other one. In this study for understanding the effect of physical characteristics of neighborhoods on social attributes of residents, this method was used through controlling the socio-economic status of the head of households and cultural variables as well as interviewees’ social personality and length of their residence in the neighborhood.³² Then, to examine the effect of physical aspects on social aspects of neighborhoods, two neighborhoods with different physical characteristics in every income level were chosen.³³ The objective of this task was to discover the extent to which changes in the physical attributes can lead to a corresponding change in the social aspects of their residents.

In this way, the socio-economic status was controlled by the selection of three low, middle, and high income residential districts. Then, in the next step, culture as another effective variable which impacts social behavior was controlled. This task was done by choosing the neighborhoods of every income level in a common cultural atmosphere in such a way that these neighborhoods in every district were selected as close to each other as possible in a known and common cultural area.³⁴ Also, to gain more valid data from these selected neighborhoods some economic indicators, such as SES (socio-economic status) and ownership, as well as some cultural aspects (see appendix A) of them were controlled. Social personality was examined through a *Likert Scale* (see questionnaire in Appendix B) in an attempt to control individual differences in the two neighborhoods within every status level.³⁵ Additionally, the length of residence in a neighborhood was controlled by interviewing those inhabitants that had lived at least 2 years in the neighborhood, and also comparing the means of these lengths between each of the two neighborhoods in every income status.

4.2 The Study Areas

Data presented in this study were collected from the city of Mashad.³⁶ The reason for this selection was the researcher’s familiarity with the study environment, having more facilities

³¹ The *Likert Scale* is a unidimensional scale, in which attitudes are measured by a set of statements. The Statements are asked to express agreement or disagreement in a five-point scale—sometimes up to a nine-point scale. Each degree of agreement is given a numerical value from one to five—for a five-point scale. Therefore, a total numerical value can be calculated from all responses (Trochim: 2006: n.p.).

³² The purpose of these controls was due to probability of the effect of these variables on social behavior and social aspects of neighborhood.

³³ Three neighborhoods were selected in low income level only (see The Study Areas).

³⁴ Known and common culture area was determined by a field survey and common knowledge of residents of the city as well as by asking some sociologists familiar with the area.

³⁵ Social personality can be different based on such tendencies as introversion, extroversion, misanthropy, and sociability.

³⁶ See chapter 2 for more information about the situation of Mashad city and its process of changes.

particularly with reference to data collection, familiarity with research institutions, and finally the possibility of having a better relationship and contact with the authorities for collecting the data.

One of the most important parts of this study was the procedure employed to select case study areas. This selection had to be made on the basis of typical patterns in Mashad's residential areas.

Since the social status is the most significant element in urban distinction in Iranian cities, the study areas were selected from three levels of socio-economic strata: high, middle, and low. Therefore, initially, an attempt was made to choose the areas based on a study conducted in the research centre of Mashad city council, entitled "*The Rate of Development of Different Districts of Mashad City (Shahnoushi 2007).*"

In the abovementioned study, Mashad was divided into 36 districts, which were categorized by *development rate* using the "*Morris Method*".³⁷ The rate of development had been measured with 7 indicators, and 40 items. These 7 indicators were infrastructures, education, economy, health and treatment, family welfare, social welfare, and underdevelopment indicators.

For the selection of study areas, based on the development rate of these 36 districts, the range between the highest to the lowest rates was divided into three equal parts – as the high, middle and low rates and strata. The three strata were then also divided into three sections, and the middle section of each was chosen as the basis from which the study areas could be selected. Each of these three selected sections included some of Mashad's districts (Figure C-1 in Appendix C).

The next step was to analyze these districts through field study (observation and interviews with residents) as well as asking the opinions of local sociologists and urban planners. Thus one district was chosen in each one of these three sections. Significant criteria for the determination of every district in this part included: (1) to choose a homogeneous area in terms of common culture and even socio-economic status (for controlling economic and cultural variables); (2) the existence of at least two various types of neighborhoods in terms of different physical characteristics to examine the effect of the physical aspects on the social aspect of the neighborhood (see Procedure heading in this chapter).

The selected high, middle, and low class districts were located in the 1, 11 and 3 urban districts of Mashad (see Figure 13). During the search for appropriate districts, a low-class district was identified that showed remarkable physical aspects in comparison with Mashad's usual neighborhoods. The layout of this neighborhood was based on the *neighborhood unit* pattern (Perry 1924: 415-421), and contained many open spaces. Although this neighborhood was located in a low income area, it had many facilities –particularly public spaces. Since the planning of this area was based on Perry's *neighborhood unit* pattern with many open and public spaces, studying this neighborhood could be a helpful means to better understand the influence of physical aspects on social behavior of inhabitants. Therefore, this neighborhood was chosen as an exceptional study area.

The final step in the process of choosing the study areas was the determination of the neighborhoods from the selected districts. As mentioned before, for the examination of the

³⁷ The Morris Method provides sensitivity estimates of total influence and an overall sensitivity measure of interactions between factors (Campolongo et al. 2005: 369).

impact of physical characteristics on social behavior and sense of community of residents, at least two neighborhoods had to be chosen with different physical features in every income level. Since there was a common pattern in every low, middle and high income residential area with a simple grid street plan pattern, one of the neighborhoods in every district was selected from this pattern on that status for a better perception of the situation of residential areas of Mashad.

To attain a common unified culture both selected neighborhoods in every district had to be as close to each other geographically as possible. Only the neighborhood in the second low-class-district was far from the other two low income neighborhoods. Hence, for controlling cultural variable, an attempt was made to compare such variables as residents' educational and occupational level, ethnic division, and duration of living in Mashad.

At this stage local sociologists and urban planners were consulted to help make more valid choices in the process of selecting the neighborhoods. Finally, the following neighborhoods were singled out as suitable cases for the purpose of this study: (1) in High income: Jami and Farhad neighborhoods, (2) in middle income: Syed-Razi and Iraj-Mirza, and (3) in low income: neighborhoods of Sahraie, Fattah, and Karmandan³⁸. However, the important point here is that the three neighborhoods of Farhad, Iraj-Mirza, and Fattah display the most common patterns of residential areas in Iranian cities –including Mashad. Moreover, the other neighborhoods were selected for inquiry into the effect of physical on social aspects.

The selected neighborhoods³⁹ in this three income levels are introduced below (see Figure 13):

(1) Jami neighborhood is located in high income residential areas of Mashad with grid texture and some cul-de-sacs for vehicles and open for pedestrians (more attention is paid to territorial hierarchy and sidewalks), with 2 to 8-story buildings, and with a central part including local facilities such as stores, a private high school and a park (see Figure 13).

(2) The second high income neighborhood is Farhad, with simple grid texture and wide streets, also with 2 to 6-story buildings and with a lack of local services and open spaces in the neighborhood (see Figure 13).

(3) The first middle income neighborhood is Syed-Razi, with a central open space and market, stores and a school under construction for handicapped students, grid texture and wide streets, as well as 2 to 3-story houses (see Figure 13)

(4) Iraj-Mirza is the second middle income area with grid texture and wide streets. There is a street with common facilities such as stores, a primary school, and a mosque. The buildings have 3 to 4 stories on average (see Figure 13).

(5) Fattah is located in a low income area with a simple grid texture. In this neighborhood most of the facilities are arranged along the sub-collector streets of the neighborhood. These facilities include stores, mosques, and schools. The average number of stories is 2 (see Figure 13).

³⁸ The two neighborhoods of Sahraie and Karmandan, because of existence of a significant difference between their means of socio-economical status (SES), weren't qualified for comparison and examination. Therefore, the two neighborhoods of Sahraie with Fattah and the two neighborhoods of Karmandan with Fattah will be compared during this study.

³⁹ The selected neighborhoods covered more than 90 percent of common patterns of residential areas in Mashad.

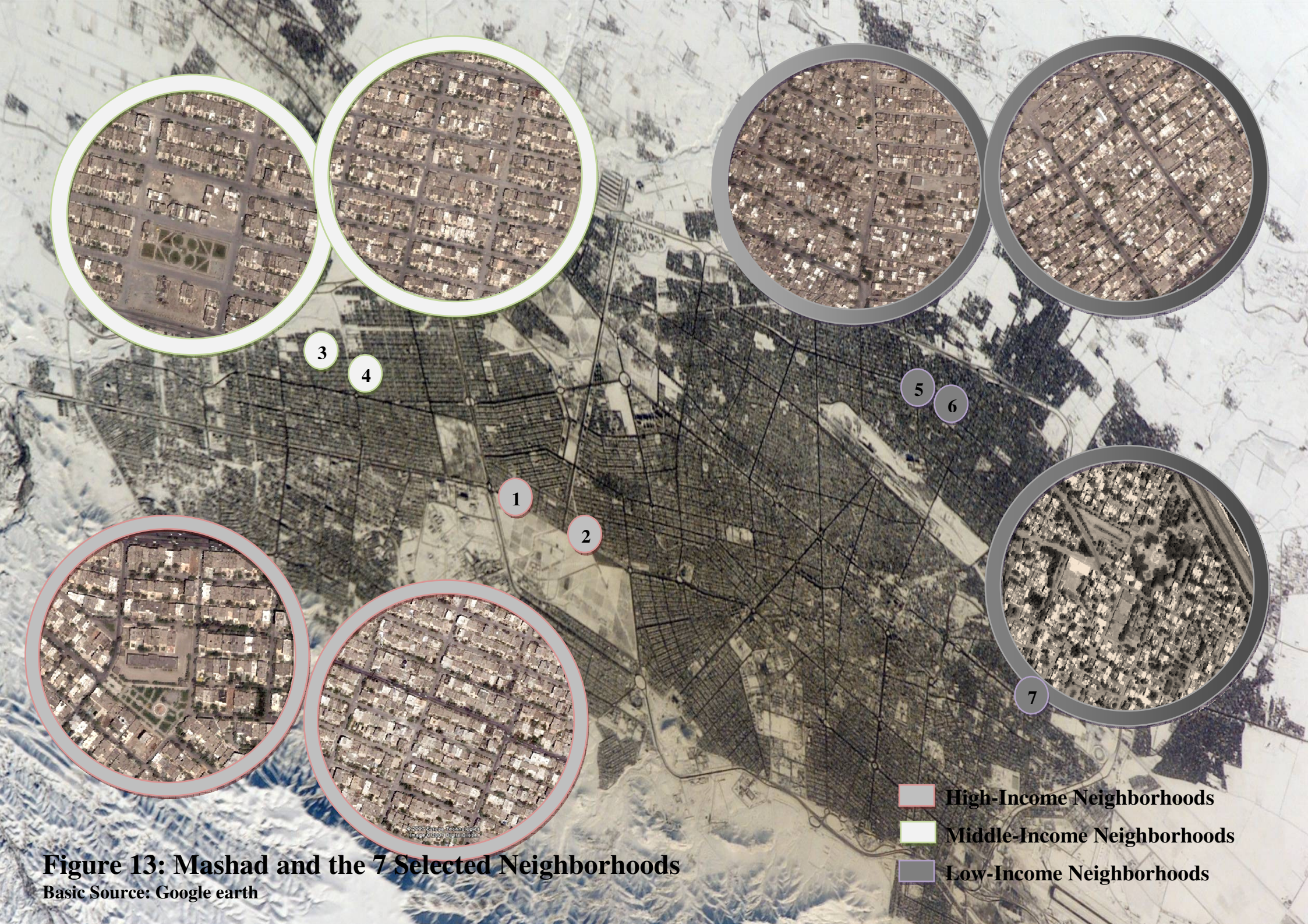


Figure 13: Mashad and the 7 Selected Neighborhoods

Basic Source: Google earth

- High-Income Neighborhoods
- Middle-Income Neighborhoods
- Low-Income Neighborhoods

(6) Sahraie as the second low class neighborhood in this study is located beside Fattah. Previously it was a village with an organic structure, but today it follows the master and detailed plan of Mashad and grid streets have formed a new fabric within it. Therefore, it is a mixture of grid and organic texture. In spite of these changes, it is still structured around a lively semi-old axial centre. This main structure includes facilities such as stores, a hammam, a health centre, and schools and mosques in its proximity. Also, the average number of stories is 2 (see Figure 13).

(7) Karmandan, the third low income area, has been presented in this study as an exception. This area was constructed in the second Pahlavi period based on Perry's *neighborhood unit* pattern. Its center includes facilities such as shops, schools, a mosque, a park, and so on. The texture of this neighborhood has been shaped with grid texture with many open and green spaces. The average number of stories is between 1 and 2 (see Figure 13).

4.3 Sample Size

After selecting the neighborhoods for the interview, the sample size had to be determined. This task was carried out by statistical methods of sample size and examination of its possibility in neighborhood surroundings.

Since the extents of neighborhoods (except Karmandan) were not clear, first, by surveying the environment, layout, and configuration of every neighborhood, a limited area was selected for the execution of the field work. These areas contained about 800 to 1100 households – about 4000 to 5000 inhabitants based on the average urban household size in Mashad.⁴⁰

The variations in the sample size in the neighborhoods were due to the neighborhoods' layouts and configurations. In a neighborhood with more homogeneity –in terms of physical aspects– the smaller area was selected and consequently, the sample size was smaller. Contrarily, in a heterogeneous neighborhood with more differences in physical features a larger sample size was selected.⁴¹

After sample selection the next step in the determination of the sample size was the selection of *Confidence Interval* and *Confidence Level*. The *Confidence Interval* is a range of numerical values. The numerical values of the upper and lower boundaries (in the form of plus-and-minus) of the *Confidence Interval* indicate confidence limits (Yaremko et al. 1986: 36). On the other hand, the likelihood that the interval includes the parameter is determined by the *Confidence Level*. The *Confidence Level* is usually set at 95% or 99%. For instance, if in a sample size with 100 cases 70% of respondents were satisfied with their neighborhoods' services, with a *Confidence Interval* of 5 and *Confidence Level* of 95%, the true percentage of the population could be expressed between 65% and 75%, with 95% confidence.

The last consideration was to clarify the split on variables of samples. In non-homogeneous samples the split must be 50/50, but this split for homogeneous samples will be smaller (Vaus 2002: 81). Therefore, in this research since our purpose was to select every neighborhood from a homogeneous social status and culture, the 30/70 split was chosen. Additionally, due to the limited facility, time limitations, and budget constraints, the confidence interval

⁴⁰ The average urban household size in Mashad was 4.62 persons in 2000 (Zist-Kavosh 2002: n.p.).

⁴¹ The extent of community neighborhood in the opinion of some scholars is not so big, and it is not more than 5000 to 10000 people (see chapter 3).

between 8-9 and confidence level 95% were selected. In Table 1, the population and sample size of the study areas is presented.

Neighborhood	Population (household, about)	Sample size (household)
Jami	1000	100
Farhad	1000	100
Syed-Razi	800	90
Iraj-Mirza	800	90
Fattah	1000	100
Sahraie	1100	120
Karmandan	1000	100

Table 1: The population and sample size of study areas.

4.4 Indicators and Factors

There is a wide variety of indicators and factors in residential areas and neighborhood discussions. Since the scope of the study relates to the socio-physical aspects of residential areas, the main indicators were selected from physical and social factors. Nevertheless, for understanding economic and cultural circumstances in every neighborhood, some economic indicators and a few cultural indicators were examined through the research. *Appendix A* presents the factors, indicators and their related items employed in this study.

4.5 Data Collection

The procedure employed for data gathering in this study comprises two techniques: interview and observation (see Table 2). Interviews present us with quantitative data and observations present us with qualitative data.

After the selection of neighborhoods, the first step in data collection was non-participant observation⁴² (non-interactive) to examine the social behavior of the inhabitants. This observation was conducted by taking notes and photos from the research field, stream of behavior and its settings. This task was performed in an unrecognizable manner by many walk-bys and drive-bys during the first two months of field work and usually between the daily hours of 10am-14pm and 16pm-20pm.⁴³ Along with this part the data related to the physical aspects of neighborhoods were provided by environmental survey. These data included the land use map and some photos.

The last part of data gathering started with an interactive survey through interviews by questionnaires. This task was performed during the second two months of the field work. The questionnaire consisted of multiple-choice questions and a few open questions. The questionnaire consisted of 5 sections including general questions, social interaction, fulfillment of needs, sense of community, and characteristic of members of family and their activities (see Appendix B). These interviews were conducted with 700 households in these neighborhoods. The interviewees were representatives of the families of more than 16 years

⁴² The reason of non-participation in this part was the control on researcher's effect on residents' behavior.

⁴³ These times are the rush hour of use of outdoor spaces of neighborhoods.

of age. Additionally, the duration of residence of interviewees in these neighborhoods had to be at least 2 years. This was assumed to be necessary to reduce and control the probability of disconnection with neighbors and residential areas because of the limited period of time spent living in the neighborhood. The interviewees were chosen in a systematic manner in such a way that one house was selected for interview from every 4 or 5 houses in every selected neighborhood area.

In the meantime, participant observation was done in these neighborhoods through interacting and speaking with residents and taking photos and notes.

Technique Tool	Interactive	Non interactive
Interviews	Questionnaire includes multiple-choice questions and a few open end questions	
Environmental Surveys		Photo, Land use map
Observation	Sometimes participant observation Photo Field note	Nonparticipant observation stream of behavior, Photo Field note

Table 2: The stages of Data Collection in this study.

4.6 Analytical Techniques

Based on the mixed method inquiry of this study, the adopted analytical techniques included both qualitative and quantitative categories.

For quantitative analysis statistical measures such as *Frequencies*, *Means*, comparison of means, and *–Independent samples T-Test*⁴⁴ were employed and computed through the SPSS software. To identify any significant differences, the *independent sample T-Tests* were used for comparing every indicator of SES, social personality, fulfillment of needs, social interaction, privacy, social safety, and sense of community between every two neighborhoods in different income status areas.

Miles and Huberman (1994: 12) presented an analytical procedure for qualitative data. In this process, during data gathering, the researcher shuttles among three nodes of data reduction, data display, and conclusion drawing /verifying. Following this procedure in this study, once the collected qualitative data was classified, reduced and displayed, the researcher gradually moved toward identifying patterns of social behavior and its settings and providing explanations of differences between these patterns of every two neighborhoods in different income level areas.

4.7 Validity and Reliability

The validity and reliability in this research should be discussed in terms of validity of the selected neighborhood, and the techniques and procedures used for data collection and data analysis.

Regarding the validity of the selected neighborhoods, two steps were taken. First, an attempt was made to take into account the findings of substantive previous research: *the Rate of*

⁴⁴ . The independent sample T-Test is used for comparison two groups on a single or many specified variables (Frude 1987: 73).

Development of Different Districts of Mashad (Shahnoshi 2007). Then, some qualified and domestic sociologists and urban planners were consulted as to the selection of the districts.

The validity and reliability of the data gathering and their analysis must be examined in both adopted methods, i.e. the quantitative method through interview by questionnaire, and the qualitative method with observation through the collection of photos and notes.

In organizing the questionnaire, the sense of community was adapted and patterned from known and valid scales proposed by environmental psychologists. In addition, other questions were designed based on the literature review and pilot study.

The pilot test was conducted through 20 interviews (by questionnaire) with some acquaintances and volunteers in the study areas. This step was performed with extra attention to the quality of the interviewees' responses and additionally, with more discussion for deeper examination about the content of the questions.

The second step of the pilot test was carried out in Syed-Razi neighborhood by filling out 50 questionnaires. This task was executed for understanding the quality of questions, unperceived questions for interviewees, and also for testing the reliability of *Likert Scales* of the personality, sense of community and fulfillment of needs through measuring "*Cronbach's α* "⁴⁵. Additionally, for some scales like sense of community correlation item⁴⁶—corrected item— was applied too. The pilot study led us to make some modifications to the questionnaire.

The last part in the adjustment of the questionnaire was asking the opinion of domestic sociologists and urban planners.

Egon Guba (1981: 80-85) points out the subsets of credibility, transferability, and conformability as the quality standards for naturalistic inquiry and qualitative research. In this study, following the guidelines by Guba for attaining credibility and conformability, the researcher attempted to triangulate the data, i.e. use multiple sources of data collection. Accordingly, the data were gathered through interactive and non- interactive techniques of qualitative data collection —participation and non participation of researcher in context of the study— with observation and taking notes and photos.

⁴⁵ *Cronbach's α* measures how well a set of items measures a single unidimensional latent construct. In fact, it indicates acceptance of internal consistency or reliability of gathering some values for formation a new construct. The range of *Cronbach's α* is between 0-1. However, the acceptable rate of *Cronbach's α* has been chosen differently in different researches (Huck 2008: 77-80). In this study, the acceptable rate of α selects 0.7 and more.

⁴⁶ The correlation of each item indicates the reliability and internal consistency of that item in measuring of the scale.

Chapter 5: Results

The data for this study was collected from visual surveys and observations as well as interviews in 7 neighborhoods from the first of May to the end of August 2007.

This chapter consists of 3 major sections based on the divisions of upper, middle, and lower social class status in these neighborhoods. The results will be presented and compared in terms of the two main parts of physical and social aspects of these neighborhoods in the 3 classes. In addition a general part at the beginning of every section will be presented, dealing with general findings and controlled variables such as the economic status, cultural aspects of the neighborhood, length of residence in the neighborhood, and social personality of the respondents.

5.1 High Income Residential Areas: *Jami and Farhad Neighborhoods*

These neighborhoods are located in one of the upper class districts of Mashad with some differences in their physical configurations. Figure 14 shows the socio-economic status (SES) of households of these two neighborhoods.

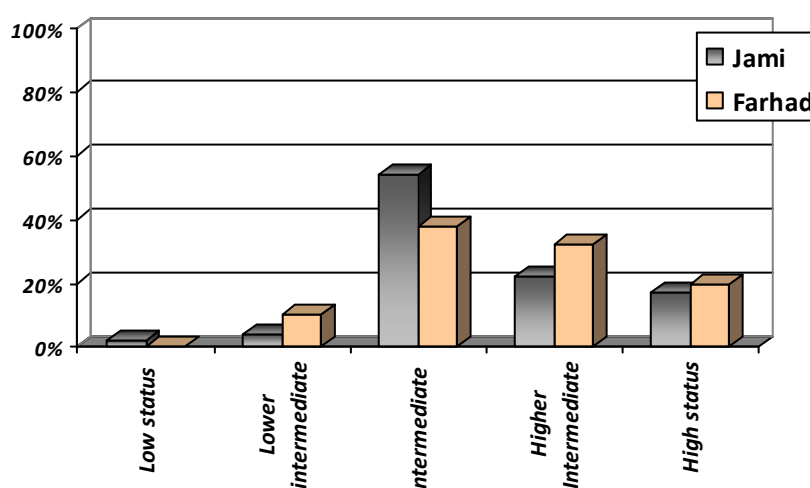


Figure14: The Socio-Economic Status of households of Jami (n= 100)⁴⁷ and Farhad (n=100).

The means for SES⁴⁸ in Jami and Farhad were 3.48 and 3.61, respectively. Also, the median of SES was 4 (upper intermediate) in both of these areas. Based on the *Independent Samples T-Test* for comparing two means, there was not any significant difference between the indicators of SES in these two areas.

SES in this research was measured by three indicators of occupation and education of head of households, and also area of residential units –instead of family income. Family income was not considered due to the probability that interviewees may not be willing to tell the truth. The data on education, occupations, and area of residential units were categorized, recoded, and computed according to statistical procedures for the 5 ranges of low, lower intermediate, intermediate, upper intermediate, and high status.

⁴⁷ “n” shows the number of interviewed households.

⁴⁸ In this study, almost every variable has been examined in a five-point scale. Therefore, the mean of SES can change from 1 to 5 (low to high status).

Other indicators employed for asking respondents for more clarification on the economic status of these neighborhoods included:

(1) The area of lots and residential units:

In Jami, the average area of residential lots was 430 m² and the average area of residential units was 215 m². These amounts in Farhad were 330 m² and 210 m² for averages of residential lots and units, respectively;

(2) The ownership ratio of houses and apartments:

This ratio in Jami was 74 percent owner against 26 percent tenant, and in Farhad was 72 percent owner against 28 percent tenant;

(3) Owning a car and its brand & model:

In Jami, 73.7 percent of families had a car and in Farhad 82 percent.

The average brand and quality of cars—with 5 ranges from low to high model— was between 3 and 4 (mean 3.6) in Jami and 4 in Farhad. These rates measured by open-ended question and classification and recoding models on a five-point scale from low model (1) to high model (5).

(4) Type of children school:

In Jami 62.5 percent of children went to private schools and the rest went to public schools. This rate, in Farhad was 53.85 for private schools and the remainder for public schools.

Some cultural aspects like ethnicity, education level, and occupation of the head of interviewed households were controlled in addition to the main control in the selection of the study areas (see chapter 4).

The ethnic division of the interviewed households of Jami neighborhood comprised 82 percent Mashadi, 10 percent from within the province and 8 percent from other Iranian provinces. In Farhad the breakdown was as follows: 71 percent Mashadi, 22 percent from within the province and 7 percent from other provinces. Additionally, about 4 percent of both neighborhoods' inhabitants had migrated to Mashad less than 10 years ago.

The educational and occupational status of respondents in these two areas was very similar. Also, based on the *Independent Sample T-Test*, there was not any significant difference between the education and occupation of head of households in these two neighborhoods.

The average length of residence of the interviewees in Jami and Farhad was 13.2 and 15.8 years respectively. Also, more than 77 percent of interviewed households in both neighborhoods had resided there for more than 5 years.

As mentioned before, the general *social personality* was measured during the field work in order to control individual differences in social tendency⁴⁹ of respondents. This control was made by using the *Likert Scale* questions through which the researcher asked the opinion of residents about some relevant statements (5 items). Response alternatives for all items had 5

⁴⁹ Understanding about the whole of social tendency of respondents such as: introversion, extroversion, misanthropy, and sociability.

scales from strongly disagree (with 1 score) to strongly agree (with 5 score) (see chapter 4 and appendix B–question number 43).

The results of social personality in Jami and Farhad are indicated in Table 3. This table refers to the items of this indicator, the reliability of measurement of them, and also the mean of social personality in these neighborhoods. The reliability of shaping of social personality indicator has been calculated by corrected item or total correlations among the other items as well as Cronbach's α . As it turns out, all items have a high correlation with the other items. Additionally, the rate of α in both neighborhoods had an acceptable amount: 0.78 in Jami and 0.80 in Farhad.

Since the response alternatives for all items were (1) strongly disagree, (2) disagree, (3) neither agree/nor disagree, (4) agree, (5) strongly agree, and also the order of every statement was positively keyed; therefore, the computed means demonstrate the situation of social personality in 5 ranges of (1) low, (2) lower intermediate, (3) intermediate, (4) upper intermediate, and (5) high.

