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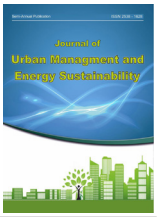

ORIGINAL RESEARCH PAPER

Evaluation of social interaction place in the spatial configuration of houses in Tehran City (late Qajar period)[i]

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ABSTRACT

One of the most important challenges of modern life is facing the identity crisis in social interactions in the field of urban space and body, which is formed in the context of architecture. The configured pattern of architectural spaces, as well as the space that governs it, is the response of architecture to the issue of identity and authenticity. The research method of the current research is analytical-descriptive and has a practical purpose, which is based on the method of collecting library and field information from 16 houses of famous persons in Tehran city during the last Qajar period. The aim of the research includes the recognition of social interactions as one of the components of social cultural identity in the houses of Tehran in the late Qajar period. The main question of the research is that what is the position of social interactions in the architecture of residential buildings of noble class in Tehran during the Qajar period? The studied case studies have been analyzed based on the space syntax method and using A-Graph software. Findings show dividing the houses of this period into two types of introverts and extrovert, this research has analyzed the issue of social interactions in the spatial configuration of these two categories. The results of the research show that although the spaces of Shahneshin, hall, yard and porch are among the spaces with high social interactions, the spatial configuration criteria are different in them.

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i. This article is taken from the doctoral dissertation of "Pezhman Moslehi" in the title of "Recognition of the components of cultural identity in the architecture of residential buildings in Tehran city by examining the lifestyle of the noble class in the Qajar period (case study: the last Qajar period)" which was supervising by Dr. Vahid Ahmadi. And the consultation of Dr. Ehsan Darri Jabarooti in 2023 is underway at Islamic Azad University, Gholbahar branch.

INTRODUCTION

Identity crisis is one of the most important issues and challenges facing developing societies. During the process of globalization, architectural buildings and urban textures have become modern and gradually lost their identity, and this issue is effective in the relationships of humans with each other and with the environment, and it reduces the sense of belonging to a place in citizens (Pakzad, 2019). The rapid and extensive changes in the world system in the last decades of the 20th century and the beginning of the new century have somehow exposed people to different thoughts and tendencies, the result of which is alienation from oneself and forgetting oneself (Ghol mohammadi, 2015). Iran, Iranian society is also a society in transition or in development where the collapse of social structures can intensify these identity crises (Abdollahi, 2015). Architecture, as a physical manifestation of a society's culture, has been influenced by cultural interactions, political changes and social reforms throughout history, and has influenced the behavior patterns of society's people.

Confronting Western culture and civilization and its impact on urban planning and architecture is one of the most important concepts for designers in the national and international arenas. The first influential encounters in urban architecture go back to the Qajar period, which is rooted in the sociological and lifestyle contexts of this era; Therefore, the political and social system caught in the purgatory of "tradition and modernity" in the Qajar period caused a large and rapid change and transformation in the culture, art and architecture of Iran and the challenge between tradition and modernity. Investigating the roots of modernity and the tendency towards western architecture in Iranian architecture without considering the developments in the political, social and cultural system of the Qajar period does not seem correct. Relatively many palaces built in this period, in addition to being a symbol of the greatness and distinction of the Qajar kings and nobles, were receptive to all the changes and developments of the architecture and art of their era, they played an important role in changing the architectural values of Iran (Khamse, 2016). In the third Qajar period, global developments and the expansion of industry in the world affected parts of Iranian architecture; So that with the beginning of the 19th century, a kind of fusion of authentic Iranian architecture with modern architecture can be seen. Changes in architectural materials and materials followed changes in the shape and structure of buildings in this period. Modern architecture easily infiltrated the corners of ancient Iranian architecture; The high volume of travelers and travelogues in the Qajar period compared to the previous periods, along with many changes, the beginning of economic and political changes and the government structure, the rapid growth of the presence of foreign diplomats, and in the field of urban development, the formation of a new urban ecology, the construction of new streets, the formation of new neighborhoods based on the system New social and creating new and extroverted spaces in the field of architecture are one of these developments. The encounter between European technology and traditional Iranian culture at the beginning of the Nasrid period, which had led to the peaceful acceptance of western ideas and material manifestations, turned into a serious battle and confrontation between tradition and modernity in the middle of this period (Gharab, 2016). Thus, the architecture of Iranian buildings, which was formed in the early Qajar period in connection with the principles of traditional architecture and in the form of the structure of a traditional city, gradually lost its ancient forms in the Naseri period and took on a western appearance (Ramazani, 2015). By looking at the developments in Iranian architecture and the opinions of experts in this field, we realize that the most important developments in the field of architecture and urban planning influenced by the West began in the middle of the Qajar period, although the cultural and artistic exchanges