The mean of social personality in Jami and Farhad was 3.12 and 2.94, respectively. Also, there was not any significant difference between the means of social personality of these neighborhoods according to *Independent samples T-Test* method for comparing means. Therefore, the collected data was suitable from the viewpoint of social personality of respondents in these neighborhoods.

statements		Reliability				Mean	
		Corrected item		Cronbach's α			
		J	F	J	F	J	F
Social Personality	• Friends and acquaintances are part of my everyday life.	,65	,71				
	• I quickly communicate and fit in with others.	,49	,47				
	• I ask my friends' opinions on different issues and problems.	,57	,63	,78	,80	3,12	2.94
	• My friends and I pay visits or contact each other frequently.	,64	,45				
	• If I need advice about something, I could go to some of my friends.	,46	,68				

Table 3: The indicator of Social Personality and its items in Jami (J) and Farhad (F). Response alternatives for all items were on a five-point scale ranging from strongly disagree (1) to strongly agree (5).

The three main reasons for the movement of inhabitants to Jami were expressed in a descending order: Good location because of aesthetics, social fabric, and conveniences with 45, 45, and 42 percent positive agreement. These reasons in Farhad were good location because of social fabric, conveniences and because family lived there, with 40, 25 and 25 percent positive agreement.

In both of these areas, most respondents identified the name of their neighborhoods with the name of the neighborhoods' main streets (in Jami 62 and in Farhad 66 percent) and the others identified with the name of their district.

The last findings in this part refer to the existence and condition of social groups of residents for dealing with the neighborhood's problems. There were not any groups and social clubs in either of these areas that people could attend to deal with their neighborhood's issues. In Jami

about 7 percent of apartment buildings had communities for solving their building's problems.

5.1.1 Physical Aspects

In this part an attempt is made to present the survey's results of the physical aspects of these neighborhoods. These findings consist of features of physical organization and construction of the neighborhoods, neighborhoodscape, and also fulfillment of physical needs. The factors and indicators which were focused on in this section are shown in Appendix A.

5.1.1.1 Layout and Organization

The situation of boundaries and territories⁵⁰, texture, neighborhoodscape, and also the neighborhood's components are the main factors that will be discussed in this part. No clearly defined boundaries for the neighborhoods of Jami and Farhad were discovered. Most respondents in these areas identified the name of their neighborhood with the name of the neighborhood's main streets (in Jami 63 and in Farhad 66 percent); and the others identified with the name of their district. So, they recognized their neighborhood's scope through a subjective limit based loosely around the neighborhood's main streets, or to a larger extent as a part of their district.

5.1.1.1.1 Neighborhood's Components

The major components of Jami neighborhood besides the houses are a park, a private girls' high school, and stores such as grocery stores, a fruit and vegetable shop, real estate agencies, etc. In Figure 15, the land use map of Jami is presented.

In addition to the houses, there are only a few stores and shops inside the Farhad neighborhood. These stores are seemingly randomly distributed across the neighborhood. Meanwhile, some of houses have been temporarily changed their usages to be private schools and educational institutes. The users of these institutes have usually come from outside the neighborhood. In Figure 16, the land use map of Farhad neighborhood is shown.

5.1.1.1.2 Texture

Three factors of density, access system, and composition⁵¹ indicate the external texture of a settlement by which we may judge the performance of a settlement (Lynch 1981, p.274).

The composition system in this research comprises the quality of construction and organization of mass and space of houses and other activities in the neighborhood (spatial composition), access system composition, and also density composition.

In Mashad, as in other cities of Iran, in most residential areas the lots of houses and the residential complexes have been shaped along streets, with tight row lots and clear boundaries. Every house includes the two elements of building and yard, and usually the ratio of mass to space is 60 to 40 percent. This combination is known as the "north- south" pattern, with two major kinds of houses: the "northern house", with a front yard and the "southern house", with a back yard (see Figure 17).⁵²

⁵⁰ Territorial hierarchy will be presented in section on Texture.

⁵¹ This factor has been named grain—combination of different elements of a settlement—by Lynch.

⁵² Sometimes this pattern forms with east-west divisions and with beside yards— the yard and building shape alongside the street.



LEGEND

- Residential
- Green space
- Commercial
- Retail Store
- Fruit and Vegetable Store
- Bakery
- Butchery
- Cafe Shop
- Fast Food
- Stationery
- Public School
- Private School
- Educational Institute Religious
- Industrial
- Services
- Hairdresser's Salon for Women
- Hairdresser's Salon for Men
- Taxi Services
- Real Estate Agency
- Tailoring Shop
- Cafe Net
- Health Services

Figure 15: The Land Use Map of Jami Neighborhood

Basic Source: Iranian Survey Organization 2005, Other Changes by Author

Sc 1:2000

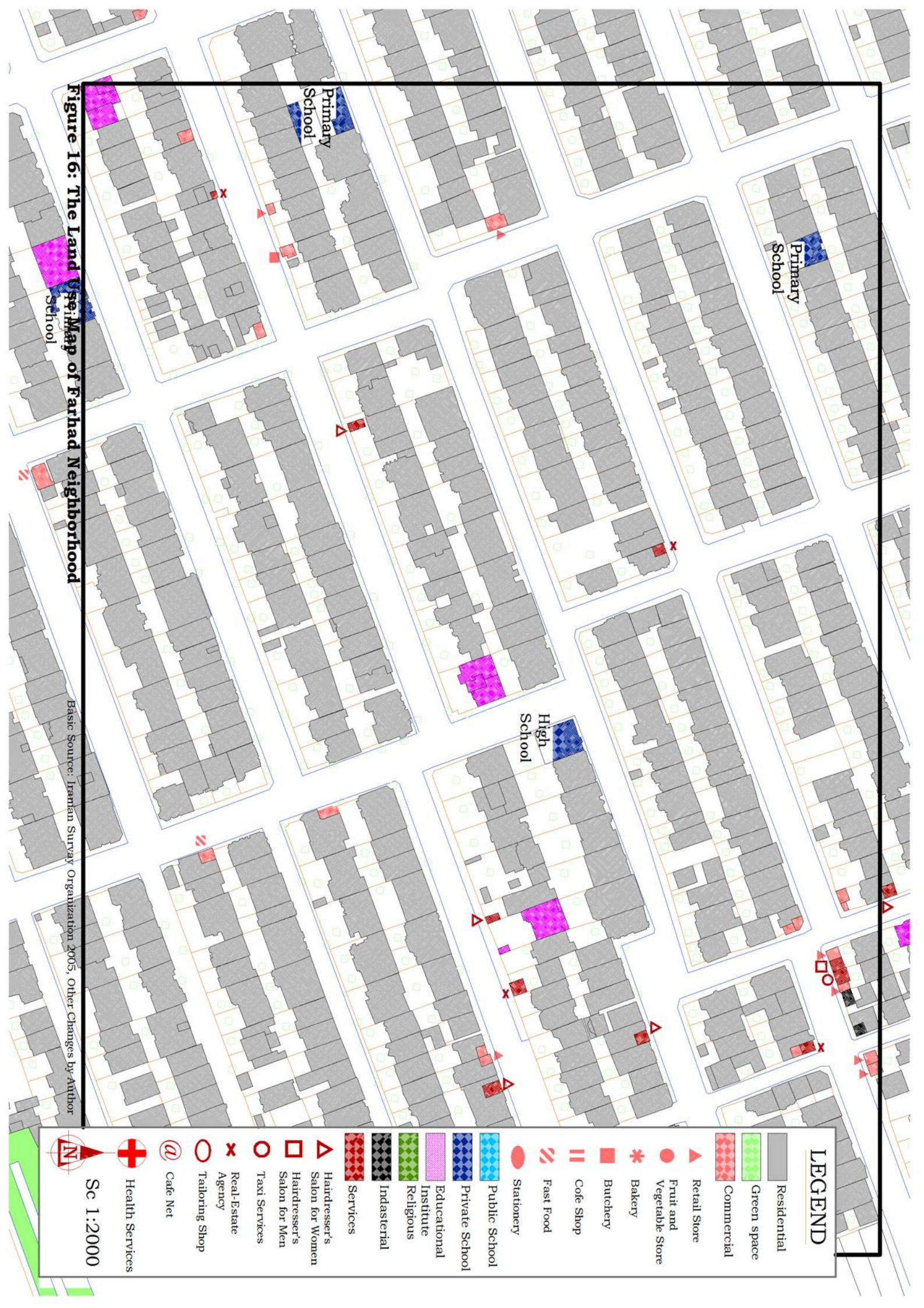


Figure 16: The Land Use Map of Farhad Neighborhood

Basic Source: Iranian Survey Organization 2005, Other Changes by Author

LEGEND

- Residential
- Green space
- Commercial
- Retail Store
- Fruit and Vegetable Store
- Bakery
- Butchery
- Cafe Shop
- Fast Food
- Stationary
- Public School
- Private School
- Educational Institute
- Religious
- Industrial
- Services
- Hairdresser's Salon for Women
- Hairdresser's Salon for Men
- Taxi Services
- Real-Estate Agency
- Tailoring Shop
- Cafe Net
- Health Services

Sc 1:2000



Figure 17: The major combination pattern of houses in Iranian cities. The ratio of mass to space is 60 to 40 percent in every lot. Source: Iranian Survey Organization 2005

In Jami, the composition of houses follows this pattern, with only one slight difference on some plots. There is an open space in front of some south houses. These open spaces work as a filter between the public space and the private space –semi private– in the entrances to these kinds of houses (see Figure 15). Access in Jami has been formed according to the grid street pattern with some cul-de-sacs. The sidewalk system in this neighborhood has received more attention in comparison to other neighborhoods of Mashad. The cul-de-sacs are closed to vehicle traffic, but they are open for pedestrians. This increases physical safety on the sidewalks of Jami. These cul-de-sacs have shaped a special system of privacy and territory in some parts of the neighborhood; however, the absence of this pattern in other parts of this neighborhood weakens its positive effect.

In Farhad, the houses' composition completely follows the aforementioned composition pattern in Mashad (60 percent mass and 40 percent space in every lot). The composition of access has been based on grid pattern with straight and wide streets. The sidewalks in this neighborhood flank the streets in front of the houses. Since most of these streets have almost the same width, the hierarchy of access is weak in this neighborhood –most of these streets are sub-collectors. Consequently, the system of access in this neighborhood has given priority to vehicle movements (see Figure 16).

Moving on to the situation of territorial hierarchy in these neighborhoods, there is a variety of territories from public to private in Jami: Public (collector street), Semi Public (park and center of neighborhood, sub-collector streets and access streets), Semi Private-Semi Public (cul-de-sacs), Semi Private (front and back yards in apartment buildings) and Private (houses and apartments). In Farhad neighborhood, because of the existence of the streets usually of the same width, the monotony of territory applies to the entire neighborhood. The variety of territorial hierarchy in Farhad consists of Public (collector street), Semi Public (sub-collector streets), and Private (houses and apartments).

The factor of density, shown here with such indicators as number of residential units in a building, number of stories, the average area of residential units and lots, construction to lot ratio per story, FSI⁵³ indicator, population density with indicators of household size, area of residential unit per person, and number of persons per hectare⁵⁴. Since population density is more relevant to social crowding, it is analyzed as a crowding indicator with reference to the social aspects of the neighborhoods.

In Table 4, the situation of density is shown for Jami and Farhad neighborhoods. These indicators can clarify the situation of lot and unit density as well as population density.

⁵³ Floor Space Index (FSI) is the ratio of total floor area of buildings to lots

⁵⁴ Per hectare of lots

The average area of residential lot of Mashad like other cities of Iran varies in neighborhoods of different income level. The average lot area is 430 m² in Jami and 330 m² in Farhad. The density of units in a building according to the number of residential units within a lot is 3.6 units in Jami and 2.7 units in Farhad. On the other hand, the average area of a residential unit is 215m² in Jami and 210m² in Farhad. Additionally, the average percentage of lot area covered by buildings is about 58 percent in Jami and about 61 percent in Farhad.

While according to the detail planning of these two neighborhoods the permitted number of stories is 4 with a density of 2.4 (FSI), the mean for number of stories is 2.7 in both these neighborhoods. Moreover, the FSI indicator in Jami and Farhad is 1.6 and 1.66. Today, because of the fast growth of land prices, there is a special tendency to build buildings higher than the 4 floors stipulated in Mashad's detail plans in these neighborhoods. This occurs, in these areas as in most other parts of the Iranian cities, because of the municipalities' financial problems and their permission to build 1-2 extra stories in return for remuneration. This issue brings about some problems such as unharmonious facades, shortages of some services, accessibility problems, etc.

<i>Neighborhood</i>	No. of residential units in a building (Mean)	Number of stories (Mean)	Area of residential unit (Mean) (m ²)	Area of Lot (Mean) (m ²)	Construction to lot ratio in a story (%)	FSI	Household size	Area of residential unit per person (m ²)	No. of persons per hectare
J	3.6	2.7	215	430	58	1.6	3.7	58.4	311
F	2.7	2.7	210	330	61	1.66	3.7	57.2	299

Table 4: Indicators of Density in two neighborhoods of Jami (J) and Farhad (F).

5.1.1.1.3 Neighborhoodscape

Due to the curved streets, cul-de-sacs, the park and green spaces, diversity of panorama views, and also good quality of facades, the neighborhoodscape in Jami is relatively good (Figure 18).



Figure 18: The situation of neighborhoodscape in Jami.

In Farhad, the straight streets and lack of open spaces have led to monotony overshadowing the neighborhoodscape. However, the good quality of buildings and their facades –especially new constructions– have somewhat lessened this impression (Figure 19).



Figure19: The situation of neighborhoodscape in Farhad.

The houses in these areas often meet modern standards - especially the new houses - and their relatively good quality is one of the reasons that both areas have been identified as two nice residential neighborhoods by Mashad’s residents. As stated earlier, irregular “selling” of extra building rights allowing the developers to build 1-2 extra stories by Mashad municipality has brought about disorder in the street elevations and neighborhoodsapes (Figure 20).



Figure 20: While new apartments in Jami (J) and Farhad (F) resulted in modernized neighborhoodsapes, the irregular density brings about some disorder in skyline of these areas.

The aesthetic condition in these neighborhoods, as one of the indicators of fulfillment of needs, was examined through interviews and asking for the opinion of inhabitants about the 5 items below with 5 scales from serious problem (1 score) to completely appropriate (5 score). The aesthetic indicator was calculated by computing these 5 items with a reliability index of $\alpha=0.87$. The opinion of residents on all of these issues was better in Jami neighborhood (Table 5).

Neighborhood	Deteriorated Buildings Modern and Old	Facades of Buildings	Overall layout of Neighborhood	Street layout	Order	Indicator of Aesthetic Appeal
Jami	3,78	4,10	4,14	4,03	4,22	4,17
Farhad	3,31	3,81	3,92	3,94	3,89	3,89

Table 5: The statistical means for Aesthetic Appeal and its items in two neighborhoods of Jami and Farhad. This evaluation was done on the basis of a five-point scale ranging from serious problem (1) to completely appropriate (5).

Additionally, according to *Independent samples T-test* analysis for comparing means, a significant difference (less than 0.01) existed among all items of aesthetic appeal in these neighborhoods, except for street layout. Therefore, the indicator of aesthetic appeal had a significant (sig. =0.004) difference between these two areas.

5.1.1.2 Fulfillment of Physical Needs

The fulfillment of needs here was examined by indicators of housing, services and conveniences, overall layout and organization of neighborhood, aesthetic appeal, and physical safety.

The situation of houses in terms of the rate of fulfillment of needs was examined by an open-ended question about the major problems of houses, the number of bedrooms and ownership of a private bedroom for every member of family as one of the known main problems of houses, and also a general question about the rate of houses' fulfillment of needs.

In order to present the respondents' answers about their *major problem of houses* –based on the open-ended question – the problems have been classified into 7 categories: layout, age, number of bedrooms, size, city services (kind of services that usually the city gives to houses such as electricity, water, and so on), social problems (social problems inside the housing complex), and rental problems.

Although the average age of the houses was about 19 years in Jami and 20 years in Farhad, in both neighborhoods the most important problem with houses was shown to be age – 45 percent frequency in Jami and 35 percent in Farhad. The other most significant problems in both of these areas were the house's layout with 20 and 18 percent frequency in Jami and Farhad respectively, and also social problems with 25 percent in Jami and 10 percent frequency in Farhad.

Additionally, in Jami 57 percent and in Farhad 70 percent of households owned a private bedroom for every member of family, and a major problem with this issue was rarely expressed.

The average rate of houses' fulfillment of needs on a five-point scale ranging from completely dissatisfied (1) to completely satisfied (5) in Jami and Farhad was 3.80 (median=4), and 4.16 (median=4), respectively.

The other aforementioned indicators of fulfillment of needs –except physical safety– were surveyed through interviews asking for the opinion of residents about indicator items in on a five-point scale ranging from serious problem (1) to completely appropriate (5). Then, the

items of every indicator were recoded for attaining the status of the indicator on a five-point scale ranging: (1) low status, (2) lower intermediate status, (3) intermediate status, (4) upper intermediate status, and (5) high status (see Figure 21).

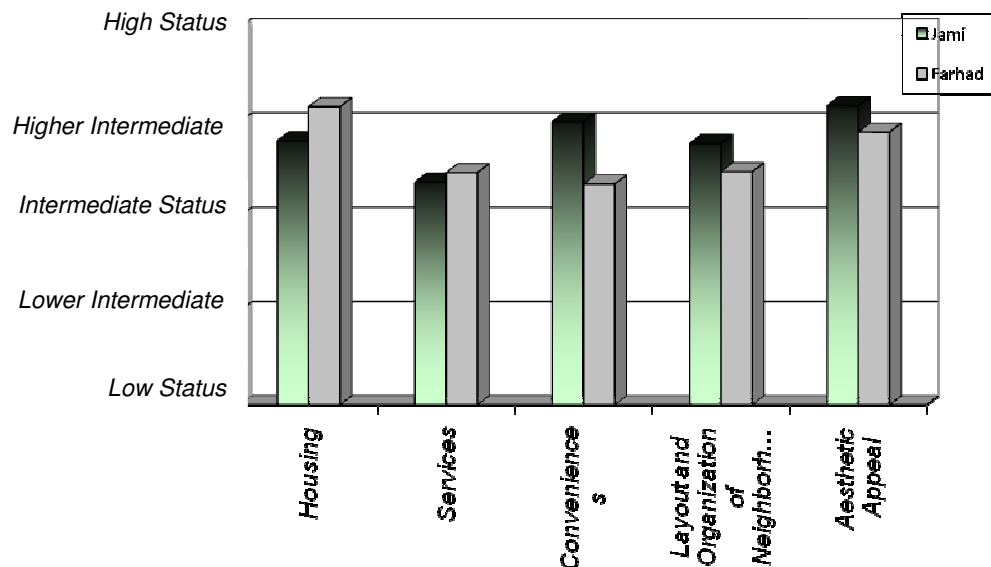


Figure 21: The status of Fulfillment of Physical Needs in Jami and Farhad neighborhoods.

Additionally, Table 6 indicates the opinion of respondents shown through the mean of every indicator's items of Services, Conveniences, and Layout and Organization of Neighborhood (the indicator of Aesthetic Appeal and its items were examined in the section on Neighborhoodscape). The score of every indicator was obtained from computing the average of the score of its items. The reliability indices for Services, Conveniences, and Layout and Organization of Neighborhood were $\alpha = 0.70, 0.71, \text{ and } 0.85$, respectively.

The statistical means for these indicators were 3.36, 4 and 3.77 in Jami and 3.46, 3.34, and 3.47 in Farhad for services, conveniences, and layout and organization of neighborhood respectively.

Based on *Independent samples T-test* for comparing means, there was a significant difference between the indicator of Conveniences (sig. =0.000), Layout and Organization (sig. =0.005), and also Housing (sig. =0.001) in these two neighborhoods. Based on the opinion of respondents, the situations of Conveniences, and Layout and Organization were better in Jami; and the situation of Housing was better in Farhad.

Meanwhile, based on the observations, the overall situation of Jami's layout was better than Farhad because of the existence of its open spaces and access system, conveniences and also neighborhoodscape. On the other hand, although there were no pronounced differences in the quality of houses' facades based on observations in these areas, the opinion of respondents showed that the situation within the houses in Farhad was better than in Jami in terms of fulfillment of needs.

Additionally, the relative restrictions on vehicle movement and speed by overall layout and cul-de-sacs in Jami have brought about an increase in the rate of physical safety in this neighborhood. In Farhad, the grid texture with straight streets of the same width and the absence of vehicle movement control, as well as an absence of any appropriate spaces for

other activities of residents, have led to the shaping of a somewhat physically unsafe environment, especially for pedestrians and children.

<i>Variables</i>	<i>Neighborhood</i>	
	Jami	Farhad
Trash and waste removal	3,05	3,68
Street requires maintenance	2,94	3,46
Street cleaning	3,36	3,74
Street lighting	3,35	3,63
Distance from public transportation Taxi	3,52	2,82
Distance from to public transportation Bus	3,52	2,92
Indicator of Services	3,36	3,46
Park and Open spaces	4,28	2,43
Distance from to health services	3,60	2,97
Distance from to stores	3,90	3,64
Quality of stores	3,94	3,39
Distance to schools	3,88	3,64
Quality of schools	3,93	3,85
Entertainment	3,41	2,51
Cultural opportunities and library	3,22	2,97
Religious center (mosque, Hosseinie,etc)	3,65	3,76
Indicator of Convenience	4	3,34
Accessibility	3,87	3,70
Areas of lots and residential units	3,94	3,74
Form and combination of houses	3,88	3,82
Size of Residential Block	3,97	3,84
Adequate Sidewalks for pedestrians	3,62	3,74
Population growth and increased density	3,39	3,38
Density of Buildings	3,31	3,21
Renovating the present house	3,13	3,14
Quality of Buildings	3,72	3,67
Parking space	3,15	3,12
Traffic congestion	3,07	3,08
Street condition	3,54	3,28
Green spaces	4,24	2,68
Indicator of Layout and Organization of neighborhood	3,77	3,47

Table 6: The statistical means for indicators of Services, Conveniences, Layout and Organization of Neighborhood and their items in two neighborhoods of Jami and Farhad. This evaluation was done on the basis of a five-point scale ranging from serious problem (1) to completely appropriate (5).

5.1.2 Social Aspects

This part comprises the results of social aspects of these neighborhoods. These findings consist of activity variations of residents and behavior settings, social safety, and also the sense of community of inhabitants living in these areas.

5.1.2.1 Activity Variations and Behavior Settings

The variety of activities of inhabitants with different age ranges and genders, as well as social interaction, privacy and crowding, accompanied by the most important social behavior settings of the residents in these neighborhoods encompass the data presented here.

5.1.2.1.1 Residents' Activities

Residents' activities were surveyed in this study through quantitative data on different age ranges and genders as well as through qualitative data by taking photos and sometimes notes for examination of behavior settings. The age of the residents was classified into 6 different ranges, i.e. preschool, between 7 and 14, 15 and 18 (teenager), 19 and 26, 27 and 60 years (adults), and elderly.

Two main questions about the residents' activities have been asked in this study:

(1) The location of work and school place in connection with the neighborhood; and (2) Leisure time with three questions of where, which activities, and with whom (See question 45 in the questionnaire –in Appendix B). These questions can clarify the situation of inhabitants' activities and, to a large extent, their network of connections inside and outside the neighborhood.

The abovementioned collected data from these neighborhoods are presented in Table C- 2 (see Appendix C). This data indicates that the location of schools for most children in both these areas was close to the neighborhood. However, this amount increased for girls and with increasing age. The location of work for three age ranges of 19-26, adults, and elderly in both neighborhoods was far from the neighborhood.

Residents of these neighborhoods were spending most of their leisure time at home accompanied by other households. The second place for passing spare time was expressed by interviewees outside the neighborhoods –in most of stages in both areas and for most of residents. However, inside Jami neighborhood, there was an important location for spare time especially for the people under the age of 19 and for the elderly.

The last column of Table C-2 shows “with whom” residents were spending their leisure time. The highest rate in both neighborhoods and genders was “with members of households”. The second important group that residents were spending their leisure times with was the network of friends and acquaintances outside the neighborhoods. Also, the rate for “accompanied by neighbors,” in Farhad was almost zero (except for the age range of 7-14 for males). Although spending leisure time accompanied by neighbors was more popular in Jami, it was not high either. There was a weak connection with neighbors for males in the three age ranges of 7-14, 15-18, and elderly, and this was true for females of all age ranges except for the age range 7-14.

The popular activities and hobbies which were selected by each life stage and each gender in both neighborhoods were almost identical. Most of these activities take place at home.

Spending leisure time watching TV was highlighted as one of the most important hobbies for all groups. Additionally, PC (personal computer) was mentioned as an important hobby for both genders under 26 years old (except for the female age range of 14-18).

According to several observations and referring to notes taken of residents' responses to informal questions, no social activities such as children's play, neighborhood gatherings, and social interaction were observed within the outdoor spaces of the Farhad neighborhood. Most residents, because of absence of facilities like open spaces, parks, playgrounds and lack of physical safety and perhaps social safety and so on, usually preferred to spend their spare time at home or outside the neighborhood. Moreover, they wanted their children to stay home and use entertain themselves inside the house or, alternatively, they were sent to clubs, gyms or extracurricular courses such as foreign languages, music, computer, and so on. The best leisure opportunity space for children's play was the yard, particularly when the house belonged to the family. Furthermore, a lack of stores and shops in this neighborhood resulted in the lowest rate of contact among neighbors –only 26 percent of respondents admitted obtaining their essentials within the neighborhood. Therefore, no special social activity setting was observed in Farhad neighborhood.

In Jami a better situation was recorded. Although the social activities in this neighborhood were not particularly high, the use of open spaces and neighborhood center by residents resulted in more contact occurring among them. Furthermore, the existence of some stores in the center of the neighborhood had resulted in the formation of a social center –62 percent of respondents obtained their essentials from inside the neighborhood (Figure 22).



Figure22: Existence of some facilities in center of Jami led to further contacts among its residents.

In this neighborhood, like in Farhad, parents preferred their children –because of concerns about problems with safety, social connections, and for promoting their education– to use private clubs and gyms or take some additional courses during their leisure time.

The residents of both neighborhoods had a special tendency to have most of their social connections with their family and friends outside of the neighborhoods. One of the respondents in Jami even took pride in knowing none of his neighbors. In other words, they preferred more freedom in their relationships and selection of the partners they mixed with.

5.1.2.1.2 Social Interaction

The most important variables examined under title of social interaction in this study are as follows: the rate of social connection inside and outside neighborhood; indicator of social

interaction with 4 items; the quality and kind of neighbors' interactions and settings of social interactions in the neighborhood. Additionally, the qualitative data collection will be integrated with data gathered from observations.

Regarding the place of occurrence of inhabitants' social connections, 80 percent of interviewees in Jami expressed that their social connections occurred in their neighborhood. The amount for Farhad was 28 percent.

The indicator of social interaction was shaped and computed by an average of 4 items of rate of social connection occurrence inside the neighborhood, number of known neighbors⁵⁵, rate of relationship intensity with neighbors, and rate of getting together with neighbors. Every item was measured on a five-point scale (see Appendix B, questions of social interactions). The reliability of measurement of this indicator through these 5 items was $\alpha=0.73$

Table 7 presents the statistical means for the social interaction indicator and its relevant items in these neighborhoods. The mean for every item and also the overall mean for the indicator of social interaction in Jami was more than Farhad. Based on the *Independent samples T-test* for comparing means, there was a significant difference ($\text{sig.}=0.001$) between these neighborhoods in terms of social interaction indices.

Neighborhood	Rate of social connection occurrence inside the neighborhood	Number of known neighbors	Rate of relationship intensity with neighbors	Rate of gathering with neighbors	Indicator of Social Interaction
Jami	3,01	3,15	2,93	3,05	3,03
Farhad	2,52	2,92	2,86	2,96	2,81

Table 7: The statistical means for indicator of Social Interaction and its 4 items in Jami and Farhad. Every item was asked in a five-point scale.

The quality of social interactions in these neighborhoods was examined by asking interviewees about the type of their social connection with neighbors. These kinds were asked in five categories: "greeting and asking about health issues", "ordinary chat", "small talk and discussing problems", "talking about individual problems and asking for others' opinions", "close and intimate connections" (see Appendix B, social interaction part).

In Jami, the "greeting and asking about health" with 72.9 percent frequency was the most important kind of social interaction. Additionally, "ordinary chat", and "small talk and discussing problems", with 13.1, and 12.1 percent respectively, were the other important sorts of social connections of inhabitants. In Farhad, "greeting and asking about health" and "ordinary chat" with 71 and 20 percent were the most significant kinds of social connections.

Based on interview and questionnaire data, the most important settings of social interaction in outdoor spaces in both neighborhoods were in front of houses, in streets, and on sidewalks. Meanwhile the Park in Jami was an important location for these interactions. On the other hand, the back and front yards were significant places for social connections, especially for apartment houses.

⁵⁵ The number of known neighbors was asked in five ranges: None, 1-3 family, 4-6, 7-10, and More (see Appendix B, question number 29)

Also, based on several observations from these areas, in Jami, the park complex and the center of the neighborhood with its stores was a significant place as an interaction setting for neighbors, especially for teenagers and youths (Figure 23). In Farhad, the interaction settings were only rarely observed in front of the houses (Figure 23).



Figure 23: Interaction settings in Jami (J) and Farhad (F). The more proper spaces in Jami led to improving the probability of social interactions.



5.1.2.1.3 Privacy and Crowding

As stated in the literature review, the notions of privacy, territory, and crowding are closely linked to the use of environment in the process of social interaction. Privacy as the ability to control and avoid unwanted interaction with other people (Rapoport 1977: 289, Lang 1987: 145) and as a main core for linking concepts of territory and crowding (Altman 1975: 5) was examined in this study.

While privacy was measured with five items (see the table below), territory was observed and discussed by territorial hierarchy under the rubric “Physical Aspects: Texture”. Also, crowding was examined by using the opinion of the inhabitants and also by measuring population density in these neighborhoods. Additionally, observations and notes and photos will be employed to support the survey data.

The privacy condition in these neighborhoods, as one of the indicators of fulfillment of needs, was examined through interviews by asking the opinion of residents through 5 items (see the following table) with 5 ranges from serious problem (1) to completely appropriate (5). The indicator of privacy was computed with these 5 items and with reliability of $\alpha = 0.70$.

The privacy condition in Jami, based on the findings from these five items, was better than Farhad in most cases (Table 8). Also, according to *Independent samples T-test* for comparing the two means, the indicator of privacy showed a significant difference (sig. = 0.042) between these neighborhoods.

Neighborhood	Noise of the street	Noise of the neighbors	Interference neighbors	Crowding	Visual privacy (Eshraf)	Indicator of Privacy
Jami	3,29	3,83	3,94	3,52	3,64	3,69
Farhad	2,73	3,73	3,96	3,55	3,31	3,44

Table 8: The statistical means for Indicator of Privacy and its items. Every item was asked in a five-point scale ranging from serious problem (1) to completely appropriate (2).

The population density of these neighborhoods are presented here as an indicator of crowding. The population density, in this study, has been examined based on 3 items of the area of residence per person, number of persons per hectare and size of the household.

In Jami the number of persons per hectare of lots was 311 persons, and the average area of residence was 58.4 m² per person. These rates in Farhad were 299 persons for lot and 57.2 m² for residence per person. Also, the Household size in both of these neighborhoods was 3.7 persons.

The opinion of respondents in both neighborhoods about the situation of crowding was similar. The mean of this indicator, with 5 ranges from serious problem (1 score) to completely appropriate (5 score), was 3.52 and 3.55 in Jami and Farhad, respectively.

According to many observations from these neighborhoods, the condition of privacy and crowding was at an appropriate level in both areas. However, because of the existence of proper spaces and also existence of more accurate hierarchy of physical territory in Jami the situation of privacy was better than that in Farhad. Meanwhile, the situation of crowding was similar in both neighborhoods.

5.1.2.2 Social Safety

The situation of social safety as an essential need of residents was examined in this study. The indicator of social safety was measured by 5 items (see Table 9) and with a 5 point scale, ranging from serious problem (1) to completely appropriate (5). The reliability of measurement of this indicator through these 5 items was $\alpha=0.74$.

Based on *Independent samples T-test* the indicator of social safety did not show a significant difference between the neighborhoods of Jami and Farhad.

Neighborhood	Police protection	Burglaries	Ruffian and Violence	Drug abuse	Neighbor's control	Indicator of Social Safety
Jami	3,33	2,77	3,34	3,41	3,72	3,31
Farhad	3,33	3,14	3,43	3,71	3,41	3,40

Table 9: The statistical means for Indicator of Social Safety and its items. Every item was asked in a five-point scale ranges from serious problem (1) to completely appropriate.

5.1.2.3 Sense of Community

Sense of community in this research was adopted from environmental psychology with 4 indicators of “Belonging and Attachment”, “Shared Values and Cooperation”, “Influence”, “Emotional Connections and Ties”. Every one of these indicators and also sense of community was measured on a five-point *Likert Scale* by asking the opinion of residents about relevant issues (items). Response alternatives for all items had ranged from strongly disagree (with 1 score) to strongly agree (with 5 score) (see literature review and Appendix B–question number 43).

The results of sense of community in Jami and Farhad are indicated in Table 10. It shows the reliability of measurement, the means, and also compares means of sense of community and its indicators in these neighborhoods through *Independent samples T-Test*.

The reliability of the measurement of sense of community has been calculated by corrected item or total correlations among the other items of every indicator on this factor as well as Cronbach’s α . As it turns out (see Table 10), all items have a high level of correlation; also the rate of α in both neighborhoods is high. The rate for sense of community is 0.89 in both Jami and Farhad neighborhoods.

Since the response alternatives for all items were (1) strongly disagree, (2) disagree, (3) neither agree/nor disagree, (4) agree, (5) strongly agree, and also the order of every statement was positively keyed, the computed means indicated the situation of sense of community and its indicators in 5 ranges of (1) low, (2) lower intermediate, (3) intermediate, (4) upper intermediate, and (5) high.

The statistical mean for “Belonging and Attachment”, “Shared Values and Cooperation”, “Influence”, “Emotional Connections and Ties”, and also “Sense of Community” were 4.02, 3.32, 3.45, 3.15, 3.44 in Jami and 3.83, 3.23, 3.06, 2.96, 3.25 in Farhad. The mean for the status of sense of community and its indicators in both neighborhoods were between intermediate and upper intermediate – closer to intermediate, except for the indicator of Belonging and Attachment. As can be seen in Table 10, the means of sense of community and its indicators for Jami were higher. However, based on *Independent samples T-test* only indicators of “Belonging and Attachment” and “Influence” in addition to “Sense of Community” showed significant differences between these two neighborhoods.

		Reliability:				Mean		Compare Mean Between Two Neigh. T-Test	
		corrected item		Cronbach's α					
Sense of Community	Statements	J	F	J	F	J	F	Sig= ,010	
	• I think my neighborhood is a good place for me to live.	,46	,49	,71	,78	4,02	3,83		
	• I feel at home in my neighborhood.	,48	,61						
	• I am proud to tell others where I live.	,58	,55						
	• I expect to live in this neighborhood for a long time.	,45	,72						
Belonging and Attachment	• It is important to me to be a part of this neighborhood.	,43	,44					Sig= ,010	
Shared Values and Cooperation	• If there is a problem, the community can solve it.	,37	,43	,76	,82	3,32	3,23		
	• I really fit in with my neighbors.	,62	,57						
	• My neighbors and I want the same thing from this neighborhood.	,54	,65						
	• I agree with the values and beliefs of other neighbors.	,60	,74						
	• I feel similar to most people in my neighborhood.	,57	,68						
Influence	• Neighbors ask your opinions; you ask your neighbors' opinions.	,40	,49	,72	,70	3,45	3,06	Sig= 0,000	
	• I feel that I am an important part of this community.	,61	,51						
	• I care about what my neighbors think about my actions.	,55	,46						
	• I am interested in knowing what goes on in the community.	,47	,49						
	• I know a lot of neighbors by names.	,68	,59	,88	,87	3,15	2,96		
Emotional Connection and Ties	• My neighbors and I visit each other frequently.	,74	,69					Sig= ,010	
	• I know most people who run a neighborhood business or store.	,50	,57						
	• Friends in my community are part of my everyday activity.	,64	,56						
	• Neighbors usually support each other in problems.	,61	,64						
	• I can always find someone to talk to.	,72	,67						
	• If I need advice about something, I could go to someone in my neighborhood.	,69	,70						
	• I borrow things and exchange favors with my neighbors.	,64	,64						
	Sense of Community		,89	,89			3,44		3,24
									Sig= ,010

Table 10: Sense of Community in Jami and Farhad. This sense was computed by 4 indicators. Every indicator was measured by some items based on Likert Scale. Response alternatives for all items were with a five-point scale ranging from strongly disagree (1) to strongly agree (5).

5.2 Middle Income Residential Areas: *Syed-Razi and Iraj-Mirza Neighborhoods*

These neighborhoods are located in west Mashad and they are a part of the city's middle class districts. These areas were shaped after the revolution of Iran with some differences in their physical configurations, particularly in their components and local services.

Figure 24 shows the socio-economic status (SES) of these two neighborhoods. The mean for SES in Syed-Razi and Iraj-Mirza were 2.72 and 2.69, respectively. Also, the median of this indicator was 3 (intermediate status) in both of these neighborhoods. Based on the *Independent Samples T-Test*, there was not any significant difference between the indicators of SES within these two areas.

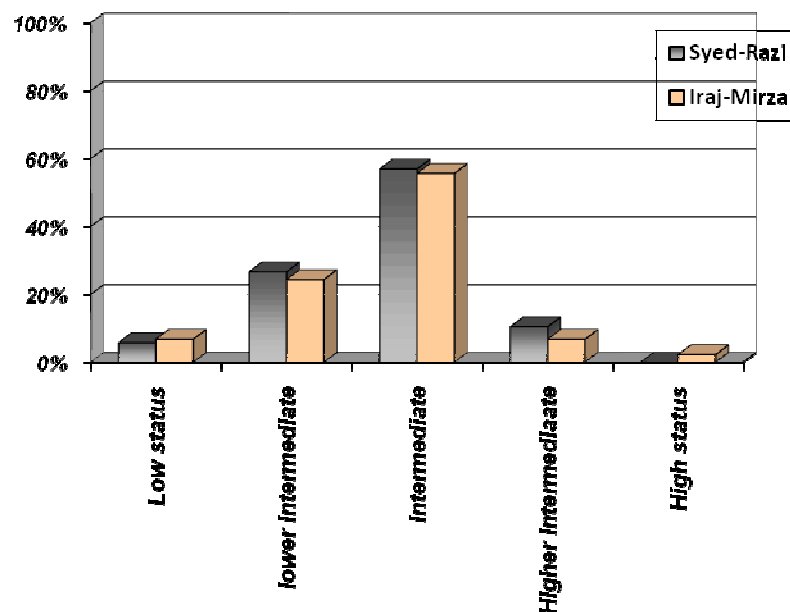


Figure 24: The Socio-Economic Status of households of Syed-Razi (n= 90) and Iraj-Mirza (n= 90).

Other indicators that were employed for more clarification of economic status of these neighborhoods included:

- (1) The area of lots and residential units and their quality:
In both these neighborhoods, the average area of lots was about 200 m² and the means of residential units were 125 m².
- (2) The ownership ratio of houses and apartments:
This ratio in Syed-Razi was 76 Percent owner against 24 percent tenant, and in Iraj-Mirza was 82 percent against 18 percent tenant.
- (3) Owning car and its brand & model:
In Syed-Razi more than 60 percent of Families had a car, this rate in Iraj-Mirza was 74 percent. The average brand and quality of cars –with 5 ranges from low to high model– was 3 or in an intermediate status in both of these neighborhoods.
- (4) Type of children's school:

In Syed-Razi 11.9 percent of children went to private schools and the rest went to public schools. This rate, in Iraj-Mirza was 9.8 for private schools and the remainder for public schools.

The ethnic division of the interviewed households in Syed-Razi comprised 57 percent Mashadi, 28 percent from inside the province, and 15 percent from other Iranian provinces. This issue in Iraj-Mirza included 53 percent Mashadi, 31 percent from inside the province, and 16 percent from other provinces. About 16 percent of Syed-Razi's inhabitants and 14 percent of Iraj-Mirza's residents had migrated to Mashad less than 10 years ago.

The educational and occupational status of respondents in these two areas was almost identical. Based on the *Independent Sample T-Test*, there was not any significant difference between education and occupation of head of households in these two neighborhoods.

The average length of residence of the interviewees in Syed-Razi and Iraj-Mirza were about 10.3 and 12.2 years, respectively. In addition, 65 percent of households in Syed-Razi and 68 percent of households in Iraj-Mirza had resided there for more than 5 years.

The results of social personality in Syed-Razi and Iraj-Mirza are indicated in Table 11. As it turns out, all items have high correlation and the rate of α in both neighborhoods was high: 0.86 in Syed-Razi and 0.77 in Iraj-Mirza.

The mean of social personality in Syed-Razi and Iraj-Mirza were 3.02 and 3.01, respectively. As can be seen, there was not any significant difference between means of social personality of these neighborhoods according to Independent samples T-test. Therefore, the data collected in these neighborhoods was acceptable from the viewpoint of social personality.

		Reliability				Mean	
		Corrected item		Cronbach's α		S	I
statements		S	I	S	I		
Social Personality	• Friends and acquaintances are part of my everyday life.	,67	,53				
	• I quickly communicate and fit in with others.	,64	,58				
	• I ask my friends' opinions on different issues and problems.	,65	,59	,86	,77	3,02	3,01
	• My friends and I pay visits or contact each other frequently.	,73	,55				
	• If I need advice about something, I could go to some of my friends.	,73	,40				

Table 11: The indicator of Social Personality and its items in Syed-Razi (S) and Iraj-Mirza (I). Response alternatives for all items were on a five-point scale ranging from strongly disagree (1) to strongly agree (5).

The three main reasons for inhabitants moving to Syed-Razi were demonstrated in a descending order: good location because of conveniences, nice social fabric, and quality of houses with 27, 21, and 21 percent positive agreement. These reasons in Iraj-Mirza were good location because of conveniences, appropriate house and rent prices, and nice social fabric, with 33, 26 and 16 percent positive agreement.

In both of these areas, most respondents identified the name of their neighborhoods with the name of the neighborhood's main streets (in Syed-Razi 75 and in Iraj-Mirza 66 percent) and the others identified with the name of their district.

The last finding in this part refers to the existence and condition of social groups of residents for dealing with neighborhoods' problems. There were not any groups and social clubs in these areas that people could attend to deal with neighborhood issues.

5.2.1 Physical Aspects

In this part an attempt is made to present the results of the survey of the physical aspects of these neighborhoods. These findings consist of features of physical organization and construction of the neighborhoods, neighborhood landscape, and also fulfillment of physical needs. The factors and indicators which were focused on in this section are shown in appendix A.

5.2.1.1 Layout and Organization

The situation of boundaries and physical territories⁵⁶, texture, neighborhoodscape, and also neighborhood components are the main factors that will be discussed in this part.

In these two neighborhoods, there are not any clear boundaries. Most respondents in Syed-Razi identified the name of their neighborhood with name of the neighborhood's main streets (about 76 percent) and the other interviewees identified with the name of their district. This issue in Iraj-Mirza was 46 percent with the name of the neighborhood's main streets and 54 percent with name of their district. Therefore, they recognized their neighborhood's area with subjective limits around the neighborhoods' main streets, or to a larger extent as a part of their district.

5.2.1.1.1 Neighborhood's Components

The main components of Syed-Razi neighborhood besides the houses are a park, a school for the disabled (under construction), a parking lot, and a market center with stores such as grocery store, fruit and vegetable shop, bakery, taxi services, cabinet-maker store and so on. In Figure 25, the land use map of Syed-Razi is presented.

Because of the location of conveniences and services in one of the streets of Iraj-Mirza, this street has found a relative centrality in the neighborhood. Moreover predetermined uses like an elementary school for boys, some other land uses like religious centers (a mosque), stores such as grocery store, fruit and vegetable shop are located on this street. Additionally some scattered stores and a kindergarten exists in this area too (See Figure 26: the land use map of Iraj-Mirza). In this neighborhood, the number of hairdressers' salons for women is remarkable.

5.2.1.1.2 Texture

In this part similar to the last section, the situation of the three factors of composition, access system, and density in these neighborhoods will be presented.

In Syed-Razi, the composition of the houses follows the common pattern of Iranian cities. The lots of houses and the residential complexes have been shaped along streets and display a narrow row shape with clear boundaries. Every house includes two parts – a building and a yard - and usually the ratio of mass to space is 60 to 40 percent.

⁵⁶ Territorial hierarchy will be presented in section on Texture.



Figure 25: The Land Use Map Of Syed-Razi Neighborhood

Basic Source: Iranian Survey Organization 2005, Or Changes by Author

LEGEND

- Residential
- Green space
- Commercial
- Retail Store
- Fruit and Vegetable Store
- Bakery
- Butchery
- Cofe Shop
- Fast Food
- Stationery
- Private School
- Public School
- Educational Institute
- Religious
- Industrial
- Services
- Hairdresser's Salon for Women
- Hairdresser's Salon for Men
- Taxi Services
- Real-Estate Agency
- Tailoring Shop
- Cafe Net
- Health Services

Sc 1:2000



Figure 26: The Land Use Map of Iraj-Mirza Neighborhood

Basic Source: Iranian Survey Organization 2005, Other Changes by Author

LEGEND

- Residential
- Green space
- Commercial
- Retail Store
- Fruit and Vegetable Store
- Bakery
- Butchery
- Cafe Shop
- Fast Food
- Stationery
- Public School
- Private School
- Educational Institute
- Religious
- Industrial
- Services
- Hairdresser's Salon for Women
- Hairdresser's Salon for Men
- Taxi Services
- Real-Estate Agency
- Tailoring Shop
- Cafe Net
- Health Services

Sc 1:2000

On the other hand, the composition of a park within the grid texture of this neighborhood shows that a residential block was converted to a park. The Market center appears in front of this park with many shops and a parking lot situated behind it (see Figure 25).

The composition of access in Syed-Razi has been formed according to the grid streets. The access system and road network lacks hierarchy in this neighborhood. The design of the streets indicates that vehicle movement was given first priority in the planning of outdoor spaces in this neighborhood. Hence, to manage this problem, and in order to form more privacy and physical safety, some of these streets have recently been barricaded. The sidewalks in this neighborhood flank the streets in front of the houses.

In Iraj-Mirza, the composition of the houses follows the aforementioned pattern completely (60 percent mass and 40 percent space in every lot). Also, the composition of access, like that in Syed-Razi, is based on grid texture with straight, wide streets along which sidewalks are only found in front of the houses. Hence, the system of access in this neighborhood is biased towards vehicle movements. The combination of houses with other activities in this neighborhood does not follow any special principles. Some of residential units have been changed to other usages like religious places (the mosque) and the kindergarten.

In Syed-Razi, the situation of hierarchy of physical territory is monotonous. There are only three sets of territories in this neighborhood: Public (collector streets), Semi Public (sub collector streets and closed streets (for cars), central area: park, market center, parking lot), and Private (houses and apartments). In Iraj-Mirza, very similar to Syed-Razi, 3 sets of territorial hierarchies exist in the neighborhood: Public (collector street), Semi Public (sub collector streets), and Private (houses and apartments).

Table 12 indicates the situation of density in Syed-Razi and Iraj-Mirza neighborhoods. These indicators can clarify the situation of lot and unit density as well as population density.

As stated before, the average area of residential lot of Mashad like other cities of Iran varies in neighborhoods of different income level. The average of lot area is 205 m² in Syed-Razi and 215m² in Iraj-Mirza. However, most lots are either 125m² or 250m².

The density of units in a building according to the number of residential units within a lot is 2 in both neighborhoods. Also, the average area of residential units is 125 m² in both these areas. Meanwhile, the average percentage of lot area covered by buildings is about 63 percent in Syed-Razi and about 58 percent in Iraj-Mirza.

The mean of stories in both of these neighborhoods is 2, which is in line with the permitted density expressed in the detailed plan of these areas. The FSI factor in Syed-Razi is 1.21 and in Iraj-Mirza is 1.16. Today because of fast growth of land price, there is a special tendency to make buildings with more floors. Lack of planning for this issue has led to the emergence of unharmonious facades.

<i>Neighborhood</i>	No. of residential units in a building (Mean)	Stories number (Mean)	Area of residential unit (Mean) (m ²)	Area of Lot (Mean) (m ²)	Construction to lot ratio in a story (%)	FSI	Household size	Are of residential unit per person (m ²)	No. of persons per hectare
S	2	2	125	205	63	1.21	4.4	28.4	420
I	2	2	125	215	58	1.16	4.25	29.8	403

Table 12: Indicators of Density in two neighborhoods of Syed-Razi (S) and Iraj-Mirza (I).

5.2.1.1.3 Neighborhoodscape

The same situations of density, composition, access system, and also similarity in some other factors, such as the age of neighborhoods, facades of houses, and the composition of them, lead to the formation of almost identical neighborhoods in these neighborhoods (Figure 27).



Figure 27: The situation of Neighborhoodscape in Syed-Razi (S) and Iraj-Mirza (I).

The grid textures with orthogonal streets of similar dimensions have caused monotony in both neighborhoods. However, different components such as the park and the neighborhood centre bring about a better situation in Syed-Razi (Figure 28).



Figure 28: The Syed-Razi's Park and Center lead to increasing the quality of neighborhoodscape.

As observed in the previously discussed neighborhoods, permission irregularly granted to develop buildings with more stories than stipulated in the detailed plan (due to financial problem) has caused disorder in neighborhoods and skylines of these areas.

The opinion of residents about aesthetic appeal, with order being an exception, was slightly better in Syed-Razi (Table 13). The indicator of aesthetic appeal has been examined by computing averages of its 5 items with the reliability of $\alpha = 0.87$. Based on *Independent Samples T-test*, there was not any significant difference between the indicators of aesthetic appeal of these two neighborhoods.

Neighborhood	Deteriorated buildings modern and oldness	Facades of buildings	Overall layout of neighborhood	Street layout	Order	Indicator of Aesthetic Appeal
Syed-Razi	3,04	3,21	3,26	3,48	3,28	3,25
Iraj-Mirza	2,86	3,10	3,18	3,42	3,49	3,16

Table 13: The statistical means for Aesthetic Appeal and its items in two neighborhoods of Syed-Razi and Iraj-Mirza. This evaluation was done on the basis of a five-point scale ranging from serious problem (1) to completely appropriate (5).

5.2.1.2 Fulfillment of Physical Needs

The fulfillment of needs here, as in the previous two neighborhoods, was examined by factors of housing, services and conveniences, overall layout and organization of the neighborhood, aesthetic, and safety issues. At the same time, some notes and photos were collected on these issues during the field work.

In both of these neighborhoods the major common problems of houses expressed by the residents were the lack of bedrooms with frequencies of 37.5 in Syed-Razi and 20 percent in Iraj-Mirza; inadequate size with 15 percent in Syed-Razi and 26.7 percent in Iraj-Mirza. Additionally, the house layout problem in Syed-Razi with 27.5 percent and age problem in Iraj-Mirza with 40 percent frequency were other main problems about houses. Meanwhile, in Syed-Razi 23.3 percent and in Iraj-Mirza 43.8 percent of the interviewed households owned a private bedroom for every member of the family.

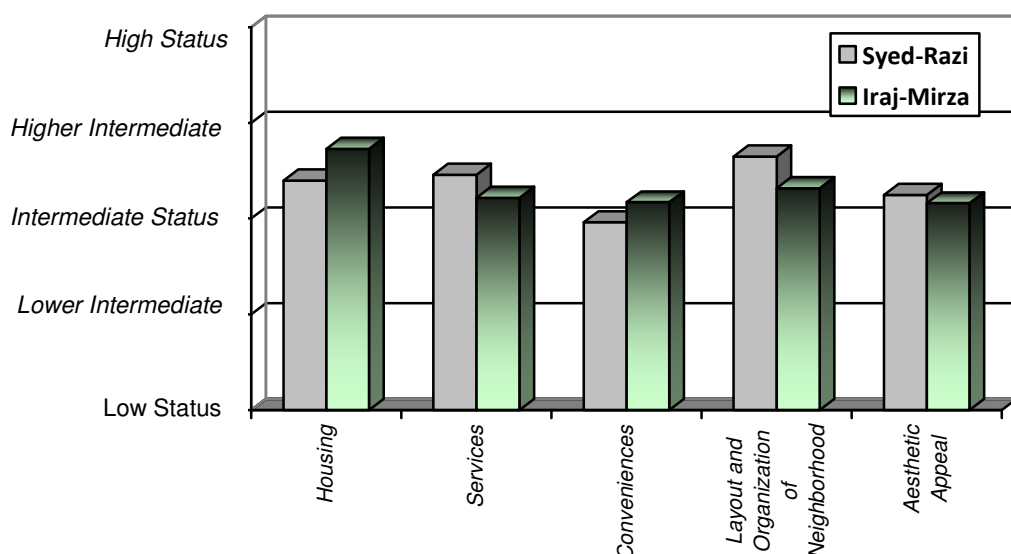


Figure 29: The situation of Fulfillment of Physical Needs in Syed-Razi and Iraj-Mirza neighborhoods.