of Iranians with the West began in the periods before the Qajar and especially in the Safavid period. It has started, but the extent of its impact on the developments in the field of architecture and construction is not as great as that of the Qajar period. The Qajar era, due to the relations with the West, brought changes in the patterns and lifestyle of famous persons and the result of which is evident in the architecture and urban planning of this era (Shahrodi, 2014). Therefore, based on what was mentioned, it can be acknowledged that the Iranian society went through many changes during the Qajar period, which affected its social structure, power relations, and political language. The increasing influence of the Europeans has weakened the government, the domestic economy and the traditional elites and exposed Iran to the rapid advance of the expanding capitalist system in the West. The first trend of modernization in lifestyle imitating the West took place in the late Qajar period in Iranian society, especially the wealthy class. Therefore, the current research intends to introduce scientific theories in the field of sociology related to social class (here, the class of courtiers and nobles) and lifestyle in the field of architecture. In this way, it determines the analytical relationship between the social class of the properties and the taste of the founders in choosing the architecture of the residential houses in Tehran during the Qajar period in order to lead to the point that what changes in the social classes of the properties and their lifestyles in the Qajar period with an emphasis on social interactions What happened and what was the result of these changes on the taste and architecture of the residential buildings of this era. The course of evolution in the habits of designers and the tendency of the tastes of building owners has led to the creation of patterns that, along with urban planning and governmental factors, have led to the creation of a borrowed and eclectic look in some buildings and palaces of Tehran during the Qajar era, which some consider as a break from traditional Iranian architecture. They have learned in architecture. Finding the roots of this historical and identity break is one of the basic necessities in this research. Analyzing and understanding the key issues that form the infrastructure fields (cultural and social, etc.) and their impact on the field of architecture and explaining the ideas emanating from them can create more fundamental and accurate solutions to solve the problems of contemporary architecture. Mehri et al. (2020) in a research entitled "Investigation of the influence of lifestyle on the spatial relations of noble houses of the Qajar era in Mazandaran" by examining the effectiveness of the aristocratic lifestyle of the Qajar period and the spatial relations of the studied houses, reached the conclusion that the houses located in a similar period From the Qajar era, there were different types, number of spaces and depth, also there are differences in how the spaces are connected with each other and this difference is classified due to the social relations of the family, job and livelihood. Irani Behbahani and Soltanzadeh (2014) in research entitled "The role of the garden and yard in the organization of the space of noble houses in Tehran during the Qajar period" examined four aristocratic houses in Tehran and identified spatial order, definition of privacy and territory, landscape, accessibility, It has evaluated the input and performance in them. Farah Bakhsh et al. (2016) in a research entitled "Typology of the historical houses of the old context of Mashhad, from the early Qajar to the end of the first Pahlavi period" made it possible to separate and categorize the historical houses of the city based on the characteristics of the shape and form of the elements, which includes two types of Qajar (the first half and the second half) with introverted architecture and the third type of the first Pahlavi can be distinguished with an extroverted form, which is affected by the time conditions and changes caused by the transformation of Iran's architectural pattern, influenced by Western architecture and changes in the social and cultural structures of Iranian society in this era. . Sanieipour et

al. (2016) in research entitled "Analysis of the traditional architecture of the Qajar period in Dar al-Hokume Mofakham mansion in Bojnoord (early period)" shows that despite some influence of western architecture in this era, the architecture of this mansion is still based on the fundamental principles of Iranian architecture. Islam, like the principle of introspection, privacy, etc., and paying attention to authentic Iranian arts such as brickwork decorations, tile work, as well as the construction of house ponds and sashes, etc., have been firmly established.

Soltanzadeh and Armaghan (2012) in research entitled "Architecture and Culture in the Noble Houses of Tehran in the Qajar Period (Late Period)" show how the flexible body of the house is formed and changed, based on the family structure, which itself is influenced by religious beliefs and social system. The structure of the house is based on the separation of male and female spaces. Any change in the number or needs of family members has led to the redefinition of the body of the house. The investigations conducted in the history of the subject show that the researches conducted in the field of the Qajar era are often done with an emphasis on the theoretical and historical part and their study samples are studied collectively, while in the present study, the study samples are in two sections. Forward-looking and extroverted houses that can be identified during this historical period in Tehran and are categorized based on social interactions.