The mean of the houses' fulfillment of needs, in a five-point scale ranging from completely satisfied (1) to completely dissatisfied (5), was 3.40 in Syed-Razi (median=3), and 3.73 in Iraj-Mirza (median=4). As stated before, the other aforementioned indicators of fulfillment of physical needs –except physical safety– were surveyed through interviews recording the opinion of residents about indicator items on a five-point scale ranging (see Figure 29).

Additionally, Table 14 indicates the opinion of respondents indicated through the mean of every indicator's criteria of Services, Conveniences, and Layout and Organization of Neighborhood (the indicator of Aesthetic Appeal and its criteria were examined in the section on Neighborhoodscape). The every indicator's score was obtained from computing the average of the score of its indicators. The reliability indices for Services, Conveniences, and Layout and Organization of Neighborhood were $\alpha = 0.70, 0.71, \text{ and } 0.85$, respectively.

These statistical means for these indicators were 3.46, 2.97, and 3.65 in Syed-Razi and 3.22, 3.17, and 3.32 in Iraj-Mirza for Services, Conveniences, and Layout and Organization of Neighborhood, respectively.

Based on *Independent samples T-test*, there was a significant difference between every indicator of Housing (sig. =0.034), Conveniences (sig. =0.028), and Layout and Organization of Neighborhood (sig. =0.001) in these two neighborhoods. The noticeable point here was that, based on the opinion of residents, the situation of Housing and Conveniences was better in Iraj-Mirza, and the situation of Layout and Organization of Neighborhood were better in Syed-Razi.

Meanwhile, based on the observations, the overall situation of the layout of Syed-Razi neighborhood was in a better situation than in Iraj-Mirza in terms of fulfillments of needs of its inhabitants because of neighborhood components such as the park and the open space, the central market, and also off streets.

The grid texture with straight, similar, and wide streets, which have been developed essentially for facilitating the movements of vehicles, has led to a decrease in the physical safety in both of these neighborhoods. To manage this problem in Syed-Razi, only some of the neighborhood's streets in connection to main street (collector street) have been closed by barricades. This issue has led to an increased rate of safety to some degree.

<i>Variables</i>	<i>Neighborhood</i>	
	Syed-Razi	Iraj-Mirza
Trash and waste removal	3,66	3,5
Street requires maintenance	3,1	3,02
Street cleaning	3,74	3,48
Street lighting	3,29	3,3
Distance to public transportation Taxi	3,48	3,15
Distance to public transportation Bus	3,18	3,04
Indicator of Services	3,41	3,25
Park and Open spaces	3,82	3,02
Distance to health services	3,02	2,98
Distance to stores	3,35	3,29
Quality of stores	3,44	3,22
Distance to schools	3,16	3,62
Quality of schools	3,35	3,72
Entertainment	2,22	2,21
Cultural opportunities and library	1,69	1,9
Religious center (mosque, Hosseinie,etc)	2,66	4,14
Indicator of Convenience	2,97	3,17
Accessibility	3,31	3,25
Areas of lots and residential units	3,42	3,43
Form and combination of houses	3,34	3,24
Size of Residential Block	3,61	3,41
Adequate Sidewalks for pedestrians	3,83	3,72
Population growth and increased density	3,62	3,12
Density of Buildings	3,54	2,89
Renovating the present houses	3,33	2,67
Quality of Buildings	3,31	3,44
Parking spaces	3,45	3,46
Traffic congestion	3,68	3,58
Street condition	3,31	3,28
Green spaces	3,87	2,9
Indicator of Layout and Organization of neighborhood	3,65	3,32

Table 14: The statistical means for indicators of Services, Conveniences, Layout and Organization of Neighborhood and their items in two neighborhoods of Syed-Razi and Iraj-Mirza. This evaluation was done on the basis of a five-point scale ranging from serious problem (1) to completely appropriate (5).

5.2.2 Social Aspects

This part –similar to the last part– demonstrates the results of the social aspects of these neighborhoods. These findings include activity variations and behavior settings of the residents in these areas, social safety, and also the sense of community of residents living in these areas.

5.2.2.1 Activity Variations and Behavior Settings

The variety of activities of residents with different age ranges and gender, as well as social interaction, privacy and crowding, accompanied by the most important social behavior settings of the inhabitants in these areas comprise the data that will be presented here.

5.2.2.1.1 Residents' Activities

The data collected on residents' activities in these neighborhoods is presented in Table C- 3 (see Appendix C). The distance between neighborhood and schools increased with age, especially for boys. The place of work for males in three age ranges 19-26, adults, and elderly in both neighborhoods, was far from neighborhood. This rate for females was usually far too, but, for some of them, the place of work was closer.

Residents of these neighborhoods were spending most of their leisure time at home together with people from other households. Spending leisure time inside the neighborhood was important for boys between 7 and 14 in both of these areas, as it was for almost every other male age range in Syed-Razi, except for the adult group. However, the second most popular place to pass spare time –after home– was expressed by interviewees to be outside the neighborhoods –except for male age group of 7-14.

With household members at the top of the list, the second most popular group for spending leisure time with was the network of friends and acquaintances outside the neighborhoods. Spending leisure time in the company of neighbors was almost zero in Iraj-Mirza (except for the male age group between 7-14 years of age). In Syed-Razi males in three stages (7-14, adults and elderly), and for females in two stages (19-26 and adults) spent more time in the company of their neighbors.

The popular activities and hobbies which were selected by all age ranges and both gender were almost identical to each other in both neighborhoods. Most of these activities take place at home. Watching TV was expressed as one of the most important hobbies for all groups. In addition, using PC was recognized as an important hobby for males between 15 and 26 years old.

The most important social activities that occurred frequently inside the Iraj-Mirza neighborhood were boys' plays and gatherings. Despite the physical safety of this neighborhood being unsuitable for children's activities, they played in every corner of

neighborhood and its streets. The most popular activities for children were soccer and bicycling. The network of friendship between children was very significant in this area and led to neighbors knowing each other more. The existence of some stores, a mosque and a school around one of the neighborhood's streets created a focal point for social behavior. About 80 percent of neighbors were buying their everyday essentials within the neighborhood and sometimes attended the mosque. In spite of these issues, a lack of suitable spaces meant that adults holding social activities or gathering inside the neighborhood was rare (Figure 30).



Figure 30: The existence of some components like some stores, a mosque, and a school in one of the streets of Iraj-Mirza created a focal point for social activities (1, 2 &3). However, the most significant social activities that were observed in this neighborhood were boys' plays and gatherings (3&4).

In Syed-Razi, similarly to Iraj-Mirza, the friendship network among children was significant. Male children were usually observed playing soccer, bicycling, or getting together. This area, like Iraj-Mirza, didn't have appropriate physical safety, but because some entrances to neighborhood streets adjoining main street had been closed, it had a better situation. On the other hand, due to existence of some spaces like a park and a playground, sometimes families and neighbors spent their leisure time in these places. Additionally, the market center beside the park in the neighborhood center composed a social behavior setting in the neighborhood (Figure 31). About 64 percent of neighbors frequently purchased everyday items from these stores (the mean of use of these shops was 3.79⁵⁷). These factors improved contact between neighbors in this neighborhood. However, residents didn't have a reasonable degree of satisfaction with the park as a social setting because of its use by inhabitants from the next neighborhood and the occasional gathering of unfamiliar youths and hooligans.

⁵⁷ This rate measured in 5 ranges (see the question No.36 in questionnaire in Appendix B)



Figure 31: The neighborhood center with a park in Syed-Razi had provided a better situation for social activities (1, 2&3). Children's games and gatherings were the most significant activities in every place of this neighborhood (3&4).

5.2.2.1.2 Social Interaction

Concerning the place of occurrence of inhabitants' social connections, about 30 percent of the interviewees of both neighborhoods expressed that their social connections took place within their neighborhoods.

As mentioned before, the indicator of social interaction was measured through questions (see Table below) and on a five-point scale (see Appendix B, questions of social interactions). The reliability of the indicator of social interaction for these items was $\alpha=0.73$.

Table 15 presents the means of indicator of social interaction and its related items for these neighborhoods. The mean of every item and also indicator of social interaction in Syed-Razi was more than those for Iraj-Mirza; however, based on the *Independent sample T-test*, there was not any significant difference between means of indicator of social interaction in these neighborhoods.

Neighborhood	Rate of social connection occurrence inside the neighborhood	Number of your neighbors that you know	Rate of relationship intensity With neighbors	Rate of gathering with neighbors	Indicator of Social Interaction
Syed-Razi	2,62	3,19	3,08	3,05	2,99
Iraj-Mirza	2,46	3,04	2,97	2,96	2,86

Table 15: The statistical means for indicator of Social Interaction and its 4 items in Syed-Razi and Iraj-Mirza. Every item was graded on a five-point scale.

Meanwhile, the quality of social interactions in these neighborhoods was examined by asking interviewees about the kinds⁵⁸ of social connections with neighbors. In Syed-Razi, three kinds of social interactions were identified as the most important kinds of social connections, i.e. “greeting and asking about health”, “small talk and discussing problems”, and “ordinary chat” with 59.3, 15.1, and 11.6 percent. Also, “talking about individual problems and asking for others’ opinions” and “close and intimate connection” with 9.3 and 8.1 percent were noteworthy in this area. In Iraj-Mirza “greeting and asking about health” with 60.7 percent, and both “small talk and discussing problems” and “talking about individual problems and asking for others’ opinions” with 11.2 percent were the most significant kinds of social interaction.

Based on interview results, the most important settings for social interaction in outdoor spaces in both neighborhoods were in front of houses, in streets, and on sidewalks. Meanwhile, Syed-Razi’s Park was found to be a fairly important location for these interactions.

The observed social activities and interaction of residents were explained in the last part of this section. Another noticeable point in Syed-Razi was the low achievement of the complex of park and neighborhood center for encouraging and facilitating neighborhood gatherings. Most respondents expressed some degree of dissatisfaction with this park. This problem arose from the lack of open spaces in the vicinity of the neighborhoods and how residents made use of the facilities in this park, as well as gathering of unfamiliar youths and their harassments. On the other hand, streets and sidewalks in front of houses were significant places for interaction for all households, especially for children that used the street for playing (Figure 32).



Figure 32: Gatherings of some unfamiliar youths and families in Syed-Razi Park led to decreasing achievement of this place as a desirable social setting for its residents (1). The most important places for children plays were streets and sidewalks (2, 3&4).

In Iraj-Mirza, the interaction settings occurred in streets and sidewalks because of the absence of open spaces. Due to the absence of appropriate spaces children had accommodated their behavior with the existing spaces and were usually playing on the streets and sidewalks,

⁵⁸ These kinds were asked in five categories (see Appendix B, social interaction part).

particularly in the street that the mosque, the school and most of the stores were situated (Figure 33).



Figure 33: The most important social behavior settings for children in Iraj-Mirza were on streets and sidewalks.

5.2.2.1.3 Privacy and Crowding

Similar to previous neighborhoods, the situation of privacy in these neighborhoods, as an indicator of fulfillment of needs, was examined through interviews by asking the opinion of residents about 5 items (see Table 16). These items were graded from 1 to 5, i.e. from serious problem (1) to completely appropriate (5). The reliability index for shaping the indicator of privacy through these 5 items was $\alpha = 0.70$.

This situation for most of the items in Syed-Razi was better than that for Iraj-Mirza. According to *Independent samples T-test* the indicator of privacy demonstrated a significant difference (sig. = 0.046) between these neighborhoods.

Neighborhood	Noise of the street	Noise of the neighbors	Interference neighbors	Crowding	Visual privacy (Eshraf)	Indicator of Privacy
Syed-Razi	3,36	3,77	3,91	3,90	3,47	3,69
Iraj-Mirza	3,64	3,60	3,74	3,41	3,14	3,51

Table 16: The statistical means for indicator of Privacy and its items. Every item was asked in ranges from serious problem to completely appropriate.

As mentioned before, the population density, in this study as an indicator of crowding, has been examined based on the area of residence per person, area of lot per person, and size of the household. In Syed-Razi the average area of lot per person was 23.8 m², and the average area of residence was 28.4 m² per person. These rates in Iraj-Mirza were 24.8 m² for lot and 29.8 m² for residence per person. Also, the household size in Syed-Razi and Iraj-Mirza was 4.4 and 4.25 persons, respectively.

The mean of the opinion of respondents about the situation of crowding from serious problem (1 score) to completely appropriate (5 score) was in Syed-Razi 3.90 and in Iraj-Mirza 3.41. Based on *Independent samples T-test*, there was a significant (sig. = 0.000) difference between the indicator of crowding in these neighborhoods.

Additionally, according to many observations, Syed-Razi was less crowded than Iraj-Mirza because of its open spaces. In Iraj-Mirza, lack of appropriate spaces for children especially in

the social street resulted in some crowding. Nevertheless, the condition of this indicator was almost appropriate in both neighborhoods. The situation of privacy was better in Syed-Razi too. Both quantitative collected data and observation showed that the privacy issue in Syed-Razi was better than that in Iraj-Mirza. This was because of the slightly better situation of territory through closed streets and the main center in Syed-Razi.

5.2.2.2 Social Safety

The social safety situation in these neighborhoods like that in the last neighborhoods was examined and measured through 5 items (see Table 17) on a five-point scale from serious problem (1) to completely appropriate (5). The reliability index for these 5 items for measurement of this indicator was $\alpha=0.74$.

Based on the *Independent samples T-test*, the indicator of social safety did not show a significant difference in these neighborhoods.

Neighborhood	Police protection	Burglaries	Ruffian and Violence	Drug abuse	Neighbor's control	Indicator of Social Safety
Syed-Razi	3,45	3,29	3,45	3,51	3,79	3,50
Iraj-Mirza	3,01	2,97	3,50	3,47	3,54	3,30

Table 17: The statistical means for indicator of Social Safety and its items. Every item was asked in a five-point scale ranges from serious problem (1) to completely appropriate.

5.2.2.3 Sense of Community

The results of sense of community in Syed-Razi and Iraj-Mirza are indicated in Table 18. As mentioned before, this table refers to factors of sense of community and their indicators, the reliability of measurement of this sense and its indicators, their means, and also compared means of sense of community and its indicators between these neighborhoods through *Independent samples T-Test*.

The reliability of the measurement of sense of community has been calculated by corrected item or total correlations among the other items of every indicator of this sense as well as Cronbach's α . As it turns out in table 18, all items have high correlation with each other. Also, the rate of α in both neighborhoods is high. This rate for sense of community is 0.92 and 0.91 in Syed-Razi and Iraj-Mirza, respectively.

The means for "Belonging and Attachment", "Shared Values and Cooperation", "Influence", "Emotional Connections and Ties", and also "Sense of Community" were 3.38, 3.31, 3.07, 3.12, 3.12 in Syed-Razi and 3.87, 3.25, 3.27, 3.05, 3.32 in Iraj-Mirza, respectively. In both neighborhoods, the sense of community mean and its indicators was measured between intermediate and upper intermediate –very close to intermediate, except for the indicator of Belonging and Attachment. Based on *Independent samples T-Test*, there were no significant difference in sense of community factor and its indicators between these neighborhoods (see Table 18).

Statements	Reliability:				Mean		Compare Mean Between Two Neigh. T-Test	
	corrected item		Cronbach's α					
	S	I	S	I	S	I		
Belonging and Attachment	• I think my neighborhood is a good place for me to live.	,76	,71	,88	,81	3,83	3,87	—
	• I feel at home in my neighborhood.	,73	,69					
	• I am proud to tell others where I live.	,82	,69					
	• I expect to live in this neighborhood for a long time.	,71	,56					
Shared Values and Cooperation	• It is important to me to be a part of this neighborhood.	,61	,39					
	• If there is a problem, the community can solve it.	,41	,33	,84	,84	3,31	3,25	—
	• I really fit in with my neighbors.	,59	,58					
	• My neighbors and I want the same thing from this neighborhood.	,77	,81					
Influence	• I agree with values and beliefs of other neighbors.	,75	,78					
	• I feel similar to most people in my neighborhood.	,74	,81					
	• Neighbors ask your opinions; you ask your neighbors' opinions.	,50	,48	,73	,70	3,07	3,27	—
	• I feel that I am an important part of this community.	,47	,47					
Emotional Connection and Ties	• I care about what my neighbors think about my actions.	,53	,54					
	• I am interested in knowing what goes on in the community.	,58	,47					
	• I know a lot of neighbors by names.	,64	,53	,86	,90	3,12	3,05	—
	• My neighbors and I visit each other frequently.	,71	,65					
Sense of Community	• I know most people who run a neighborhood business or store.	,42	,61					
	• Friends in my community are part of my everyday activity.	,70	,62					
	• Neighbors usually support each other in problems.	,74	,75					
	• I can always find someone to talk to.	,62	,82					
Sense of Community	• If I need advice about something, I could go to someone in my neighborhood.	,65	,77					
	• I borrow things and exchange favors with my neighbors.	,60	,73					
			,92	,91	3,12	3,32	—	

Table 18: Sense of Community in Syed-Razi and Iraj-Mirza. This sense was computed by 4 indicators. Every indicator was measured by some items based on likert scale. Response alternatives for all items were with a five-point scale ranging from strongly disagree (1) to strongly agree (5).

5.3 Low Income Residential Areas: *Fattah, Sahraie, and Karmandan Neighborhoods*

These neighborhoods are situated in east of Mashad and they belong to Mashad's lower income districts. These areas were shaped in the second Pahlavi period and developed after the Islamic revolution of Iran⁵⁹ with some differences in their physical configurations.

Figure 34 shows the socio-economic status (SES) of these three neighborhoods. The mean of SES⁶⁰ in Fattah, Sahraie, and Karmandan were 2.2, 2.01, and 2.34, respectively. Also, the median of SES in all of these areas was 2 (Lower intermediate status). Based on the *One Way ANOVA* for comparing means among more than 2 variables, there was a significant difference (sig.=0.004) between indicators of SES within the two neighborhoods of Sahraie and Karmandan, and two areas of Fattah and Sahraie. However, the comparison of SES means between Fattah and Karmandan does not show significant differences. Therefore, as mentioned before, for understanding the effect of physical aspects on social aspects, the areas of Fattah with Sahraie and Fattah with Karmandan are qualified for comparison.

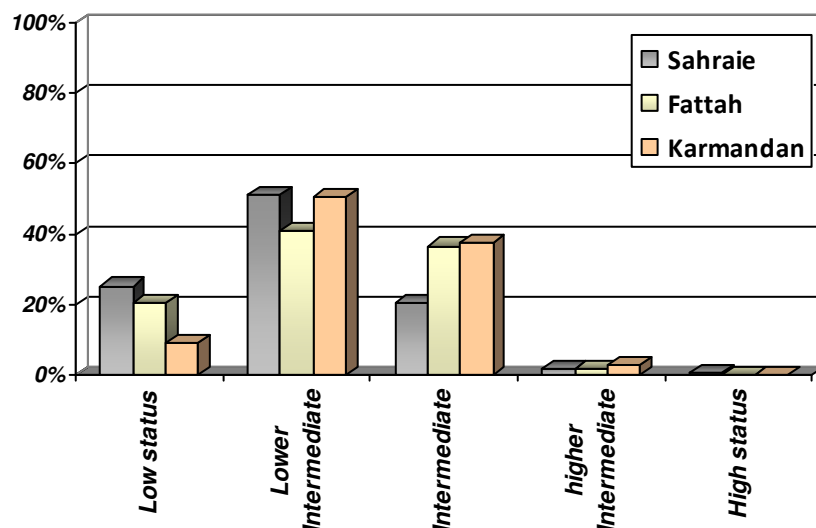


Figure 34: The Socio-Economic Status of households of Sahraie (n= 120), Fattah (n= 100), and Karmandan (n=100).

Some other indicators that were adopted for more clarification of economic status of these neighborhoods included:

- (1) The area of lots and residential units and their quality:

The average area for the lots was about 115 m² in Sahraie, 125 m² in Fattah, and 155 m² in Karmandan. Additionally, the average areas for the residential units were 80, 90, and 110 m² in Sahraie, Fattah, and Karmandan, respectively.

- (2) The ownership ratio of houses and apartments:

This ratio of owner to tenant was 67.5 to 32.5 percent in Sahraie, 70 to 30 percent in Fattah, and 77 to 23 percent in Karmandan.

⁵⁹ Except for Karmandan, which was formed exclusively during the second Pahlavi period.

⁶⁰ In this study, almost every variable has been examined in 5 ranges. So, the mean of SES can change from 1 to 5 (low to high status).

(3) Car ownership and car brand & model:

In Sahraie about 33 percent of families had a car. This rate in Fattah was about 51 percent and in Karmandan was more than 59 percent. The average type and quality of cars –on a five-point scale from low to high model– was between lower intermediate to intermediate in all of these neighborhoods.

(4) Type of school:

In Sahraie 5.8, in Fattah 11.3, and in Karmandan 9.7 percent of children went to private schools and the rest went to public schools.

The ethnic division of residents of Sahraie comprised 52 percent Mashadi, 36 percent from inside the province and 12 percent from other Iranian provinces. This factor in Fattah included 45 percent Mashadi, 44 percent from inside the province, and 11 percent from other provinces. Also, these rates in Karmandan were 55 percent Mashadi, 35 percent from inside the province, and 10 percent from other provinces. Additionally, about 8.2 percent of Sahraie's inhabitants, 9 percent of Fattah's residents, and 21 percent of Karmandan's residents had migrated to Mashad less than 10 years ago.

The educational and occupational levels of respondents in these two areas were very close to each other. Based on the *Independent Sample T-Test*, there was not any significant difference between education and occupation of head of households in these two neighborhoods.

The average length of residence of the interviewees in Sahraie, Fattah, and Karmandan was 14, 12.3, and 13.9 years, respectively. In addition, in Sahraie about 82 percent of households, in Fattah 68 percent, and in Karmandan about 79 percent of inhabitants had resided there for more than 5 years.

The means of social personality based on the initial data gathered showed a significant difference between the two neighborhoods of Fattah and Sahraie and also, Fattah and Karmandan. These means in Sahraie, Fattah, and Karmandan, were 3.14, 2.89, and 3.17, respectively.

Based on the method of this research, the social personality was not supposed to have significant differences in these neighborhoods and it must be controlled by changing data. Therefore, to eliminate these differences, since the mean of the indicator of social personality in Fattah was less than the other neighborhoods, an attempt was made to increase this mean by removing the data of 30 households whose means of social personality indicator were less than the others. Then, data was gathered through 30 more new interviews in the Fattah neighborhood.

The final results of social personality in Sahraie, Fattah, and Karmandan are indicated in Table 19. As it turns out, all factors have a high correlation. The reliability of measurement of this indicator through these items in all neighborhoods was acceptable: 0.84 in Sahraie, 0.78 in Fattah, and 0.75 in Karmandan.

The final mean for social personality –after data control in Fattah neighborhood– in Sahraie, Fattah, and Karmandan were 3.14, 3, and 3.17, respectively. Also, there was not a significant difference in the means of social personality of Fattah and Sahraie, and also, Fattah and Karmandan residents based on *Independent samples T-test*. Therefore, the new collected data was acceptable from the viewpoint of social personality in these neighborhoods.

statements		Reliability						Mean		
		Corrected item			Cronbach's α			Sa	Fa	K
		Sa	Fa	K	Sa	Fa	K			
Social Personality	• Friends and acquaintances are part of my everyday life.	,72	,59	,49						
	• I quickly communicate and fit in with others.	,69	,64	,59	,84	,78	,75	3,14	3	3,17
	• I ask my friends opinions on different issues and problems	,56	,41	,39						
	• My friends and I pay visits or contact each other frequently.	,61	,58	,61						
	• If I need advice about something, I could go to some of my friends.	,61	,69	,51						

Table 19: The indicator of Social Personality and its items in Sahraie (Sa), Fattah (Fa) and Karmandan (K). Response alternatives for all items were on a five-point scale ranging from strongly disagree (1) to strongly agree (5).

The three main reasons for the movement of inhabitants to Sahraie were expressed in descending order: reasonable housing prices and rents, the spouse's family lives there, and good location because of conveniences with 52, 18, and 13 percent, respectively. These reasons in Fattah were reasonable housing prices and rents, good location because of conveniences, and location of neighborhood close to work with 42, 17, and 13 percent, respectively. And in Karmandan the reasons were good location because of aesthetic appeal, conveniences, and social fabric with 44, 42, and 16 percent respectively.

In two neighborhoods of Fattah and Sahraie, most respondents identified the name of their neighborhoods with the name of the neighborhood's main streets (in Sahraie 63 and in Fattah 76) and the others identified theirs with the name of their district. Only Karmandan's residents (83 percent) identified their areas with a specific name because of the well defined boundaries of the Karmandan neighborhood.

The last finding in this part refers to the existence and situation of social groups of residents for dealing with neighborhood problems. There were not any groups and social clubs in these areas, as in other aforementioned neighborhoods, that people could attend to deal with their neighborhood issues. However, in these neighborhoods mosques had very important roles in providing space for discussing neighborhood problems and issues.

5.3.1 Physical Aspects

In this part similar to the last two sections an attempt is made to present the survey's results of the physical aspects of these neighborhoods. These findings include some features of the physical organization and the construction of these three neighborhoods, neighborhoodscape, and also fulfillment of physical needs. The relevant items relating to the factors and indicators focused on in this section are shown in appendix A.

5.3.1.1 Layout and Organization

The situation of boundaries and physical territories⁶¹, texture, neighborhoodscape, and also neighborhood components are the main factors that will be presented in this part.

⁶¹ Territorial hierarchy will be presented in section of Texture.

There are not any special clear boundaries for either Sahraie or Fattah, but Karmandan has discernible boundaries because of the difference in structure to the neighborhoods surrounding it.

Most interviewees in both Sahraie and Fattah neighborhoods identified the name of their neighborhood with the name of the neighborhood's main streets (about 63 percent in Sahraie, 76 percent in Fattah), and the other respondents identified with the name of their district. In Karmandan more than 83 percent of respondents identified the name of their neighborhood with its exact name because of the well defined boundaries.

5.3.1.1.1 Neighborhood's Components

The major components of Sahraie neighborhood, apart from housing, are schools, two mosques, a health center, a hammam, a bakery, grocery stores and fruit and vegetable shops, and stores for different services. Most of these components are located around a center that performs as a main structure for this neighborhood. In Figure 35, the land use map of Sahraie is presented.

In Fattah, in addition to predetermined uses like two elementary schools for boys, some other amenities like religious centers (three mosques), stores such as grocery stores, fruit and vegetable shops, and services stores are located around the main streets of this neighborhood's sub-collector streets (See Figure 36: the land use map of Fattah).

The best equipped neighborhood from the viewpoint of urban spaces of all the 7 neighborhoods examined is Karmandan. This neighborhood includes many open spaces on different scales: a park on the neighborhood scale, some open spaces for sub-neighborhoods, and many small scale open spaces which are part of the complex of houses. Other components of this neighborhood consist of a market center near the park, a school for the hearing impaired, and two elementary schools for boys and girls. Additionally, a mosque, a complex of a girls' junior school and a girls' high school, and other stores like grocery, a fruit and vegetable store, and a bakery are located around one of this neighborhood's sub-collector streets and have formed a focal point and a centrality. This issue has led to the central market losing its effective role inside the neighborhood. In Figure 37, the land use map of Karmandan is presented.

5.3.1.1.2 Texture

In this part as in other similar sections, the situation of three factors of composition, access system, and density in these neighborhoods will be presented.

Sahraie was originally shaped on the organic texture of a village. The new actions of urban plans in this neighborhood have constituted a grid texture with wide streets. The intertwined organic and regular grid textures have considerable effects on the new neighborhood. The neighborhood center as a main structure of village is still dominant and functions as the spinal column of the neighborhood. Some of the organic and disorderly narrow paths have still remained in many residential blocks of this neighborhood, and have led to the formation of disorderly lots.

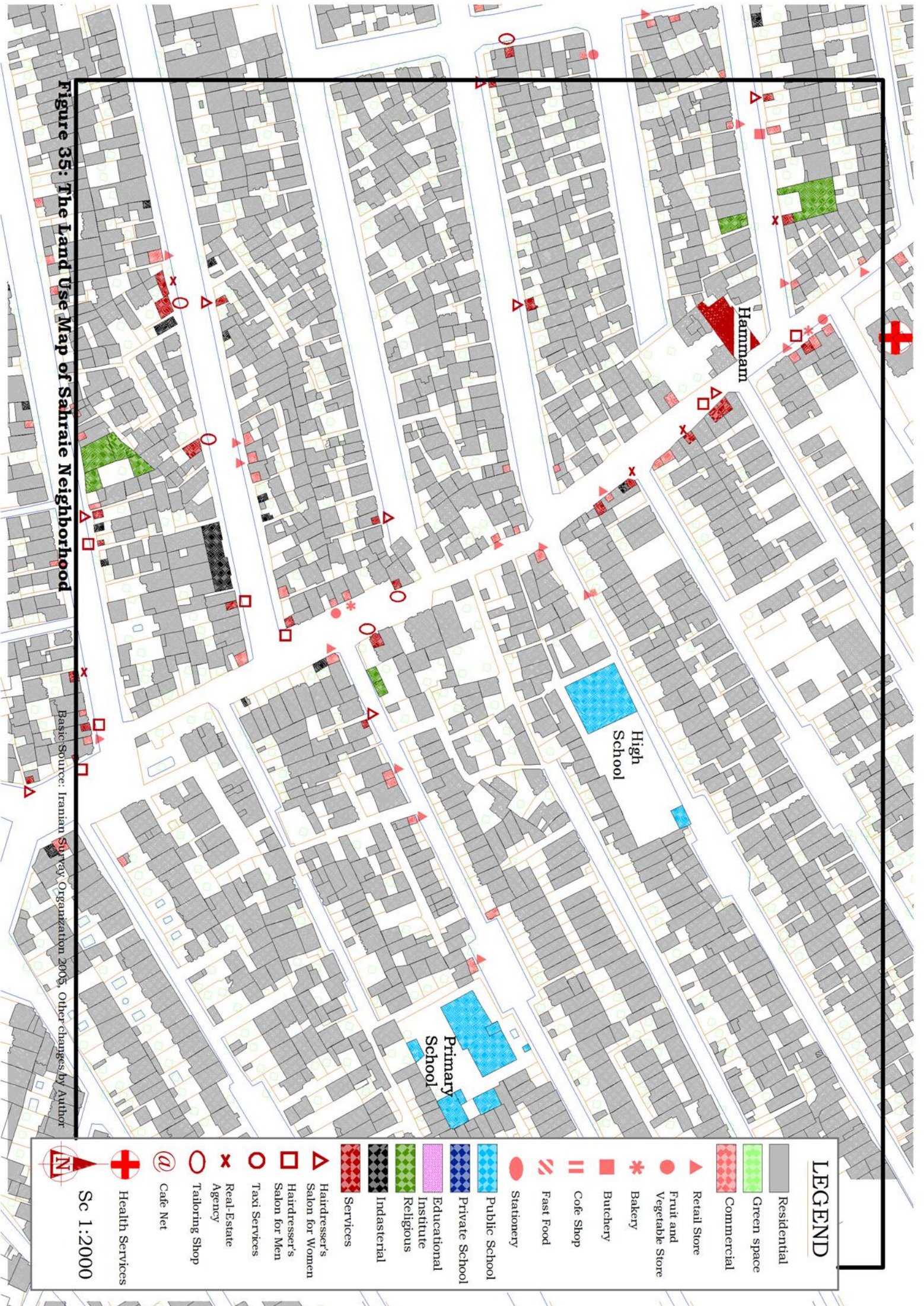



Figure 35: The Land Use Map of Sahraie Neighborhood

Basic Source: Iranian Survey Organization 2005, Other changes by Author



Sc 1:2000

LEGEND
























	Residential
	Green space
	Commercial
	Retail Store
	Fruit and Vegetable Store
	Bakery
	Butchery
	Cofe Shop
	Fast Food
	Stationery
	Public School
	Private School
	Educational Institute
	Religious
	Industrial
	Services
	Hairdresser's Salon for Women
	Hairdresser's Salon for Men
	Taxi Services
	Real-Estate Agency
	Tailoring Shop
	Cafe Net
	Health Services



Figure 36: The Land Use Map of Fattah Neighborhood

Basic Source: Iranian Survey Organization 2005, Other changes by Author

LEGEND

- Residential
- Green space
- Commercial
- Retail Store
- Fruit and Vegetable Store
- Bakery
- Butchery
- Cafe Shop
- Fast Food
- Stationery
- Public School
- Private School
- Educational Institute
- Religious
- Industrial
- Services
- Hairdresser's Salon for Women
- Hairdresser's Salon for Men
- Taxi Services
- Real Estate Agency
- Tailoring Shop
- Cafe Net
- Health Services

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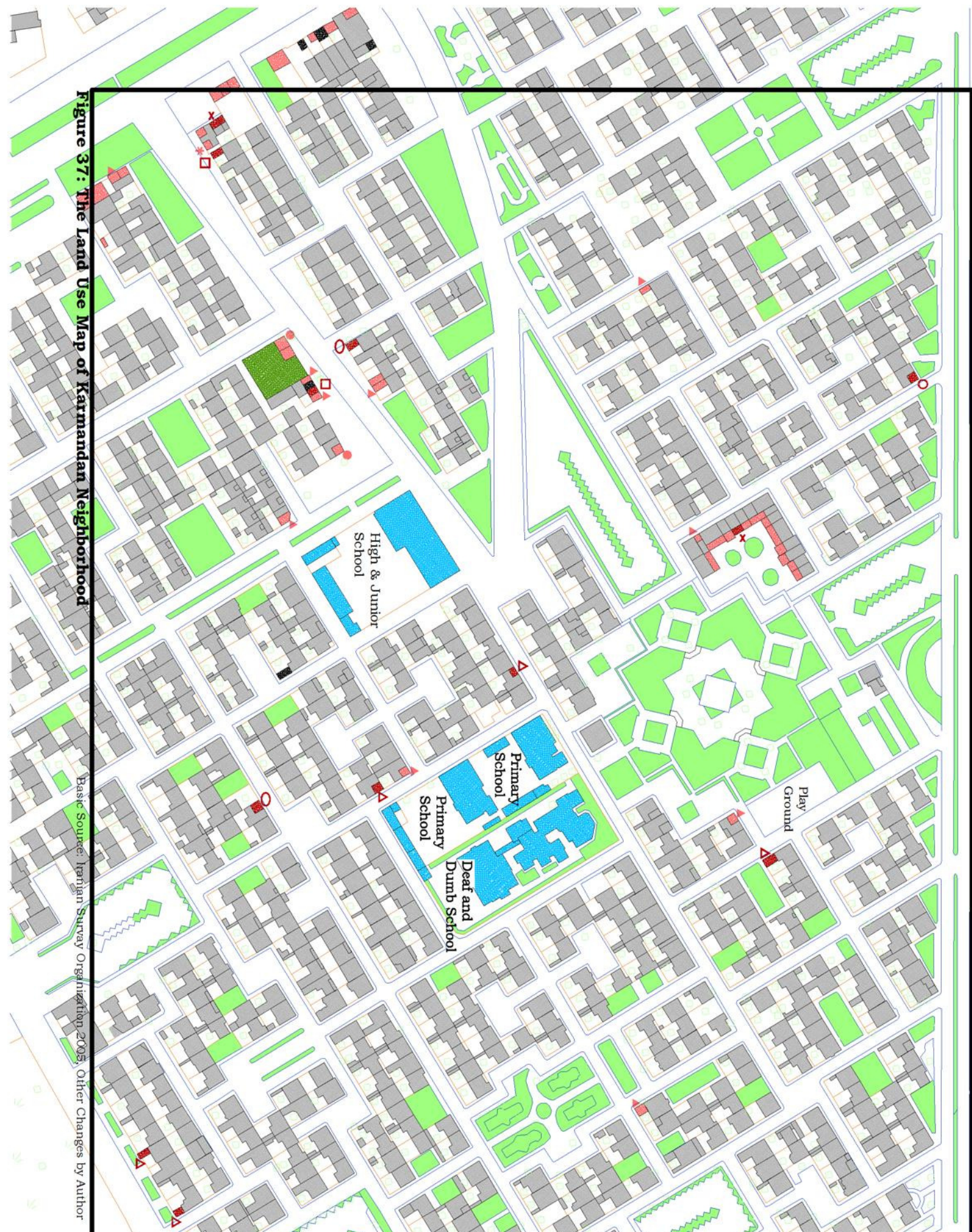


Figure 37: The Land Use Map of Karmandan Neighborhood

Basic Source: Iranian Survey Organization 2005, Other Changes by Author

LEGEND

- Residential
- Green space
- Commercial
- Retail Store
- Fruit and Vegetable Store
- Bakery
- Butchery
- Cafe Shop
- Fast Food
- Stationery
- Public School
- Private School
- Educational Institute
- Religious
- Industrial
- Services
- Hairdresser's Salon for Women
- Hairdresser's Salon for Men
- Taxi Services
- Real Estate Agency
- Tailoring Shop
- Cafe Net
- Health Services

Sc 1:2500

The regulation for erecting buildings on these lots, like in the other parts of the city, is 60 percent mass and 40 percent open space. However, more than 60 percent of the area of the lots has been covered by buildings (see Figure 35).

In Fattah, the composition of houses follows the common pattern of Iranian cities. The lots of houses and the residential complexes have been shaped along streets with very narrow lots, arranged in rows and with clear boundaries. The situation of mass and spaces in this neighborhood is the same as Sahraie: the mass of buildings covers more than 60 percent of lots.

The composition of access in Fattah has been formed according to grid streets. There are different hierarchies of collector, sub-collectors and access streets in access system of this neighborhood. However, the situation of streets indicates that they have been primarily shaped for the movement of vehicles. The sidewalks in this neighborhood flank the streets, in front of the houses (see Figure 36).

In Karmandan, house composition almost follows the aforementioned composition pattern: about 60 percent (usually more) mass and about 40 percent space. In addition, a storeroom, and sometimes a toilet and bathroom have been constructed in the yards of most single family houses.

Karmandan has been organized with three sub-neighborhoods. The general composition of access in this neighborhood is grid-based, with many open spaces in order to define a hierarchy of access and control vehicle movements. Although the sidewalks are composed only in front of the houses, this system of access brings about a safe pedestrian system in the entire neighborhood. Most of the neighborhood's components like mosque, park, stores, and schools have been arranged near the center of the neighborhood annexed to the main central street of the neighborhood (See Figure 37).

There is a variety of territories from public to private in Sahraie: Public (collector streets), Semi Public (main center, sub-collector streets), Semi Public-Semi Private (organic paths), and Semi private (cul-de-sacs), Private (houses and apartments). In Fattah, because of the street structure (there are only two widths), monotony prevails throughout the entire neighborhood. The main territorial hierarchies in Fattah consist of Public (collector street), Semi Public (sub-collector streets), Semi Private (cul-de-sacs), and Private (Houses and apartments). The organization of spaces and access in Karmandan has composed a strong hierarchy of physical territory: Public (collector streets), Semi Public (sub-collector streets, park, central street and market center), Semi Public-Semi Private (open spaces and parking places in sub-neighborhoods), Semi Private (cul-de-sacs, and open spaces among a few houses), and Private (houses and apartments).

In Table 20, the situation of density in these three neighborhoods is shown. These indicators can clarify the situation of lot and unit density as well as population density.

The average lot area in Sahraie, Fattah, and Karmandan is 115, 125, and 155m², respectively. The density of units in a building according to the number of residential units within a lot is 1.54 in Sahraie, 1.7 in Fattah, and 1.4 in Karmandan. Also, the average of residential unit area is 80 m² in Sahraie, 90m² in Fattah, and 110 m² in Karmandan. Meanwhile, the average percentage of lot area covered by buildings in Sahraie, Fattah, and Karmandan is about 70, 69.5, and 67.5 percent, respectively.

The average number of stories in these neighborhoods is less than 2. The FSI indicator is 1.15 percent in Sahraie, 1.29 percent in Fattah, and 0.98 percent in Karmandan. Like the other parts of Mashad, due to the fast growth of land price, there is a special tendency to make buildings with more floors in these neighborhoods. This issue has created inharmonious facades in these neighborhoods because of selling the extra stories by municipality.

<i>Neighborhood</i>	No. of residential units in a building (Mean)	Stories number (Mean)	Area of residential unit (Mean) (m ²)	Area of Lot (Mean) (m ²)	Construction to lot ratio in a story (%)	FSI	Household size	Are of residential unit per person (m ²)	No. of persons per hectare
Sa	1.54	1.67	80	115	70	1.15	4.1	19.6	569
Fa	1.7	1.8	90	125	69.5	1.29	4.5	19.7	621
K	1.4	1.44	110	155	67.5	0.98	4.1	27.4	369

Table 20: Indicators of Density in three neighborhoods of Sahraie (Sa), Fattah (Fa), and Karmandan (K).

5.3.1.1.3 Neighborhoodscape

In Sahraie, in spite of the monotony arising from the new grid texture, the remainders of old organic texture cause diversity, especially in the main center of this neighborhood. This diversity along with the monotony of the grid texture in some parts of this neighborhood –particularly in organic paths– create an erratic, almost deconstructivist impression. Moreover, the low quality of construction of houses and their facades, absence of appropriate open and green spaces, and also lack of health because of a weak sewage system and trash removals, and unclean streets compose the low level quality of neighborhoodscape (Figure 38).



Figure 38: The situation of Neighborhoodscape in Sahraie.

In Fattah, the straight grid streets and also lack of open and green spaces have led to monotony dominating the neighborhoodscape. Additionally, the low quality of buildings and their facades decrease the quality of the neighborhoodscape. Furthermore, inappropriate water and trash removals lead to a greater decline of quality in this neighborhood (Figure 39).



Figure 39: The situation of Neighborhoodscape in Fattah.

In Karmandan, the facades of most of the buildings are not in a good state. However, the appropriate organization of neighborhood, the suitable hierarchy of access, many different open spaces, the pronounced diversity of panoramas, and also the very healthy vegetation system bring about a good quality in the neighborhoodscape (Figure 40).



Figure 40: The situation of Neighborhoodscape in Karmandan.

The opinion of residents about the indicator of aesthetic appeal and its items in Sahraie and Fattah was not so different. But, the situation for all items and indicators in Karmandan was better than in Fattah (Table 21). Additionally, based on the *Independent samples t-test*, there were significant differences (sig. =0.000) between the two neighborhoods of Fattah and Karmandan on all of the items and also the indicator of aesthetic appeal. The aesthetic appeal indicator was measured through computing averages of these 5 items with the reliability of $\alpha=0.87$.

Neighborhood	Deteriorated buildings modern and oldness	Facades of buildings	Overall layout of neighborhood	Street layout	Order	Indicator of Aesthetic appeal
Sahraie	2,55	2,80	2,90	3,07	3,07	2,76
Fattah	2,52	2,78	2,80	3,04	3	2,69
Karmandan	3,13	3,50	3,79	3,88	4	3,75

Table 21: The statistical means for indicator of Aesthetic Appeal and its items in three neighborhoods of Sahraie Fattah, and Karmandan. This evaluation was done on the basis of a five-point scale ranging from serious problem (1) to completely appropriate (5).

5.3.1.2 Fulfillment of Physical Needs

The fulfillment of needs here like the previous neighborhoods is examined through factors of housing, services and conveniences, overall layout and organization of neighborhood, aesthetic appeal, and safety. At the same time, notes and photos were collected on these issues during the field work.

In all of these neighborhoods the major housing problems were highlighted as *inadequate size* with frequencies of 43.9 percent for Sahraie, 23.3 percent for Fattah, and 38.1 percent for Karmandan; *age* with 17.5 percent for Sahraie, 44.2 for Fattah and 28.6 percent for Karmandan; and *layout* with 22.8 for Sahraie, 20.9 percent for Fattah, and 19 percent for Karmandan. The mean of house age in Sahraie, Fattah, and Karmandan was about 16, 21, and 17 years, respectively.

Meanwhile, in Sahraie 27.5 percent, in Fattah 22.2 percent, and in Karmandan 21.6 percent of households owned a private bedroom for every member of the family.

The mean of houses' fulfillment of needs based on a five-point scale from completely satisfied (1) to completely dissatisfied (5) was 3.15 (median=3) in Sahraie, 3.19 (median=3) in Fattah and 3.57 (median=4) in Karmandan.

As stated before, the other aforementioned indicators of fulfillment of needs –except physical safety– were surveyed through interviews asking for the opinion of residents about indicators' items in on a five-point scale ranging (see Figure 41).

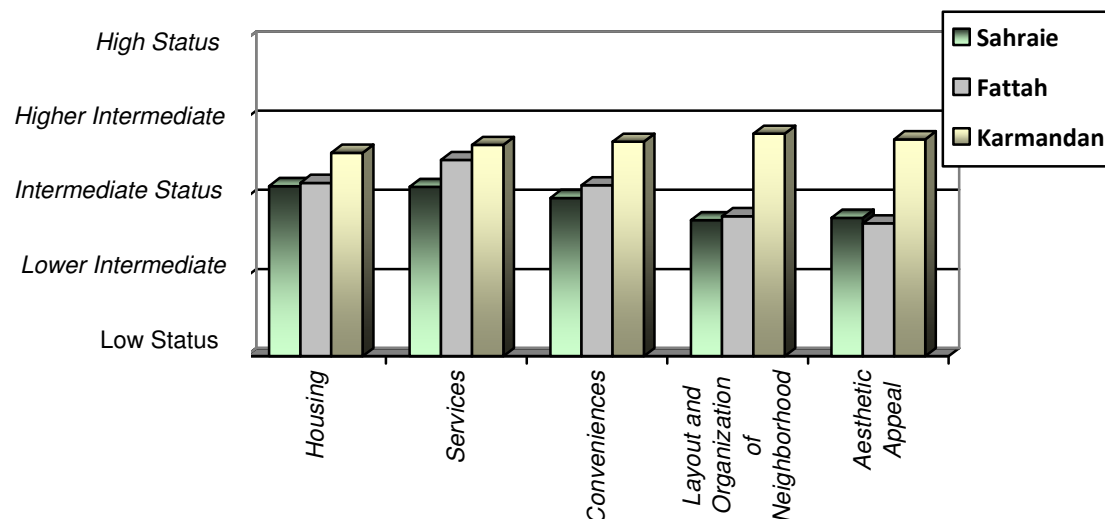


Figure 41: The status of Fulfillment of Physical Needs in Sahraie, Fattah, and Karmandan neighborhoods.

Additionally, Table 22 indicates the opinion of respondents shown through the mean of every indicator's items of Services, Conveniences, and Layout and Organization of Neighborhood (the indicator of Aesthetic Appeal and its items were examined in the section on Neighborhoodscape). The every indicator's score was obtained from computing the average score of its items. The reliability indices for Services, Conveniences, and Layout and Organization of Neighborhood were $\alpha = 0.70$, 0.71 , and 0.85 , respectively.

The means of Services, Conveniences, and Layout and Organization of Neighborhood were 3.14, 3, and 2.72 in Sahraie, 3.48, 3.16, and 2.77 in Fattah, and 3.67, 3.71, and 3.81 in Karmandan.

As stated before, the neighborhoods of Sahraie and Fattah, and the neighborhoods of Fattah and Karmandan have been compared. Based on the *Independent samples T-test*, there was a significant difference only in two indicators of Services (sig. =0.000) and Conveniences (sig. =0.005) between the two neighborhoods of Fattah and Sahraie. However, there was a significant difference in every indicator of Housing (sig. =0.003), Services (sig. =0.045), Conveniences (sig. =0.000), Layout and Organization of Neighborhood (sig. =0.000) between Fattah and Karmandan. As can be seen in Table 22 the situation of these indicators in Fattah was better than in Sahraie; and in Karmandan was better than in Fattah.

Meanwhile, based on the observations, the overall layout of Karmandan shows a good situation in meeting the needs of its inhabitants; and it has an absolutely better situation in comparison to Fattah. This is because of the existence of almost all essential services and conveniences and appropriate spaces and settings for different activities in the neighborhood. However, because of a lack of parks and open spaces in the adjoining residential areas, many residents from the other neighborhoods and occasionally some hooligans use Karmandan's spaces. This caused some level of dissatisfaction among Karmandan's inhabitants.

Additionally, based on observations in Fattah and Sahraie, in spite of supplying the most essential needs of residents through constructing different stores and activities, urban services and conveniences had a bad situation in both neighborhoods. This issue was worse in Sahraie due to disorder and less cleanliness.

In Fattah, the absence of vehicle movement control and also the absence of any appropriate spaces for other activities of residents have led to the shaping of a physically unsafe environment, especially for pedestrians and children. This condition in Sahraie is similar to Fattah. However, the function of the main structure of Sahraie as a social behavior focus has led to a reduction of vehicular movement and the creation of somewhat safer places for children's play and also for pedestrians. Karmandan's spaces have almost complete physical safety because of more precise hierarchy in its streets and existence of many spaces for various activities and games of children.

<i>Variables</i>	<i>Neighborhood</i>		
	Sahraie	Fattah	Karmandan
Trash and waste removal	3,08	3,33	3,80
Street requires maintenance	2,97	3,03	3,17
Street cleaning	2,94	3,14	3,73
Street lighting	3,07	3,34	3,57
Distance to public transportation Taxi	3,25	3,74	3,55
Distance to public transportation Bus	3,21	3,78	3,52
Indicator of Services	3,14	3,48	3,67
Park and open spaces	1,82	1,98	4,19
Distance to health services	3,50	3,40	3,58
Distance to stores	3,24	3,22	3,50
Quality of stores	3,57	3,58	3,62
Distance to schools	3,42	3,30	3,84
Quality of schools	3,47	3,55	3,74
Entertainment	2,12	2,72	2,77
Cultural opportunities and library	2,07	2,50	2,79
Religious center (mosque, Hosseinie, etc)	3,88	3,93	3,95
Indicator of Convenience	3	3,16	3,71
Accessibility	3,04	3,03	3,67
Areas of lots and residential units	2,90	2,80	3,70
Form and combination of houses	2,75	2,78	3,50
Size of Residential Block	3,13	2,96	3,80
Adequate Sidewalks for pedestrians	3,06	2,97	3,58
Population growth and increased density	2,37	2,46	3,51
Density of Buildings	2,80	2,83	3,63
Repairing of present houses	2,85	2,82	3,56
Quality of Buildings	2,84	2,98	3,72
Parking space	2,64	2,72	3,70
Traffic congestion	3,13	2,92	4
Street condition	2,75	2,73	3,57
Green spaces	2,15	2,34	4,19
Indicator of Layout and Organization of neighborhood	2,72	2,77	3,81

Table 22: The statistical means for indicators of Services, Conveniences, Layout and Organization of Neighborhood and their items in three neighborhoods of Sahraie, Fattah, and Karmandan. This evaluation was done on the basis of a five-point scale ranging from serious problem (1) to completely appropriate (5).

5.3.2 Social Aspects

The findings of this part, similarly to the previously analyzed neighborhoods, consist of activity variations of residents and behavior settings in these areas as well as social safety and the sense of community of residents living in these areas.

5.3.2.1 Activity Variations and Behavior Settings

The variety of activities of residents with different age ranges and genders, as well as social interaction, privacy and crowding, accompanied by the most important social behavior settings of the inhabitants in these areas make up the data that will be presented here.

5.3.2.1.1 Residents' Activities

The data collected about the residents' activities in these neighborhoods are presented in Table C- 4 for males and Table C- 5 for females (see Appendix C).⁶² The boys between 7 and 14 years in Sahraie and Fattah went to school inside the neighborhood. In Karmandan this issue was split almost equally between inside and far from the neighborhood. The location of boys' school for the age range of 15-18 and place of work of other male groups were generally far from and close to these neighborhoods, respectively.

Inside neighborhood as a location for school and work was a more significant location for female residents in these areas. Most girls between 7 and 14 were going to schools inside the neighborhood. The most important location of schools for the female age range of 15-18 was near and inside these neighborhoods, respectively. Although the location of work was generally far from the neighborhoods, the location of work inside and close to neighborhood for females was remarkably high in all of these neighborhoods.