MATERIALS AND METHODS

Methodology

This research has been done in a combined way based on descriptive-analytical method as well as logical reasoning. The type of information collection was based on documents and library sources, and the survey observations were also involved in identifying the social class of the house owners. First, in a specific category, the social structure based on the type of economic class has to be investigated and classified from that category. The statistical population includes the residential houses of Tehran during the Qajar era belonging to the famous persons class, which is between 1200-1344 AH, and 16 houses belonging to the noble persons (courtiers, wealthy people, and kings) in Tehran were selected as the sample size. has been the maps of the buildings have been redrawn by the authors based on the documents of the Cultural Heritage and Tourism Organization. The studied houses are categorized into two groups, extrovert and introvert, and these two groups will be compared with each other based on social interactions. Researches in line with the present article have been examined in the following, and the similarities and differences of each will be mentioned. Also, these researches have been selected with emphasis on social structure categories and in the same time period as this research.

DISSCOUSION AND FINDINGS

Life style

"Lifestyle" is the interests, beliefs, behaviors, and behavioral orientations of an individual, group, or culture, and it means the specific way of life of an individual, group, or society. Lifestyle is defined by Oxford culture as different ways of life of an individual or a group. Lifestyles include a set of perceptions, values, ways of behaving, moods and tastes in anything. This term was first used by Austrian psychologist Alfred Adler. According to the definition of the World Health Organization, lifestyle is a combination of behavioral patterns and individual habits throughout life, including nutrition, physical activity, stress, smoking, and sleep quality, which have arisen as a result of socialization. Lifestyle is a multifaceted phenomenon that includes all aspects of daily life, sleep, food, hygiene, manners, work, play, entertainment, spending time, social relations, way of thinking, behavior, feelings and emotions (Alah Rabbi and Darabi, 2015).

Life style in social science

In the space-oriented approaches, the house is a spatial representation for the behavior, work and interactions of people towards each other and is known as a place that is constantly changing and

evolving in relation to the type of lifestyle, spatial organization and its elements. From Benedikter's point of view, lifestyle is a term that refers to the way of life of a group or several peoples (benedikter, 2011). Lifestyle attracted the attention of thinkers from the beginning of the 20th century. When some experts came to the conclusion that the stratification of society based on "class" based on economic relations does not have the power to explain all social developments and human behaviors. The emergence of the concept of lifestyle, which includes other indicators in addition to economic class. In this view, the society is not only economically stratified, but based on the dignity of the way and obvious custom, the dignity in the life of different social groups is also stratified (Haworth, 2004).

The concept of lifestyle is one of the concepts of social sciences, sociology and anthropology, which recently and in the last decade has received a lot of attention from social scientists and cultural managers; Lifestyle is a meaning that has been created from the interweaving and connection and systematization and network of several factors that affect the ways of life or climates of human living. (Nekooimehr et al., 2023) Almost in most definitions of lifestyle, two concepts can be found that are considered in the definition of lifestyle; And in fact, both concepts come back to the word "style": first, the concept of unity and comprehensiveness, and second, the concept of differentiation and differentiation.

Social interactions in spatial configuration

Spatial configuration is a main concept in the syntax of space, which aims to "develop description strategies for configured, residential spaces (buildings, settlements or built complexes) in such a way that their underlying social logic can be expressed. This in turn can allow the development of secondary theories or often practical explanations about the effects of spatial configuration on various social or cultural variables (attributes). A related topic in space syntactic research is the understanding of embodied space itself, especially its shaping processes and social meaning (Bafna, 2003). These concepts are measured by criteria known as space syntax indices. Examining these indicators can lead to the explanation of the meanings hidden in the spatial configuration, including interactions and privacy.