Residents of these neighborhoods were spending most of their leisure time at home. *Inside neighborhood* as a place for spending leisure times of males were important for the 7 to 18 age range in all of these areas. The rate of this issue in Karmandan was less than that in Fattah and Sahraie. The significance of this place lessened after the age of 18; however, this place was important for the elderly group in both Sahraie and Fattah. Additionally, *inside neighborhood* for girls within the age range of 7-14 in these areas was an important place too; even though, it was less in comparison to that for boys. Similar to other neighborhoods, residents of these areas were spending most of their leisure times with the households. The second tendency for spending spare time along with the boys from 7 to 14 was friends inside neighborhoods. Although this issue for other age groups after 14 was friends and acquaintances out of the neighborhood, the rate of friends inside neighborhood was still significant for the age range of 15-18. Also, spending leisure time with neighbors in Sahraie and Fattah for the female age group of 7-14 and for adults was somewhat important, but for other female age groups in these two neighborhoods –and females of Karmandan– was not noteworthy.

The popular activities and hobbies which were selected by each age group and each gender in these neighborhoods were similar. These activities are presented in Tables C-4 and C-5 (see Appendix C). The noticeable point here was those activities which took place inside the neighborhoods. Most activities like children's play or sports and sometimes visiting neighbors occurred inside the neighborhoods.

⁶² Only the age range of preschool (for both males and females) is presented in Table 25.

Based on several observations, there was a common basic class behavior (behavior pattern) in all three neighborhoods.⁶³ These areas were full of energy, with lots of social movement, and social activities. But these energetic activities usually had different conditions and settings because of the organization of the neighborhoods; and even sometimes in these areas (Fattah and Sahraie) led to crowding.

In Sahraie, a variety of formal and informal activities was taking place inside the neighborhood. Many stores with different uses, some mosques, some schools, and a health center in the center of the neighborhood –or with direct connection to this place– met all of the essential needs of neighbors. This pivotal center played a social role for this neighborhood. Many behavior settings of this neighborhood were situated in this area. Approximately 83 percent of interviewed households frequently purchased their daily essentials from this place. Meanwhile, residents sometimes attended neighborhood mosques (the average rate of residents attending mosques was 3.10 out of 5 on a scale ranging from 1 to 5). In addition to formal activities, such informal activities as hawking and also some industrial stores like blacksmiths existed in this area (see Figure 42).



Figure 42: Some different spaces and activities within the sphere of Sahraie neighborhood. A variety of formal and informal activities were taking place in this area.

⁶³ The situation and occurrence of social activities in these areas were completely different to the middle and high income neighborhoods.

Despite the absence of proper public spaces and the low physical safety in Sahraie, children and kids played in every part and corner. They usually found and occupied the spaces that they needed. They played with basic tools –such as sand, two bricks or painted frame on wall to represent goalposts for soccer, and even slippers – on the streets, on sidewalks and everywhere in the neighborhood. The resultant combination of order of grid texture and disorder of organic texture had created special corners and spaces around the neighborhood in such a way that neighbors were usually using them for their social activities. Youths, adults and the elderly attended activities inside the neighborhood. In front of the doors and sidewalks were spaces where neighbors were frequently congregating (Figure 43).



Figure 43: Different social activities were occurring in every corner and place of Sahraie. For children, every place was taken as a playground. They usually were playing with basic tools.

In Fattah, children and kids were playing without considering the hazards of playing on streets. Also, the different age groups were getting together in streets, especially on sidewalks in front of doors and beside flower-boxes and flower-beds. The grid texture of this area without any open spaces had dictated unwelcoming and unattractive places for activities. However, residents were adapting their behavior and using the streets and sidewalks without noticing their physical condition (Figure 44).



Figure 44: Contrary to inappropriate spaces for social activities of residents in Fattah (especially for children), they usually use every corner of sidewalks and streets.

In addition, alongside the main neighborhoods' streets (sub-collector streets) many stores existed with different uses –even industrial uses like blacksmiths and carpentry. Hawking was also part of the informal activities in this area. About 75 percent of the respondents obtained their everyday essentials frequently from these stores and commercial units (Figure 45). Meanwhile, residents sometimes attended neighborhood mosques (the average rate of residents attending mosques was 3.16 out of 5 on a scale ranging from 1 to 5).



Figure 45: Many stores and some hawkers fulfilled the needs of residents of Fattah in the main streets of this neighborhood.

In Karmandan, the existence of many appropriate open spaces, and also many facilities in suitable spaces led to the shaping of many different appropriate settings for the social behavior of its residents. Children had some places for playing and informal gathering with a high rate of physical safety such as a playground and many flexible open spaces and green spaces in front of houses throughout in the neighborhood. On the other hand, these open spaces, park, and lawns were used by other age groups too. These spaces created many possibilities for the formation of appropriate activity settings (Figure 46).



Figure 46: Appropriate spaces in Karmandan brought about many different activity settings for its inhabitants.

In this neighborhood the commercial units had been located in a corner of the park, but some new stores were made in the course of time alongside one of the neighborhood's sub-collector streets beside the mosque (see Figure 37). This led to the formation of a focal point for behavior settings in this street. Approximately 54 percent of interview respondents sometimes purchased (mean 3.29) their everyday essentials from inside the neighborhood. Some informal sellers such as hawkers of fruits and vegetables were observed in this neighborhood too (Figure 47). Additionally, the residents of this neighborhood sometimes attended the neighborhood mosque (the average neighborhood mosque attendance was 3.44 on a five-point scale from 1—never— to 5 —always).



Figure 47: A commercial unit (1), some stores that were shaped in the course of time (2&3) and also hawkers (4) fulfilled the necessities of residents in Karmandan.

5.3.2.1.2 Social Interaction

The most important variables examined under the title of social interaction in this study, are the rate of social connection inside and outside neighborhood, indicator of social interaction with 4 items, the quality and kind of interaction between neighbors, and settings of social interactions in the neighborhood. Moreover, observations, photographic documentation and note taking accompany this part.

About 51 percent of the interviewees in Sahraie, 52 percent in Fattah, and 64 percent in Karmandan expressed finding their social connections within their neighborhoods.

The indicator of social interaction was computed by averaging of 4 items (see table below) and on a five-point scale (see Appendix B, questions of social interactions). The reliability of these items which dealt with the formation of the indicator of social interaction was $\alpha=0.73$.

Table 23 presents the means for the indicator of social interactions and its items in these neighborhoods. Based on the *Independent Samples T-test*, there was no significant difference between the indicator of social interactions in the two neighborhoods of Sahraie and Fattah. However, there was a significant difference (sig. =0.006) between the two neighborhoods of Fattah and Karmandan⁶⁴ on the indicator of social interaction.

⁶⁴ As stated in chapter 4, Sahraie with Fattah and Fattah with Karmandan are capable for comparison in this study.

Neighborhood	Rate of social connection occurrence inside the neighborhood	Number of your neighbors that you know	Rate of relationship intensity With neighbors	Rate of gathering with neighbors	Indicator of Social Interaction
Sahraie	2,76	3,03	2,97	2,98	2,94
Fattah	2,90	3	3,09	2,96	2,99
Karmandan	3,27	3,28	3,38	3,04	3,25

Table 23. The statistical means for indicator of Social Interaction and its 4 items in Sahraie, Fattah, and Karmandan. Every item was asked in a five-point scale.

As stated before, the quality of social interactions in these neighborhoods was examined by asking interviewees about the kinds⁶⁵ of social connection they shared with their neighbors. In Sahraie, the two factors of “greeting and asking about health”, and “small talk and discussing problems” with 69.2 and 20.08 percent respectively were the most important social connections. In Fattah similar to Sahraie, “greeting and asking about health” and “small talk and discussing problems” with 70.7 and 17.2 percent were the most significant kinds of social interactions. In Karmandan, these two kinds with 61.8 and 13.7 percent respectively, in addition to “ordinary chat” with 10.8 percent were the most important kinds of interactions among the residents.

The most important settings of social interactions in outdoor spaces in the two neighborhoods of Sahraie and Fattah were on sidewalks, in front of houses, and on the streets. In Karmandan in addition to sidewalks, in front of houses, and streets, other locations such as the park and in front of the shops were significant outdoor settings for social interactions. Additionally, the yards as a spaces belonging to the houses were important for social interaction, especially for females.

The observed social activities and interactions of residents were explained in the last section. Social interactions occurred in all places in Sahraie. The sidewalks and the streets were places that usually all residents, especially children, were using as the interaction settings. As mentioned before, the merging of the two textures of organic and ordered grid form had created some corner and places for interactions. Also, the central part of this neighborhood worked as a main behavior center, and many behavior settings were shaped in it. In spite of the crowded features of this neighborhood and conflicts within many settings, people adapted their behavior to these settings (Figure 48).



Figure 48: Although every space was used for social interactions in Sahraie, most of these behavior settings were conflictual and competitive.

⁶⁵ These kinds were asked in five categories (see Appendix B, social interaction part).

In Fattah, the interaction settings occurred on streets and sidewalks because of the absence of open spaces. As in Sahraie, the social behavior of inhabitants had been adapted to the existing spaces although the absence of appropriate spaces caused interaction settings (special play of children) to take place in a conflicting and competitive manner (Figure 49).



Figure 49: Absence of suitable spaces for interactions of residents resulted in creating competitive and conflicting interaction behavior and settings in Fattah.

In Karmandan the existence of many suitable spaces facilitated a wide variety of appropriate interaction settings. These adequate spaces brought about cooperative interactions inside the neighborhood (Figure 50).



Figure 50: Appropriate spaces in Karmandan led to creating cooperative interactions and interaction settings.

5.3.2.1.3 Privacy and Crowding

The situation of privacy in these neighborhoods, as one of the indicators of fulfillment of needs, was examined through the interviews by asking the opinion of residents about 5 items (see the following table) on a five-point scale from serious problem (1) to completely appropriate (5). The indicator of privacy was computed with these 5 items and with reliability of $\alpha = 0.70$.

This situation of most of the privacy items in Sahraie and Karmandan were better than that in Fattah (Table 24). However, based on *Independent Samples T-test*, the indicator of privacy showed a significant difference (sig. = 0.000) only between the two neighborhoods of Fattah and Karmandan.⁶⁶

Neighborhood	Noise of the street	Noise of the neighbors	Interference of neighbors	Crowding	Visual privacy (Eshraf)	Indicator of Privacy
Sahraie	3,36	3,64	3,79	2,97	3,36	3,42
Fattah	3,17	3,63	3,79	2,90	3,33	3,29
Karmandan	3,68	3,89	3,93	3,53	3,71	3,83

Table 24: The statistical means for indicator of Privacy and its items. Every item was asked in a five-point scale ranging from serious problem (1) to completely appropriate (5).

As mentioned before, population density, as an indicator of crowding, has been examined in this study based on the average area of residence, the average area of lot per person, and size of the household. The average area of lot and residence per person was 17.8 and 19.6 m² in Sahraie, 16.1 and 19.7 m² in Fattah, and 27.1 and 27.4 in Karmandan, respectively. Also, the household size in Sahraie, Fattah, and Karmandan was 4, 4.5, and 4.1 persons, respectively.

The opinion of respondents about the situation of crowding was similar in Sahraie and Fattah. The mean of this indicator on a five-point scale from serious problem (1 score) to completely appropriate (5 score) was 2.97, 2.90 and 3.53 in Sahraie, Fattah, and Karmandan, respectively. Based on *Independent Samples T-test*, there was a significant (sig. = .000) difference between the indicator of crowding in Fattah and Karmandan.

According to some observations in these neighborhoods, the situation of privacy and crowding in both Fattah and Sahraie was not good because of a lack of appropriate spaces for social activities and children's play. But in Karmandan, because of the existence of many suitable spaces – despite sharing a common basic behavior with Fattah and Sahraie – and more accurate hierarchy of physical territory, the situation of these two indicators was very good.

5.3.2.2 Social Safety

The situation of social safety in these neighborhoods similar to that in the last neighborhoods were examined through 5 items (see Table 25) and based on a five-point scale from serious problem (1) to completely appropriate (5). The reliability for measurement of this indicator through its items was $\alpha = 0.74$.

⁶⁶ This comparison has been made only between two neighborhoods of Sahraie and Fattah, and also Fattah and Karmandan.

According to *Independent Samples T-test* the indicator of social safety did not show any significant difference between these neighborhoods.

Neighborhood	Police protection	Burglaries	Ruffian and Violence	Drug abuse	Neighbor's control	Indicator of Safety
Sahraie	3,39	2,86	2,70	3,08	3,72	3,15
Fattah	3,27	2,89	2,99	3,06	3,65	3,17
Karmandan	3,43	2,83	2,99	3,05	3,91	3,24

Table 25: The statistical means for indicator of Social Safety and its items. Every item was asked in a five-point scale ranges from serious problem (1) to completely appropriate (5).

5.3.2.3 Sense of Community

The results of sense of community in these neighborhoods are presented in Table 26. As stated before, the reliability of shaping sense of community has been calculated by corrected item or total correlations among the items of every indicator of this sense as well as Cronbach's α . As can be seen in table 26, all items had high correlations with each other. Additionally, Cronbach's α for sense of community was 0.92 in Sahraie and 0.91 in both Fattah and Karmandan.

The means for "Belonging and Attachment", "Shared Values and Cooperation", "Influence", "Emotional Connections and Ties", and also "Sense of Community" were 3.33, 3.24, 3.41, 3.36, and 3.34 in Sahraie, 3.30, 3.02, 3.09, 3.09, and 3.12 in Fattah, and 3.90, 3.40, 3.30, 3.38, and 3.49 in Karmandan, respectively. The mean level for the sense of community and its indicators in all three neighborhoods were between intermediate to upper intermediate – closer to intermediate, except for the indicator of Belonging and Attachment in Karmandan. The mean situation of sense of community and its indicators in Sahraie and Karmandan were in a better situation than that in Fattah. Following the aforementioned method of this research, the neighborhoods of Sahraie and Fattah, as well as Fattah and Karmandan are acceptable for comparison. Based on *Independent Samples T-test*, the factor of Sense of Community and its indicators (except indicator of Belonging and Attachment between Fattah and Sahraie) demonstrated significant differences between Sahraie and Fattah and also between Fattah and Karmandan (see Table 26).

Sense of Community	Sense of Community											
	Emotional Connection and Ties	Influence	Shared Values and Cooperation	Belonging and Attachment	Reliability						Compare Mean: T-Test	
					Corrected Item	Cronbach's α			Mean			
Statements	Sa	Fa	K	Sa	Fa	K	Sa	Fa	K	Sa & Fa	Fa & K	
• I think my neighborhood is a good place for me to live.	,76	,76	,65	,82	,86	,76	3,34	3,30	3,90	—	Sig.= ,000	
• I feel at home in my neighborhood.	,63	,73	,52									
• I am proud to tell others where I live.	,73	,67	,70									
• I expect to live in this neighborhood for a long time.	,57	,69	,58									
• It is important to me to be a part of this neighborhood.	,40	,56	,30									
• If there is a problem, the community can solve it.	,42	,43	,41	,89	,90	,79	3,24	3,02	3,40	Sig.= ,038	Sig.= ,000	
• I really fit in with my neighbors.	,71	,77	,58									
• My neighbors and I want the same thing from this neighborhood.	,80	,83	,55									
• I agree with the values and beliefs of other neighbors.	,87	,89	,67									
• I feel similar to most people in my neighborhood.	,87	,87	,66									
• Neighbors ask your opinions; you ask your neighbors' opinions.	,55	,55	,55	,72	,72	,73	3,38	3,10	3,32	Sig.= ,005	Sig.= ,029	
• I feel that I am an important part of this community.	,40	,41	,51									
• I care about what my neighbors think about my actions.	,57	,52	,51									
• I am interested in knowing what goes on in the community.	,53	,54	,52									
• I know a lot of neighbors by names.	,64	,52	,68	,88	,83	,84	3,36	3,09	3,38	Sig.= ,004	Sig.= ,001	
• My neighbors and I visit each other frequently.	,69	,58	,54									
• I know most people who run a neighborhood businesses or stores.	,49	,45	,58									
• Friends in my community are part of my everyday activity.	,61	,56	,63									
• Neighbors usually support each other in problems.	,71	,59	,60									
• I can always find someone to talk to.	,64	,68	,60									
• If I need advice about something, I could go to someone in my neighborhood.	,73	,56	,57									
• I borrow things and exchange favors with my neighbors.	,63	,57	,42									
Sense of Community				,92	,91	,91	3,33	3,12	3,49	Sig.= ,009	Sig.= ,000	

Table 26: Sense of Community in Sahraie (Sa), Fatah (Fa), and Karmandan (K). This sense was computed by 4 indicators. Every indicator was measured by some items based on likert scale. Response alternative for all items was with a five-point scale ranging from strongly disagree (1) to strongly agree (5).

Chapter 6: Discussion and Conclusion

In this part the results will be discussed in the light of the neighborhoods in the three income levels. The discussion will be followed by a conclusion, remarks on the limitation of the study, planning and design implications, and recommendations for future research.

6.1 Discussion

Based on the main classifications of the neighborhoods in this research, the discussion of the findings will be presented in this part.

6.1.1 High-Income Neighborhoods

In the preceding chapter, the two neighborhoods of Jami and Farhad were demonstrated to be typical for high-income residential areas in Mashad. These neighborhoods are homogenous in terms of their socio-economic and cultural status based on the control and examination of many variables in this study. Also, the respondents' social personality and length of their residence in these neighborhoods were homogenized through the control of these factors. This was done to alleviate any intervening effect of these variables on the social behavior of inhabitants.

Many points of difference were found between the physical attributes of these two neighborhoods. Farhad's physical aspects are more common to high class residential areas of Mashad. The straight grid pattern with row housing without open spaces and with a lack of proper public facilities on a neighborhood scale are some of the current situations of this residential area. However, the big houses and apartments of relatively good quality, the many sumptuous facades and high status symbols (sometimes with an absence of aesthetic proportion and harmony but with expensive materials applied) seem to make the neighborhood appear in better condition in comparison with other income level residential areas. Jami neighborhood's pattern⁶⁷ is not so typical of residential areas of Mashad. This neighborhood creates more opportunities for its inhabitants due to the centralization of facilities and the existence of more open space. Furthermore, more attention to the hierarchy of access with cul-de-sacs and more suitable sidewalks system improve the physical quality of this neighborhood. Additionally, the situation of the neighborhood's facades and houses from outside –big houses with luxurious facades– is similar to Farhad (see chapter 5).

The main physical differences between these two neighborhoods based on the examined indicators and factors are in (1) *Components*: the existence of conveniences like an open space with a park, a small playground, and a group of shops with connections to the open space, and a high school in Jami are the most significant differences between the components of these neighborhoods; (2) *Texture*: the most important distinctions between these two neighborhoods are in their layout compositions and their access systems; and (3) *Neighborhoodscape*: the situation of neighborhoodscape because of overall layout and more diversity of spaces, existence of the park and better vegetation system is better in Jami.

Based on the opinion of residents, the situation of indicators of *fulfillment of physical needs* was between intermediate and upper intermediate level in both neighborhoods. The indicators of *conveniences, overall layout and organization of neighborhood, aesthetic appeal, physical safety, and housing* –inside houses– showed significant differences between these

⁶⁷ It is almost patterned on the basis of the notion of Perry's *neighborhood unit*.

neighborhoods. Moreover, the situation of all of these indicators except for *housing* was better in Jami.

The physical attributes of these neighborhoods indicate that the characteristics of outdoor spaces of Jami have more *affordances* for the neighborhood community. The term “*affordances*” coined by Gibson (1979) refers to the physical properties of the configuration of an object or setting that enables it to be used by some activity. The affordances of a built environment are what it offers in accordance with the characteristics of its configuration (P. 129). The concepts of “*potential environment*” and “*effective environment*” can help to understand the cognition of *affordances* by people. Lang (1987: 103) points out that “the set of affordances of the environment at a particular location constitutes the *potential environment* for human behavior at that place,” and “the *effective environment* consists of those elements that are meaningful to the user or observer of a potential environment.” Therefore, Jami has more *potential spaces* for fulfillment of physical and social needs, and also for the social behavior and activities of inhabitants.

The surveyed social variables indicate a common base of social characteristics and behavior in both neighborhoods. The location of children’s schools in both areas was close to the neighborhood. However, the place of work of adults was far from their neighborhoods. Most residents in these neighborhoods were interested in spending their leisure time inside their homes with their families or with their friends and acquaintances outside these areas. Also, they were not interested in having intimate relationship with their neighbors –i.e. one of the residents of Jami prided himself on not knowing any one of his neighbors. Furthermore, they announced that their children spent their time at home or in some extracurricular or recreational activities like taking additional courses, going to the gym, etc. They believed that outdoor spaces were not secure for their children because of both social and physical aspects. These issues imply that residents in both neighborhoods tend to select their social connections and interactions with freedom through their network of friends and acquaintances. Also, they would like to be free in their choice of their desired place of their social connections, work, and school.

In spite of the existence of common ground in the social attributes of the inhabitants of these neighborhoods, most of the examined social indicators in relation to the inside sphere of these communities were different. Most of the residents of these areas were not highly interested in having a relationship with their neighbors; however, spending their leisure time with neighbors was to some degree significant for both male and female residents of Jami –this indicator was almost zero in Farhad. Also, inside the neighborhood as a place for spending leisure time in Jami was significant, especially for those under 19 and the elderly. Additionally, the most important location of social interaction in both neighborhoods was in front of the house, on the streets, and on sidewalks; nevertheless, using the park in Jami as a place for social interactions was significant.

These activities indicate that outdoor spaces of Jami are more *effective* (see the above definition of *effective environment* by Lang) for its residents in terms of social connections and interactions. In addition, the absence of suitable spaces for social interactions in Farhad leads to the low level of the residents’ social interactions.

Based on the opinion of the residents, the status of most of the examined social factors and indicators was between intermediate to upper intermediate level. Meanwhile, the indicators of *social interaction*, *privacy*, and also *sense of community* and two of its indicators –*belonging and attachment*, and *influence*– demonstrated significant differences between the neighborhoods. The condition of all of these indicators was better in Jami. Additionally, the

situation of territory because of the existence of more precise territorial hierarchy was better in Jami.

The above discussions clarify that people in both neighborhoods were not interested in having intimate relationship with their neighbors and they would like to be free in the selection of the kind and the place of their social connections, and also the persons that they want to relate with; however, the better *affordances* in outdoor spaces of Jami provide higher probability for creation of social connections, positive interactions, and a sense of community. Hence, the more capable spaces, and the appropriate condition of texture and neighborhoodscape lead to the promotion of most of the examined social indicators of Jami in comparison to the Farhad neighborhood.

6.1.2 Middle-Income Neighborhoods

The two neighborhoods of Syed-Razi and Iraj-Mirza are typical examples of the middle-income residential areas in Mashad. These selected neighborhoods are homogenous in terms of socio-economic and cultural status. Also, the social personality of interviewees and the length of their living in these neighborhoods were homogenized through the control of them. Although both kinds of the neighborhood patterns exist in Mashad, the Iraj-Mirza schema is more common of Mashad's middle-income residential areas: The straight grid texture without open spaces or central area, with row housing and middle status homes, and a lack of proper public services at the local scale.

The main physical differences between these neighborhoods based on the examined factors and indicators are in *components*. Conveniences and services such as an open space with a park, a small playground, and a group of stores, and also a parking lot in Syed-Razi, and facilities such as an elementary school, a kindergarten, a mosque, and a group of stores –beside the mosque and the school on one of the streets– in Iraj-Mirza are the most significant features to illustrate differences between these neighborhoods. Since the composition of the open space in Syed-Razi is not particularly effective (see chapter 5) and also due to the similarity of the density and access systems of these neighborhoods, the textures of these two neighborhoods aren't very different. However, the overall layout and construction of Syed-Razi appears to be in a better situation than in Iraj-Mirza because of the existence of a physical centre with open space and some facilities. Additionally, the circumstance of neighborhoodscape in Syed-Razi is slightly better than those in Iraj-Mirza due to the park and vegetation system.

Based on the residents' opinions, the situation of indicators of *fulfillment of physical needs* was between intermediate and upper intermediate level in both neighborhoods.⁶⁸ The *conveniences, layout and organization of neighborhood, housing, and physical safety* –as some of surveyed indicators of *fulfillment of physical needs*– showed significant differences between these two neighborhoods. Based on the opinion of the inhabitants, the situation of *conveniences and housing* was better in Iraj-Mirza and the situation of *layout and organization of neighborhood and physical safety* –based on observation– was better in Syed-Razi.

A point of comparison in the physical attributes of these neighborhoods mainly refers to the differences between their *components* and *overall layout*. Although the availability of a facility can have some advantages for a neighborhood, it depends on desirability of neighborhood's residents (Hester 1975:98). Based on the opinion of the residents, the

⁶⁸ Usually the rate of expectation of people is different based on their social status. For instance, a perfect house for a person for the middle class may not be suitable for a person in a high class. Therefore, a comparison of the status of fulfillment of need is not correct between different classes.

condition of *housing* and *conveniences* –as indicators of *components*– was more desirable in Iraj-Mirza; and the condition of *layout and organization* based on both opinion of inhabitants and observation was better in Syed-Razi. In other words, the condition of *components* was better in Iraj-Mirza and the situation of outdoor spaces was better in Syed-Razi.

The examined social variables indicate a common ground in the social characteristics and behavior in both communities. In both areas, schools for children were located at increasingly distant locations, the older the children were. Also, the place of work was usually far from neighborhoods. Most of the inhabitants of both areas were interested in spending their leisure time inside the houses or out of the neighborhoods, and accompanied by families or network of friends and acquaintances from areas outside of the neighborhoods. The neighborhood as a place for spending leisure time was important for the male group between 7-14 and the elderly in both areas. Meanwhile, in Syed-Razi other males and adult female groups were more inclined to use the outdoor spaces of the neighborhood. On the other hand, spending leisure time with neighbors was only significant for boys in the age range of 7-14 years. Lack of favorable spaces especially in Iraj-Mirza didn't impede the interactions of boys in these neighborhoods and they usually played in every corner of these neighborhoods. Therefore, the friendship networks were very significant in both neighborhoods.

However, the shortage of proper spaces in Iraj-Mirza and slight dissatisfaction of residents regarding the park spaces in Syed-Razi led to the lack of provision of *effective environments* for the creation of higher probability of social network for other ages inside these neighborhoods. These shortages create competitive and sometimes conflictive behavior and behavior settings in these neighborhoods –particularly for children.

Based on the opinion of residents, the situation of most of the examined social factors and indicators was between intermediate to upper intermediate level. The *privacy* and *crowding* were the only indicators that demonstrated significant differences between these neighborhoods.

As mentioned before, Keller (1968: 91) defines a neighborhood as an area with a special atmosphere. She suggests that this special atmosphere shows how the area looks and how people look at the area. Although the atmospheres of these neighborhoods were very similar to each other, the differences in the physical aspects of these areas imply that more suitable overall layout and organization of outdoor spaces of Syed-Razi brought about a better situation in terms of privacy and avoidance of crowding in this neighborhood.

6.1.3 Low-Income Neighborhoods

As mentioned before the three neighborhoods of Sahraie, Fattah, and Karmandan were selected as cases of low-income residential areas of Mashad. Based on the method of this study for the control of socio-economic and cultural variables, Sahraie and Fattah, and Karmandan and Fattah were recognized as appropriate cases for comparisons. In addition, similar to other neighborhoods with different income levels, the social personality of interviewees and the length of their residence in these neighborhoods were homogenized through the control of these factors –because of probability of their effect on social behavior. In what follows, the findings of these neighborhoods will be discussed based on the aforementioned acceptability argument for their comparison.

Sahraie and Fattah Neighborhoods

While both kinds of neighborhood patterns exist in Mashad, the Fattah schema is more frequent in low-income residential areas of Mashad: the straight grid texture without open spaces or a central area, with row housing and very narrow lots and low quality housing, as well as a lack of proper public services and conveniences at neighborhood level. In Sahraie, with contemporary alterations through the use of a grid structure, an attempt has been made to shape new orderly constructions within its old organic fabric. However, the main pivotal centre of its old rural texture has remained and works as a main structure and social behavior centre of the neighborhood. Low-income residents and consequently low quality houses with inadequate public services and urban conveniences in both neighborhoods have brought about the neighborhoods that suffers from much civic poverty.

The most important physical differences between these two neighborhoods based on examined indicators and factors are related to *texture* which refers to the style of organization and composition of different components and access. Fattah with a simple grid texture and straight streets collects the main facilities and different uses around its main streets. Also, the composition of access and housing systems are orderly and monotonous. The old organic texture of Sahraie has a strong and lively main structure around which most of the facilities of the neighborhood are shaped or directly connected. Additionally, the remaining organic paths depict disorderly features in some parts of the neighborhood.

The neighborhoods of these areas are not in a good state. Sahraie is more attractive because of the diversity of its organic texture –especially in its main centre. At the same time, Sahraie’s organic texture sometimes seems disorderly and in a worse condition than Fattah’s monotonous neighborhood due to the new interferences in its fabric and the loss of its inherent order.

Based on the opinion of residents, the situation of indicators of *fulfillment of physical needs* was close to the intermediate level in both neighborhoods.⁶⁹ The *services* and *conveniences* as *fulfillment of needs* indicators demonstrated significant differences between these two neighborhoods; and the situation of both of these indicators were better in Fattah. The condition of *physical safety* –based on the observations– was somewhat better in Sahraie. The physical characteristics of these neighborhoods relates to the major differences of texture with the existence of lively main structure in Sahraie against physical monotony in Fattah. The main centrality of Sahraie with its organic fabric has more *affordances* for its community. In other words, Sahraie has more potential spaces for the formation of the social interactions of its residents.

The examined social variables indicate a common ground of social characteristics and behavior in both communities. In these neighborhoods the locations of schools for boys under 14 were inside the neighborhoods, and the place of school or work for other male age groups was near or far from neighborhood. Also, the place of school and work for females of these neighborhoods were inside or close to the neighborhoods. On the other hand, for most of the inhabitants of both areas the first interesting place for spending the leisure time was inside the houses accompanied by family members. “Inside neighborhood” as a place for spending leisure time was significant for boys under 18, and for the elderly males, as well as to some extent for girls in the age group 7-14. The second choice of group for spending spare time after family, for boys between 7 and 18, was network of friends inside the neighborhoods.

⁶⁹ Usually the rate of expectation of people is different based on their social status. For instance, a completely appropriate house for a person in low social status may not be suitable for a person in middle social level. Therefore, comparison status of fulfillment of need is not correct between different classes.

However, most of the males beyond 14 were more interested in spending their time with friends or acquaintances out of the neighborhoods. Also, spending leisure time with neighbors in Sahraie and Fattah for female age range of 7-14 and for adults was important to some extent. This information refers to the importance of the *place of neighborhood* as the location of school and spending leisure time in these low-income neighborhoods.

Based on the opinion of residents, the status of most of examined social factors and indicators was normally close to intermediate. The indicators of *social interaction*, *privacy*, and *crowding* did not show significant differences in these neighborhoods. The kinds of social interactions and their settings were usually similar in both areas. These settings were shaped in every place and corner of the neighborhoods due to the lack of proper spaces. However, the main centre of Sahraie as an *activity system* was a very important place for shaping the social behavior and different social behavior settings of its residents. Lack of suitable spaces did not function as a hindrance to the social interactions of the residents, especially children, in these neighborhoods. However, people had to adapt their actions and behavior to the existing spaces. The absence of adaptable and flexible spaces –particularly in Fattah– for behavior and activities of people led to the emergence of many *conflictive* and *competitive* behavior and behavior settings (see Hester’s argument on social interaction in chapter 3). Consequently, undesirable crowding took place in these neighborhoods.

The most significant differences between surveyed social factors of these neighborhoods were in terms of the *sense of community* and three of its related indicators of *shared values and cooperation*, *influence*, and *emotional connection and ties*. The status of this factor and its indicators was between intermediate and upper intermediate in both neighborhoods; however, the situation of all of these variables was better in Sahraie.

The comparison of these two neighborhoods implies that a lack of proper spaces does not block the creation of social connections and interactions of the residents of these low-income neighborhoods. This issue indicates that if people tend or expect to have social interaction with each other, they will find the means to do so in any built environment (Lang 1987:163). However, the existence of more *effective spaces* in Sahraie leads to the higher *sense of community* and its indicators.⁷⁰ This issue implies that the existence of effective spaces can lead to the improvement of the social capacity of a residential area.

Fattah and Karmandan Neighborhoods

As stated in the preceding section, the Fattah neighborhood displays a pattern typical of low-income residential areas in Mashad. In contrast, Karmandan neighborhood –which has a layout based on the concept of *Perry’s neighborhood unit*– has been selected as an exception for better understanding the impact of physical features on social aspects in residential areas. This selection is due to the remarkable layout and organization of Karmandan as well as its spatial construction and components. Although both Fattah and Karmandan are located in the low-income residential areas, the spatial pattern and variety of open spaces of Karmandan are very striking, even in comparison to high-income neighborhoods.

Based on the examined indicators and factors, the most important physical differences between these two neighborhoods are in terms of (1) *Components*: the existence of open spaces and a park with a playground, a central market, and different schools for both genders

⁷⁰ The sense of community is significant as a catalyst influencing other social factors like social capital (Temkin and Rohe 1998: 61-88, Lochner et al 1999: 259-270), sense of place (Butz 1997: 1-25), social participation (Goepping and Baglioni 1985: 507-523), community capacity (Foster-Fishman, et al. 2007: 91-106), etc (see sense of community in chapter 3).

in Karmandan; (2) *Texture*: the most important distinctions of these neighborhoods are in composition of the overall layout of the neighborhoods, their access systems, and also their density; (3) *Neighborhoodscape*: the state of neighborhoodscape is entirely better in Karmandan because of the overall layout, higher diversity of spaces, existence of the park, and remarkable vegetation system; and (4) *Boundaries*: Karmandan, in contrast to Fattah, has clear boundaries and more precise territorial hierarchy.

Based on the opinion of residents, the situation of the indicators of *fulfillment of physical needs* was close to intermediate in Fattah, and between intermediate and upper intermediate in Karmandan. The results of all of these indicators showed significant differences between these two neighborhoods. The indicators of *services, conveniences, overall layout and organization of neighborhood, aesthetic appeal, physical safety, and housing* –inside houses– had a better situation in Karmandan. In addition, although the housing system and overall layout and organization of Karmandan were better in comparison to Fattah, this neighborhood still suffered from many low status symbols and civic poverty –especially because of low quality of the houses.

The physical attributes of these neighborhoods indicate that the characteristics of outdoor spaces of Karmandan have more *affordances* and it can *fit* more with the behavior and needs of its residents. In other words, Karmandan encompasses more *potential spaces* with more *adaptability* and *flexibility* for the formation of the social behavior and activities of its residents. The term *fit* (Alexander 1964: 15-27) like the word *affordance* explains the relationship between behavior pattern and physical environment pattern. The *fit* of a settlement as Lynch argues (1981: 152-167) refers to how well its spatial and temporal patterns match the behavior of its residents. Thus *fit* is defined as the match between action and form. Also, he indicates that the concept of *fit* is connected to such terms as *adaptability* and *flexibility*. An “*adaptable place*” is one in which activities and forms are well fitted to each other; and a “*flexible space*” is one that is easy to modify to afford different activities (Lang 1987: 119).

The social variables investigated indicate a common-ground of social activities for both communities. Inside neighborhoods as a place of school for boys younger than 14 years were significant in both areas. Also, the location of school and work place for other males groups was usually close to or far from both of the neighborhoods. On the other hand, the proximity of school and workplace to the neighborhood was usually more important for females in these communities. Moreover, similarly to other neighborhoods, the first tendency of inhabitants of these areas for spending leisure time was inside the houses accompanied by family members. Inside neighborhood as a place for spending spare time was a significant location for boys under 18, elderly males, and to some extent for girls within the age range of 7-14. The second group that 7 and 18 year old boys tended to spend their leisure time with was their network of friends inside the neighborhoods. However, most males after 14 were more interested in spending their time with friends out of their neighborhoods. Meanwhile, spending leisure time with neighbors for female age range of 7-14 was slightly important. This finding refers to the importance of the significance of the inside neighborhood as a place of school and spending leisure time in these low-income neighborhoods.

In spite of the existence of common ground in the social activities of these neighborhoods' inhabitants, difference were found with reference to all of the examined social indicators –except social safety– in relation to the inside sphere of these communities. The indicators of *social interaction, privacy, territorial hierarchy, crowding, and of sense of community* and all of its indicators demonstrated significant differences between these neighborhoods, and the situation for all of these indicators was better in Karmandan. The overall means for these

indicators was usually close to intermediate in Fattah, and between intermediate and upper intermediate in Karmandan.

Lack of proper spaces had not blocked social interactions in Fattah, but, people had to adapt their actions and behavior to the available spaces. The absence of adaptable and flexible spaces for behavior and activity of people led to the emergence of many *conflictive* and *competitive* behavior and behavior settings. Consequently, a crowding problem occurred in this neighborhood. In contrast, the existence of potential spaces with more adaptability and flexibility to social behavior of residents led to the higher rate of social factors like social interactions, sense of community and its indicators, privacy, and avoidance of crowding in Karmandan. Additionally, these *affordances* in physical characteristics shaped *cooperative* and *accommodative* interactions and settings in this neighborhood. These issues imply that the existence of effective spaces can bring about the higher social capacity for a residential area.

6.2 Conclusion

There is a multi-level approach underlying this research. A *macro-structural level* has sought to expand our general understanding about the situation of socio-physical aspects of residential areas of Iranian cities with special references to seven cases in Mashad city's residential areas. Also, a *micro-structural level* has attempted to improve understanding of the effect of physical characteristics on the social attributes of neighborhoods, based on these references.

As mentioned before, the selected study areas in every income level of this research include an area with the most common pattern in the neighborhoods of Mashad and another pattern that is often used in residential areas of this city. Additionally, an exceptional low-income area was chosen for a better understanding of the effect of physical aspects on social attributes of neighborhoods.

The physical characteristics of these most common residential cases –Farhad, Iraj-Mirza, and Fattah– indicate the pattern with simple grid streets and row housing systems that suffers from lack of appropriate facilities and services at a local scale. Specifically, the absence of vital spaces like open spaces, parks, and playgrounds for social activities are the most salient problems of these areas. Of course, the quality of spaces, houses, and public services in these common patterns decreased from high-income to low-income neighborhoods.

The physical attributes of every other selected area were in a better situation in comparison to the most common pattern of every income level. Existence of open spaces or centrality in these neighborhoods accompanied by better equipped spaces and conveniences create better circumstances in these neighborhoods.

The social attributes of these neighborhoods imply a common ground of social characteristics among the residents of every income level. The inhabitants of high-income areas do not have high affiliation motive for connection and bonding with their neighbors. They would like to set themselves free from the limitations of their neighborhood's locations through selecting their desired kinds, persons, and places of social interactions⁷¹. The findings of this study show that the rate of this tendency decreases from high to low-income neighborhoods. In other words, the neighborhood's local networks vary in different income level neighborhoods. In low-income neighborhoods the rate is higher and in high-income neighborhoods is lower

⁷¹ Although people especially in high-income neighborhoods don't tend to have high affiliation motive with their neighbors, they have high sense of belonging and attachment to their neighborhoods.

than the other income level neighborhoods. This subject indicates –as many scholars point out (see chapter 3)– that we are moving away from communities based on traditional values and emotional bonds towards communities based on individualism, rationalism, and utilitarianism. This in turn means that these neighborhoods as communities of place do not function successfully as communities of interest. However, the role of community of interest is more significant for low-income neighborhoods. Meanwhile, it must be emphasized that the role of neighborhoods as places of residence are really significant in all examined neighborhoods. The comparisons made between the neighborhoods on every class level reveal that a lack of *affordances* and proper spaces in the most common patterns of all income levels leads to a lower probability and possibility for the creation of some or all of the examined social attributes like social connections, positive interactions, fulfillment of social needs, and sense of community and its indicators.

While the lack of physical affordances in the common pattern of high-income neighborhood could be resolved through the economic ability of residents⁷², this issue in the common pattern neighborhood of middle-income and particularly in low-income neighborhoods leads to the formation of some social problems and lowering the fulfillment level of social needs like crowding and privacy and thus shaping conflicting and competitive social interactions and settings.

Therefore, the findings imply that a shortage of *affordance* spaces for social life areas bring about a situation in which the residents of high class neighborhoods adapt and accommodate their behavior to their neighborhoods; the inhabitants of the middle-income tolerate the circumstances of their neighborhoods; and finally, the residents of low-income neighborhoods suffer because of the deficiencies of their neighborhoods' spaces. Furthermore, the result of this study underscores that the scope of a neighborhood as a place for play and growth of children is very important in middle-income and particularly in low-income neighborhoods. The absence of appropriate outdoor spaces on the one hand and the inadequate size of houses with a lack of proper spaces⁷³ lead to burgeoning social problems in these areas.

The spatial crises in Iranian cities emphasized by many Iranian scholars (see chapter 2) demonstrate its attributes and its effects on the social aspects of residential areas and their inhabitants in this research. Starting from 1930, the changes during the contemporary period of Iranian cities including Mashad have created a new lifestyle through the urban society. This research, by investigating the space-related social behavior of inhabitants in residential areas, has tried to raise awareness toward the built residential areas of Iran and their influences on some of the problems of urban society. Today, by moving away from traditional society based on family relationships to urban society, we must prepare, change, and equip many spaces of life toward requirements of the new life and also towards the future.

As stated above, the *micro-structural level* of this study has tried to contribute to a better understanding of the effect of physical characteristics of residential areas on social attributes of inhabitants in outdoor spaces. Although, the social activities of the surveyed neighborhoods show a common ground of social behavior in every income level, the comparison between neighborhoods at every income level indicates that an appropriate situation in physical characteristics and existence of high affordances in spaces can result in the promotion of social attributes of community within the area of the neighborhood.

⁷² By using outside facilities in scale of city and sending their children to recreational activities outside the neighborhood.

⁷³ Particularly in low income neighborhoods.

Meanwhile, the existence or lack of proper outdoor spaces in a neighborhood is not a precise and definitive agent for the determination of the social interactions. If people desire to have social interaction with their neighbors they will usually find the means in almost any built environment. The physical characteristics of residential areas and their affordances –as Rapoport points out (1977: 299)– can only be inhibiting, facilitating or neutral for social activities. The findings on low-income neighborhoods underscore this subject. People in all of the surveyed low-income neighborhoods have high social interactions in the sphere of neighborhoods. Lack of suitable spaces in some of the low-income neighborhoods–Fattah and Sahraie– do not hinder the creation of social interactions. These shortages lead residents to adapt their social behavior to existing spaces. Consequently, many conflicting and competitive settings and interactions occur in the outdoor spaces of these neighborhoods. In contrast, the existence of proper spaces for different activities facilitated social activities and shaped cooperative social interaction and settings in one of the low class neighborhoods –Karmandan.⁷⁴ On the other hand, lack of appropriate spaces in middle-income neighborhoods did not determine the behavior pattern of the residents. However, the shortage of suitable spaces, –especially in one of these neighborhoods, within which no open space is located (Iraj-Mirza)– led to the shaping of competitive settings and social interactions, particularly for children in the outdoor spaces of the neighborhoods. Additionally, absence of appropriate spaces in the high-income neighborhood indicate that inhabitants accommodate their behavior with these spaces and their social interaction significantly decreased in comparison with the other high-income neighborhood with more suitable physical aspects.

Therefore, as Lang (1987: 109) suggests, if the built residential areas can house and support desired activities, and can also create appropriate human interaction settings, they can fulfill most of the human social and physical needs and thus promote the sense of community as one of the indicators of social capital and social capacity for a society.

6.3 Planning and Design Implications

This research tries to create knowledge that develops our understanding of residential areas and the lifestyles of their residents in contemporary Iranian cities. Furthermore, it examines the effects of physical aspects on social attributes of neighborhoods. The findings are also suggestive as to showing ways by which planning and design can be more responsive to adapting and fitting residential areas with residents' behavior and for promoting their positive social attributes. Based on these points, a number of issues will be recommended for new planning and design of residential areas and also for the reconstruction and rehabilitation of existing neighborhoods:

- Localizing facilities in scale of neighborhoods;
- Centralizing facilities and developing a main spatial focus for the public use within the neighborhood;
- Considering appropriate composition of different components (such as open spaces, parks, playgrounds, shopping areas) and access systems with more diversity and flexibility in use;
- Setting different spatial focuses on a small scale for adjacent houses especially for low-income and middle-income neighborhoods; and
- Paying more attention to neighborhoodscape with general layout and composition of texture of neighborhood and its vegetation system.

⁷⁴ Despite a common ground of social behavior in all of these low-income neighborhoods

In addition, the following points will be recommended for the reconstruction and rehabilitation of current neighborhoods:

- Improving access hierarchy of neighborhood's streets in order to enhance territorial hierarchy, physical safety, control of vehicular movement and reinforce the sidewalk system;
- Redesigning of streets and sidewalks in order to shape better spaces in front of houses with more attention to pedestrians; and
- Localizing and centralizing facilities in neighborhoods with simple grid texture and shaping pivotal centers within them.

6.4 Limitations and Recommendations for Future Study

One of the most noticeable limitations of this research is related to its field work. In addition to the time limits and budget constraints, the most challenging part was to receive the permission from the municipality and related official organisations in Mashad for data collection stages. Initially, it was planned to conduct some part of the interview with deeper and open-ended questions based on ethnographic methods. But, because of the administrative problems in receiving permission and the need for an approval of the content of the questionnaire by the Ministry of Science in Iran, the author had to omit this part and change the entire questionnaire to multiple-choice and closed questions (with the exception of a few open-ended questions).⁷⁵

Lack of related research background in Iran, particularly in the field of environmental psychology and influence of built environments on social attributes of users, is another limitation to this study.

Limitations in terms of the geographical location of the study areas, on both the scale of city and pattern⁷⁶ of residential areas, may make the findings not generalizable to other cities of Iran and all other neighborhood patterns.

Since this research is one of the new inquiries aimed at expanding an understanding of the socio-physical aspects of residential areas in Iran and the examination of lifestyle and behavior of inhabitants in the sphere of neighborhoods, much more integrated research covering a similar topical area is needed.

Nonetheless, the limitations and results of this study point to many directions for future study. The use of different methods in a variety of patterns of residential areas of different cities among different cultures and ethnicities in Iran could be important considerations for future research. Additionally, while many factors and indicators were examined in this study, the limited number of study areas demonstrated that the effect of individual physical factors on social attributes could not be verified in these neighborhoods. On the other hand, time limitations prevented us from examining some different directions of social aspects –e.g. territorial behavior. Therefore, investigating the effect of different individual physical characteristics on different social behavior and social indicators of residential areas is another area for future research.

⁷⁵ Fortunately, finally some of the members of an institute of human and social researches in Jahad University of Mashad agreed to give limited help and consultation in data gathering and examination of validity of selected study areas during the 4 months of the field study.

⁷⁶ Although the selected areas' patterns covered almost 90 percent of residential areas of Mashad, the results cannot be generalized for high-rise and complex housing.

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APPENDIX A

Indicators and variables

1. Physical Attributes of Residential Areas

1.1. *Components*: Houses, Services, Conveniences

1.2. *Texture*:

1.2.1. *Composition* (mass-space): composition of residences and other activities (spatial composition), composition of density, and composition of access.

2.2.1. *Density*: number of residential units in a building, number of stories; the area of residential unit and lot; construction to lot ratio in a story, construction to lot ratio; and crowding with indicators of household size, area of residential unit per person, and area of lot per person.

3.2.1. *Access system*: hierarchy of accessibility, territorial hierarchy

1. 3. *Neighborhoodscape*: Aesthetic appeal, Facades of buildings, Streetscape, Order and Organization, Modernity and Age, Green spaces

1. 4. *Territory and boundary*

2. Social Aspects of Neighborhoods

2. 1. *Behavioral settings and activity systems in the built neighborhood*

2.1.1. Activity variation (sex, life-cycle age, location of work & school, and leisure time)

2.1.2. Interaction processes (cooperation....competition....conflict)

1.2.1.3. Social interaction (rate, kind, place)

2.2.1.3. Privacy and Crowding

2.2. *Sense of community*

2.2. 1. Belonging-Attachment (5 items)

2.2. 2. Influence (5 items)

2.2. 3. Shared value and Cooperation (4 items)

2.2. 4. Emotional connection and ties (Social support, Social interaction, Social network, 8 items)

3. Fulfillment of needs and the built neighborhood

3. 1. *Services*: Trash and Waste Removal; Street Requires Maintenance; Street Cleaning; Street Lighting; Distance to Public Transportation, Taxi & Bus.

3. 2. *Conveniences*: Park and Open Spaces; Distance to Health Services; Distance to Stores; Quality of Stores; Distance to Schools; Quality of Schools; Recreational Place; Cultural Opportunities; Religious Center (mosque, Hussein, etc).

3.3. *Layout and organization of neighborhood:* Accessibility; Areas of Lots and Residential Units; Form and Combination of Houses; Size of Residential Block; Adequate Sidewalks for Pedestrians; Population Growth and Increased Density; Density of Buildings; Repairing of Present House; Quality of Buildings; Parking Place; Traffic Congestion; Street Condition; Green Spaces.

3.4. *Aesthetic:* Deteriorated Buildings - modern and old; Facades of Buildings; Overall Layout of Neighborhood; Street Layout; Order.

3.5. *Social Safety:* Police Protection; Burglaries; Ruffians and Violence; Drug Abuse; Neighbor's Control.

3.6. *Privacy:* Noise of Street; Noise of Neighbors; Interference /Tampering of Neighbors; Population Density and Growth (crowding); Visual Privacy (Eshraf).

3.7. *Housing:* Type of House; Number of Residential Units; Number of Stories; Quality of Building; Material of Façade; Age of House; Area of Residential Unit; Area of Lot; Ownership of House; Personalization; Individual Private Room; Number of Rooms; Rate of Fulfillment of Needs of House for Family; Main Problems of House.

4. Economic Conditions of Neighborhoods

4.1. *Socio-Economical Status (SES):* Education, Occupation, and Area of Residential Unit (instead of: income)

4.2. *Ownership:* House or Apartment, Car and Type of Car

4.3. *Type of school:* Public and Private School

5. Cultural situation

5.1. Education

5.2. Occupation

5.3. Ethnic division

5.4. Duration of living in Neighborhood and Mashad

APPENDIX B

Questionnaire

General

1. Type of house unit:

Single family dwelling Apartment building Apartment block

2. Number of residential units in Building:.....

3. Setting position: North South Other

4. Number of storeys:.....

5. Material of the facade:.....

6. Age of house:.....

7. Area of residential unit:.....

8. Area of lot:.....

9. Do you own or rent this home (apartment)? Owner Tenant Other

10. (If you are an owner) Did you build this house? Yes No

11. Does every household member have a private bedroom? Yes No

12. How many bedrooms do you have?

13. How would you rate this home/apartment in meeting the needs of you and your family?

Very satisfied Satisfied Neither satisfied nor dissatisfied Dissatisfied

Very dissatisfied

14. What are the major problems of your house?.....

15. Where are you from?.....

16. (If you are not Mashadi) How long have you lived in Mashad?.....

17. What is the name of this neighborhood?

18. How long have you lived in this neighborhood?

19. How long have you lived in this home (apartment)?

20. Why did you move to this neighborhood?

Born, raised here

Spouse lived here

Family lived

here

Friends lived here

Location close to work and school

Good location, convenient

Good public services

Better neighborhood, nice neighborhood

Better neighborhood, nice social fabric

Reasonable housing prices (rents)

Better home (apartment)

Good schools

Good place to raise children

Safe neighborhood

Other

21. Do you plan to move from this neighborhood? Yes No

22. (If yes) Why?.....

23. Is there any organization or group in this neighborhood that deals with neighborhood issues or neighborhood problems? Yes No

24. Do you have a car? Yes No

25. Type of car:.....

26. Type of children's school: Public school Private school

27. The reason for choosing school Good quality Close to house
Financial problem Other

Social interaction

28. Where do your social interactions take place?

	Never	Rarely	Sometimes	Frequently	Always
Inside neighborhood
Outside neighborhood

29. How many of your neighbors do you know? None 1-3 3-6 6-10 More than 10

.....

30. How far is the extent of your relationship with your neighbors?

Very unfriendly Unfriendly Intermediate Friendly Very friendly

.....

31. What kind of interaction and connection do you have with your neighbors?

Greeting and asking about health issue Ordinary chat

Small talk and discussing problems Talking about individual problems and asking for others' opinion Close and intimate

32. Where do you get together with neighbors in the neighborhood?

In front of stores

In thoroughfares

Sidewalks

In front of house

Yard of house

Inside house

Others (name ...)

33. How often do you get together with your neighbors?

Never Rarely Sometimes Frequently

Always

.....

34. Where do you buy your essential items? Inside neighborhood

Outside neighborhood

35. Are there some stores in your neighborhood?

Grocery (super market) Fruit and Vegetable shop Bakery

Butchery Other

36. (If yes) How often do you use these stores for shopping?

Never Rarely Sometimes Frequently Always

.....

37. Is there a mosque which you could attend in your neighborhood? Yes No

38. (If yes) How often do you go there?

Never Rarely Sometimes Frequently Always

.....

Fulfillments of needs

39. We have a list of several issues which you may consider to be a problem or to be appropriate in your neighborhood. How would you rate these issues in your neighborhood?

Problems	Serious problem	Problem	Not a Problem	Appropriate	Completely Appropriate
Services					
Trash and waste removal					
Streets require maintenance					
Street cleaning					
Street lighting					
Distance to public transportation:					
Taxi					
Bus					
Conveniences					
Park and open spaces					
Distance to health services					
Quality of stores					
Distance to stores					
Distance to schools					
Quality of schools					
Recreational place					
Cultural opportunity (library, ...					
Religious centers (Mosque, Hossinie, ...					
Layout and organization of neighborhood					
Accessibility					
Areas of lots and residential units					
Form and combination of houses					
Size of Residential Block					
Adequate Sidewalks for pedestrians					
Population growth and increased density					
Density of Buildings					
Renovating of present house					
Quality of buildings					
Parking place					
Traffic congestion					
Street condition					
Green spaces					

Aesthetic					
Deteriorated buildings - modern and old					
Facades of buildings					
Overall layout of neighborhood					
Street layout					
Order					
Safety					
Police protection					
Burglaries					
Ruffians and Violence					
Drug abuse					
Neighbor's control					
Privacy					
Noise of street					
Noise of neighbors					
Interference and bothering of neighbors					
Crowding					
Visual privacy (Eshraf)					

40. What are the three most important problems in this neighborhood?

41. What are the three things about this neighborhood that you like best?

42. In general, how satisfied are you with this neighborhood?

Very satisfied

Satisfied

Neither satisfied nor dissatisfied

Dissatisfied

Very dissatisfied

Personality

43. What is your opinion about every item below?

	Strongly Disagree	Neither agree nor disagree	Agree	Strongly agree
Friends and acquaintances are part of my everyday life.				
I quickly communicate and fit in with others.				
I ask my friends opinion on different issues and problems.				
My friends and I visit or contact each other frequently.				
If I need advice about something, I could go to one of my friends.				

Sense of Community

44. What is your opinion about every item below?⁷⁷

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I think my neighborhood is a good place for me to live.					
I feel at home in my neighborhood.					
I am proud to tell others where I live.					
I expect to live in this neighborhood for a long time.					
It is important to me to be a part of this neighborhood.					
If there is a problem the community can solve it.					
I really fit in with my neighbors.					
My neighbors and I want the same thing from this neighborhood.					
I agree with the values and beliefs of other neighbors.					
I feel similar to most people in my neighborhood.					
Neighbors ask your opinions; you ask your neighbors' opinions.					
I feel that I am an important part of this community.					
I care about what my neighbors think about my actions.					
I'm interested in knowing what goes on in the community.					
I know a lot of neighbors by name.					
My neighbors and I visit each other frequently.					
I know most people who run a neighborhood business or store.					
Friends in my community are part of my everyday activity.					
Neighbors usually support each other in problem.					
I can always find someone to talk to.					
If I need advice about something, I could go to someone in my neighborhood.					
I borrow things and exchange favors with my neighbors.					

⁷⁷ This scale is designed based on Psychological sense of community (see Table C-1 in Appendix C and chapter 3) and also the pilot test during the field work of this research.

45. Characteristic of members of family and their activities

Interviewee	1)Characteristic of household					2)Work and school			
	Member		Sex	Age	Education	Occupation	Where		
							in neighborhood	near neighborhood	far from neighborhood
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								

Members			1	2	3	4	5	6	7	8	9	10
3-Lisure time	Where	In house										
		House of neighbors										
		Neighborhood										
		Out of neighborhood										
		Other										
	By which	Sport										
		Walking										
		Reading										
		Music										
		Playing										
		Shopping										
		Religious activities										
		Media(TV,radio,...)										
		P.C.										
		Internet										
		Visit neighbors										
		Party										
		Visit family										
		Other										
	With whom	Member of household										
		Neighbors										
		Friends & acquaintances out of neighborhood										
		Alone										
		Other										

APPENDIX C

Tables and Figures

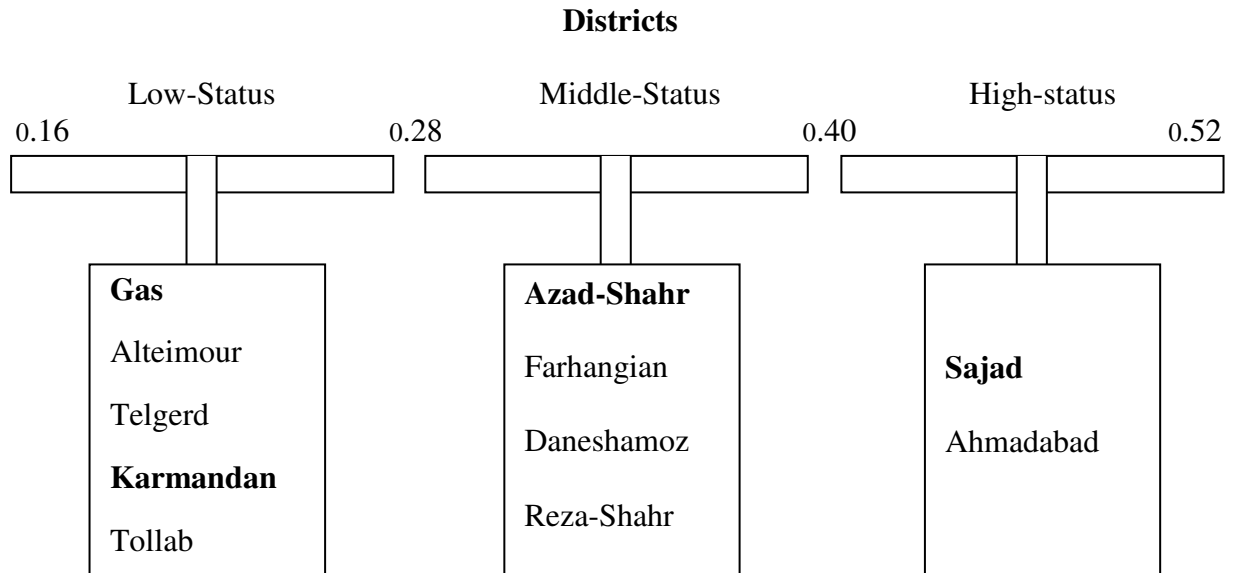


Figure C-1: The selection of study areas based on the rate of development of different districts of Mashad. According to *Morris Method*, the maximum and minimum development rates of different districts of Mashad were 0.52 and 0.16, respectively. The final selected districts were Gas, Azad-Shahr, and Sajad districts as low, middle, and high status areas. The development rate of these districts was 0.24, 0.35, and 0.44, respectively. Also, Karmandan (with 0.23 development rate) was chosen as an exceptional district among the low-status districts because of its exceptional layout and organization.

Table C-1: Summery of concepts used in the measurement of sense of community ^a. (NR: not reported)

Source: Lochner et al.1999:263-267

	Doolittle and MacDonald, 1978	Glynn, 1981	Bachrach and Zautra, 1985	Chavis et al., 1986	Davidson and Cotter, 1986; 1991	Davidson and Cotter, 1993	Perkins et al., 1990	Julian et al., 1997
<i>Membership</i>								
Participation in churches or local organizations (e.g. PTA, youth groups, business/civic groups)	✓	✓		✓	✓			
Have a sense of civic duty				✓				
Desire for organizational participation	✓							
Being a member of this community is like being a member of a group of friends		✓						✓
Feel that you belong/at home in community		✓	✓		✓	✓	✓	
<i>Influence</i>								
Involvement in political clubs/organizations or issue- or action- oriented groups				✓				
Political efficacy, e.g. I feel I can contribute to local/city politics if I want to				✓	✓			
Neighbors ask your opinions; you ask your neighbors opinions	✓							
Feel that I am an important part of this community		✓	✓					
Care about what my neighbors think of my actions							✓	
Interested in knowing what goes on in community		✓	✓					
Can trust community leaders		✓						✓
<i>Sharing of values/fulfillment of needs</i>								
Perception of block's ability to solve problems (e.g. if there is a problem the community can solve it)		✓		✓			✓	✓
Have influence on improving block/what this community is like		✓		✓			✓	
Perception of block/community, e.g.:				✓				
Good place for children to play; good place to raise teenagers	✓	✓						
Feel safe here		✓			✓			
Police in community are friendly; effective		✓						✓
Pretty					✓			
Important that community does well and care what community is like		✓		✓				✓
Satisfaction with block		✓	✓	✓	✓	✓		
Similarity with others, e.g.:								

(Continued on next page)

	Doolittle and MacDonald, 1978	Glynn, 1981	Bachrach and Zautra, 1985	Chavis et al., 1986	Davidson and Cotter, 1986; 1991	Davidson and Cotter, 1993	Perkins et al., 1990	Julian et al., 1997
People in community share the same values; degree to which you agree with values and beliefs of neighbors		✓	✓	✓			✓	
Feel similar to most people in my community		✓						✓
Feel good when someone does something good for my community		✓						✓
Believe that what is good for my community is good for me; my neighbors and I want the same things from this community		✓					✓	✓
<i>Shared Emotional Connection</i>								
Own or rent home				✓				
Planned length of residency		✓		✓			✓	
Length of residency	✓	✓		✓				
Neighboring patterns and relationships with people in neighborhood, e.g.:								
Number of neighbors one can identify by first name or recognize	✓	✓		✓				
Visited by neighbors frequently; visit neighbors frequently	✓			✓				
Number of people known well enough to visit; know most of the adult residents in the neighborhood	✓						✓	
Number of people who run a business or store in community one can identify by first name		✓						
Friends in my community are part of my everyday activities		✓						✓
People in neighborhood know/like each other; people on this block generally don't get along	✓				✓		✓	
Do/do not like my neighbors		✓			✓			
Difficult to make good friends here		✓			✓			
Very few of my neighbors know me				✓			✓	
<i>Attachment to the community, e.g.:</i>								
My neighborhood is a good place for me to live; it is important for me to live here		✓					✓	
Like my neighborhood/house					✓	✓		
Proud to tell others where I live					✓	✓		
Would be sorry if I had to move			✓		✓	✓		
<i>Supportive relationships, e.g.:</i>								
People can depend on each other/willing to help		✓						✓

(Continued on next page)

	Doolittle and MacDonald, 1978	Glynn, 1981	Bachrach and Zautra, 1985	Chavis et al., 1986	Davidson and Cotter, 1986; 1991	Davidson and Cotter, 1993	Perkins et al., 1990	Julian et al., 1997
I can always find someone to talk to; there are people in community other than my friends who really care about me	✓	✓						✓
Can be alone when need to					✓			
Most friends in community are here to stay		✓						
Number of items	26	60	7	23	17	5	12	15
Reliability	NR	KR-20 = 0.97	$\alpha = 0.76$	$\alpha = 0.97$	$\alpha = 0.75$	$\alpha = 0.84$	$\alpha = 0.80$	$\alpha = 0.90$
Validity	Factor analysis; 6 factors explained 54% of variance	Reported several tests of validity	Face validity	96% of criterion variance explained	Factor analysis; 1 factor emerged	Correlation between scales = 0.80–0.87	NR	NR

^a The four domains of “sense of community” are based on MacMillan and Chavis (1986).

		N.	Place of Work or School (%)	Leisure Time		
				Where (%)	By Which Activities (%)	With Whom (%)
	Preschool	J	–	At home (59)	Play (80), TV (30), Computer (20)	Households (80)
		F	–	At home (67)	Play (33), TV(33), Computer (33)	Households(100)
Male	7-14 years	J	Close to N. (87)	At home (72) Inside N. (17) Outside N. (17)	TV (56), Computer (39), Play (33)	Households (61), Friends out of N. (44), Neighbors (6)
		F	Close to N. (50), Inside N. (30)	At home (50) Outside N. (33)	TV (56), Play (33), Computer (39)	Households (83), Friends out of N. (8), Neighbors (8)
	15-18	J	Close to N. (47) Far from N. (41)	At home (71) Inside N. (29) Outside N. (29)	TV(65), Study (65), computer (53), Sport (35)	Households (88), Friends out of N. (35),Neighbors(12)
		F	Close to N. (41) Far from N. (36)	At home (78) Outside N. (28)	TV (44), Study (39), Computer (39), Sport (33)	Households (83), Friends out of N. (33)
	19-26	J	Far from N. (83)	At home (70) Inside N. (8) Outside N. (35)	Study (58), Computer (51), TV (48)	Households (65), Friends out of N. (60)
		F	Far from N. (76)	At home (50) Inside N. (11) Outside N. (39)	TV(33), Computer (33), Sport (28)	Households (46), Friends out of N. (59)
	Adults 27-60	J	Far from N. (90)	At home (70) Inside N. (16) Outside N. (29)	Study (52), TV (36), Family visit (35)	Households (72), Friends out of N. (35)
		F	Far from N. (71) Close to N. (24)	At home (62) Inside N. (9) Outside N. (33)	TV (43), Study (31), Family visit (28)	Households (70), Friends out of N. (29)
	Elderly	J	Far from N. (83)	At home (87) Inside N. (20) Outside N. (13)	Study (67), TV (43), Family visit (33)	Households (70), Friends out of N. (33),Neighbors(13)
		F	Far from N. (77)	At home (68) Inside N. (10) Outside N. (31)	TV (68), Family visit (47), Study (37)	Households (79), Friends out of N. (21)
Female	7-14 years	J	Close to N. (75)	At home (46) Inside N. (14) Outside N. (46)	Play (69), Sport (31), TV (23), Study (23)	Households (31), Friends out of N. (54)
		F	Close to N. (67)	At home (43) Inside N. (8) Outside N. (43)	TV (71), , Play (43), Sport (43)	Households (86)
	15-18	J	Close to N. (67) Far from N. (25)	At home (88) Inside N. (17) Outside N. (9)	TV (75), Computer (67), Music (58), Study (50)	Households (50), Friends out of N. (50),Neighbors(16)
		F	Close to N. (100)	At home (86) Outside N. (14)	TV (71), Computer (43), Study (43)	Households (71), Friends out of N. (14)
	19-26	J	Far from N. (69) Close to N. (23)	At home (81) Inside N. (11) Outside N. (27)	Study (68), TV (54), Computer (37)	Households (71), Friends out of N. (46), Neighbors (7)
		F	Far from N. (69) Close to N. (23)	At home (57) Inside N. (7) Outside N. (43)	TV (39), Study (25), Computer (21)	Households (64), Friends out of N. (27)
	Adults 27-60	J	Far from N. (78)	At home (66) Inside N. (18) Outside N. (20)	Study (48), TV (44), Family visit (41), Visit of neighbors (11)	Households (57), Friends out of N. (38),Neighbors(17)
		F	Far from N. (56) Close to N. (28)	At home (67) Inside N. (6) Outside N. (30)	TV (39), Study (31), Walking (29), Family visit (26), Visit of neighbors (4)	Households (77), Friends out of N. (16)
	Elderly	J	–	At home (87) Inside N. (7) Outside N. (7)	Study (67), TV (47), Family visit (27)	Households (60), Friends out of N. (40),Neighbors(7)
		F	–	At home (90) Inside N. (10) Outside N. (10)	TV (50), Religious activities (40) Family visit (30)	Households(100)

Table C-2: Residents' Activities in Jami (J) and Farhad (F) Neighborhoods (N.).

		N.	Place of Work or School (%)	Leisure Time		
				Where (%)	By Which Activities (%)	With Whom (%)
Male	Preschool	S	–	At home (78)	Play (56), TV (44)	Households (33)
		I	–	At home (83)	Play (83)	Households (66)
	7-14 years	S	Close to N. (47) Far from N. (37)	At home (75) Inside N. (26) Outside N. (16)	Play (68), TV (37), Sport (32)	Households (63), Friends out of N. (16), Neighbors (11)
		I	Far from N. (50) Inside N. (35)	At home (71) Inside N. (19) Outside N. (14)	Play (62), TV (48), Sport (29)	Households (52), Friends out of N. (19), Neighbors (10)
	15-18	S	Far from N. (64) Close to N. (31)	At home (87) Inside N. (7) Outside N. (33)	TV (40), Sport (40), Computer (33)	Households (47), Friends out of N. (29)
		I	Far from N. (63) Close to N. (28)	At home (64) Outside N. (27)	Computer (54), TV (50), Sport (32), study (32)	Households (55), Friends out of N. (32)
	19-26	S	Far from N. (71)	At home (48) Inside N. (8) Outside N. (43)	Computer (37), TV (35), Study (31)	Households (41), Friends out of N. (28)
		I	Far from N. (76)	At home (54) Outside N. (47)	TV (52), Computer (45), Study (27)	Households (48), Friends out of N. (36)
	Adults 27-60	S	Far from N. (66)	At home (61) Inside N. (3) Outside N. (25)	TV (45), Family visit (35), Shopping (21)	Households (68), Friends out of N. (11), Neighbors (8)
		I	Far from N. (81)	At home (59) Inside N. (5) Outside N. (37)	TV (40), Walking (25), Family visit (24)	Households (68), Friends out of N. (16)
	Elderly	S	Far from N. (40)	At home (44) Inside N. (22) Outside N. (44)	Walking (44), TV (22), Family visit (44)	Households (67), Alone (22), Neighbors (11)
		I	Far from N. (100)	At home (73) Inside N. (9) Outside N. (36)	TV (63), Family visit (45), Walking (45)	Households (64), Alone (18), Friends out of N. (9)
Female	7-14 years	S	Close to N. (41) Inside N. (35)	At home (86)	TV (57), Play (29)	Households (62), Alone (19)
		I	Inside N. (50) Close to N. (50)	At home (92) Outside N. (24)	TV (85), Play (39)	Households (77)
	15-18	S	Close to N. (52) Far from N. (33)	At home (72) Outside N. (14)	TV (31), Computer (28), Study (28)	Households (63), Friends out of N. (16), Alone (19)
		I	Close to N. (50) Far from N. (38)	At home (100) Outside N. (10)	TV (70), Study (70), Music (20)	Households (40), Alone (30)
	19-26	S	Far from N. (70) Close to N. (20)	At home (66) Outside N. (20) Inside N. (6)	Study (45), TV (34), Family visit (20)	Households (57), Friends out of N. (6), Neighbors (6)
		I	Far from N. (63) Close to N. (33)	At home (84) Outside N. (12) Inside N. (3)	TV (54), Study (39), Computer (28)	Households (67), Friends out of N. (14)
	Adults 27-60	S	Inside N. (46) Far from N. (32) Close to N. (23)	At home (77) Inside N. (10) Outside N. (8)	TV (56), Family visit (27), Party (20), Visit of neighbors (8)	Households (62), Neighbors (8)
		I	Far from N. (53) Close to N. (37)	At home (80) Inside N. (4) Outside N. (13)	Family visit (35), TV (30), Religious activities (28), Shopping (28), Visit of neighbors (15)	Households (75), Friends out of N. (11)
	Elderly	S	–	At home (100)	Party (100), Religious activities (100)	Households (100)
		I	–	At home (80), In house of neighbors (20)	Religious activities (80), Shopping (80), TV (40)	Households (60)

Table C-3: Residents' Activities in Syed-Razi (S) and Iraj-Mirza (I) neighborhoods (N.).

	N.	Place of Work and School	Leisure Time		
			Where	By Which Activities	With Whom
Preschool	Sa	—	At home (77)	Play (56), TV (39)	Households (63)
	Fa	—	At home (69)	Play (87), TV(69)	Households(61)
	K	—	At home (85)	TV(69), Play (62)	Households(62)
Male	7-14 years	Sa	Inside N. (70)	At home (68) Inside N. (29)	TV (81), Play (52) Households (58), Neighbors (15)
		Fa	Inside N. (58)	At home (59) Inside N. (22)	TV (70), Play (59) Households (70), Neighbors (10)
		K	Inside N. (36) Far from N. (36)	At home (75) Inside N. (13)	TV (63), Play (38) Households (69), Neighbors (6)
	15-18	Sa	Far from N. (54) Close to N. (35)	At home (65) Inside N. (10) Outside N. (23)	TV(74), Sport (26) Households (55), Friends out of N. (19),Neighbors(10)
		Fa	Far from N. (48) Close to N. (31)	At home (39) Inside N. (25) Outside N. (25)	TV (71), Computer (32), Study (29), Sport (29), Music (29) Households (57), Friends out of N. (25),Neighbors(19)
		K	Far from N. (61) Close to N. (36)	At home (76) Inside N. (17) Outside N. (14)	TV (79), Study (31), Music (31), Sport (28) Households (69), Friends out of N. (21),Neighbors(10)
	19-26	Sa	Far from N. (60) Close to N. (27)	At home (56) Inside N. (2) Outside N. (42)	TV(63), Sport (27), Music (27) Households (57), Friends out of N. (25), Neighbors (4)
		Fa	Far from N. (59) Close to N. (34)	At home (46) Inside N. (9) Outside N. (39)	TV(55), Computer (34), Music (28) Households (46), Friends out of N. (23)
		K	Far from N. (73)	At home (71) Inside N. (7) Outside N. (17)	TV (79), Family visit (45), Study (26) Households (83), Friends out of N. (17)
	Adults 27-60	Sa	Far from N. (53) Close to N. (30)	At home (77) Inside N. (3) Outside N. (18)	TV (74), Family visit (53), Shopping(36) Households (77)
		Fa	Far from N. (58) Close to N. (25)	At home (55) Inside N. (6) Outside N. (32)	TV (48), Family visit (38), Religious activities(21) Households (70), Friends out of N. (9)
		K	Far from N. (60) Close to N. (29)	At home (87) Inside N. (4) Outside N. (16)	TV (87), Family visit (43), Shopping(36), Religious activities(35) Households (89), Friends out of N. (10)
	Elderly	Sa	Far from N. (100)	At home (86) Inside N. (17)	Religious activities (50), TV (50) Households (86), Neighbors(7)
		Fa	Inside N.(33) Close to N. (33) Far from N. (33)	At home (64) Inside N. (18) Outside N. (18)	Religious activities (64), TV (36), Walking (36), Visit of neighbors (27), Family visit (27) Households (82), Friends out of N. (9)
		K	Far from N. (100)	At home (92) Outside N. (25)	TV (83), Religious activities (67), Family visit (58) Households (83), Friends out of N. (8)

Table C- 4: Male and Preschool Residents' Activities in Sahraie (Sa), Fattah (Fa), and Karmandan (K) neighborhoods (N.).

		N.	Place of Work and School	Leisure Time		
				Where	By Which Activities	With Whom
Female	7-14 years	Sa	Inside N. (67) Close to N. (29)	At home (70) Inside N. (13) Outside (13)	TV (87), Play (39)	Households (87), Neighbors (4)
		Fa	Inside N. (45) Far from N. (38)	At home (74) Inside N. (10) Outside (13)	TV (68), Play (36), study (26), Computer (23)	Households (77), Neighbors (3)
		K	Inside N. (46) Close to N. (43)	At home (83) Inside N. (11) Outside (21)	TV (63), study (31), Computer (17)	Households (82), Neighbors (5)
	15-18	Sa	Inside N. (36) Close to N. (50) Far from N. (14)	At home (76) Inside N. (3) Outside N. (15)	TV (76), Study (42), Family visit (39)	Households (70)
		Fa	Inside N. (16) Close to N. (42) Far from N. (42)	At home (79) Inside N. (7) Outside N. (11)	TV (54), Study (43), Music (29), Computer (25),	Households (71)
		K	Inside N. (35) Close to N. (42) Far from N. (23)	At home (93) Inside N. (3) Outside N. (3)	TV (90), Family visit (53), Study (40)	Households (93), Friends out of N. (10)
	19-26	Sa	Inside N. (30) Close to N. (20) Far from N. (50)	At home (74) Inside N. (6) Outside N. (18)	TV (74), Family visit (38), Study (24), Music (24)	Households (68), Friends out of N. (15), Neighbors (6)
		Fa	Close to N. (30) Far from N. (55)	At home (63) Inside N. (3) Outside N. (26)	TV (63), Music (29), Computer (26), Study (26)	Households (63), Friends out of N. (23), Neighbors (3)
		K	Inside N. (30) Close to N. (15) Far from N. (55)	At home (90) Inside N. (2) Outside N. (14)	TV (89), Family visit (36), Religious activities (32)	Households (84), Friends out of N. (9), Neighbors (2)
	Adults 27-60	Sa	Inside N. (25) Close to N. (38) Far from N. (38)	At home (83) Inside N. (4) Outside N. (10)	TV (82), Family visit (53), Religious activities (40), Visit of neighbors (18)	Households (78), Friends out of N. (3), Neighbors (7)
		Fa	Inside N. (27) Close to N. (41) Far from N. (32)	At home (70) Inside N. (6) Outside N. (12)	TV (60), Family visit (37), Religious activities (36), Visit of neighbors (11)	Households (74), Friends out of N. (5), Neighbors (9)
		K	Inside N. (38) Far from N. (44)	At home (89) Inside N. (2) Outside N. (15)	TV (85), Religious activities (52), Family visit (51), Visit of neighbors (15)	Households (91), Friends out of N. (11)
	Elderly	Sa	–	At home (100)	Religious activities (100), TV (67) Family visit (33)	Households (100)
		Fa	–	At home (67)	Religious activities (67), TV (33) Family visit (33)	Households (67)
		K	–	At home (83)	Religious activities (83), TV (67) Family visit (50)	Households (83)

Table C- 5: Female Residents' Activities in Sahraie (Sa), Fattah (Fa), and Karmandan (K) neighborhoods (N.).

APPENDIX D

List of Abbreviations

F: Farhad Neighborhood

Fa: Fattah Neighborhood

FSI: Floor Space Index

I: Iraj-Mirza Neighborhood

J: Jami Neighborhood

Ka: Karmandan Neighborhood

Neigh: Neighborhood

No: Number

PC: Personal Computer

PSOC P: Psychological Sense of Community

S: Syed-Razi Neighborhood

Sa: Sahraie Neighborhood

SES: Socio-Economic Status

Sig.: Significant

SOC: Sense of Community

SPSS: Sciences Statistical Package for the Social