Social structure and architecture of the Qajar era

The Qajar era can be divided into three parts or periods, which include the first period (1264-1210 AH), the second period (1313-1264 AH) and the third period (1313-1344 AH) (Qlich Khani, 2012). The classifications made in the social history books of the Qajar era represent a general view of the classes of people in this era. Based on a classification, if we consider the social hierarchy in the form of an imaginary vertical line, the top of which is the position of the king himself, at the top of this line after the king, the powerful stratum includes courtiers, government officials, tribal chiefs, religious elders, Landlords and big businessmen will be placed and at the bottom of it will be the weak strata including peasants, artisans and service providers (Ashraf and Bano-azizi, 2017). Therefore, the community of the Qajar period can be divided into two classes: 1- the ruling class and 2- the condemned class (Shamim, 1966). Architectural developments in the early Qajar period were also endogenous, had a slow rhythm and were consistent with other artistic and social phenomena, and were influenced by the internal factors and phenomena of the society (Sajadi et al., 2014). The existence of a brilliant and unrivaled period of Islamic art and architecture, such as the Safavid period, not too far from the Qajar era, was enough to dazzle the eyes of the kings and architects of that era. So that in the structure of many buildings of this period, in-

Table 1. Difference between individual and social identity

social Identity	we	Shaping social norms	Social behavior pattern	Emphasis on similarities
personal identity	yourself or me	Establishing one's personality	Individual behavior	Emphasis on differences

cluding mosques and houses, regardless of some minor changes in elements and decorations, the common patterns in Safavid architecture have been completely followed. In other words, the Qajar kings were very interested that the new capital of Iran could compete with Isfahan (the Safavid capital) (Habibi, 1964). This is why some researchers refer to the architecture of the Qajar period as the continuation of the Isfahani style or the second period of the Isfahani style (Habibi, 1964); (Pirnia, 2010). The architecture of the Qajar period can be divided into two general periods: the first period: from the beginning of the reign of Agha Muhammad Khan to the end of the reign of Muhammad Shah: in this period, the dominant view on architecture is still an endogenous view based on the style of Isfahan and its perfection, which examples such as Hazrat Masoumeh's shrine in Qom and Sultani Mosque are examples of it; The second period: from the beginning of the reign of Naser al-Din Shah to the end of the Qajar dynasty: in this period, due to the travels of Naser al-Din Shah and his successors, as well as the sending of some Iranian students to Europe and being influenced by the ruling body and the elites of the society, a style in architecture begins. which is an eclectic mix of native and western architecture.

Many factors are involved in the formation of architecture and urban planning of the Qajar period, which we divide into two internal and external factors. Internal factors refer to factors derived from the traditional architecture of Iran, especially the Safavid period. The main factors shaping the architecture and urban planning of the Qajar period are external factors, which means the factors taken from foreign countries, especially Western countries and Russia (Kamali, 2008: 38). Architecture and house building in the Qajar period due to the influence of overseas communication in some cases led to mere imitation of western works, which appeared mostly in decorations and sometimes in structural and architectural forms and elements. External factors, which had a global origin, in a comprehensive and all-round position caused the ancient biological system to undergo fundamental changes and transformations, and in parallel with the introduction and creation of new aspects of private and public life, it demanded the system and hierarchy it needed (Afshar Asl and Khosravi, 1966). The encounter between European technology and Iranian traditional culture at the beginning of the Nasrid period, which had led to the gentle acceptance of western ideas and material manifestations, turned into a serious battle and confrontation between tradition and modernity in the middle of this period (Bani Masoud, 2011: 78). In this way, the architecture of Iranian buildings, which was formed in the early Qajar period in connection with the principles of traditional architecture and in the form of a traditional city structure, gradually lost its ancient forms in the Nasrid period and took on a western appearance (Ramezan Jamaat & Neyestani, 2012). Undoubtedly, Nasereddin Shah's trips to Europe, especially his second trip, had a great impact on the height of the influence of Western architecture on Iranian architecture (Pirnia, 2010); (Ghobadian, 2004). The arrival of the idea of modernity in Iran from the end of the Qajar period had a great impact on the spatial organization of cities, especially Tehran as the capital of the Qajar dynasty, and it became familiar with the manifestations of modernism, including modern architecture, earlier than other cities. Through this thought, Tehran witnessed a new network of urban relations, new functions in the field of interactions and a new formulation of physical spaces (Riyazi, 2010).

Mansions and buildings of Nobel class in the Qajar period

The architecture of Qajar houses in this period with two parts, inner and outer, has preserved its function, which is the main distinguishing feature of the houses attributed to this period from other periods. Today, most of these destruction works and only a part of such houses remains. The houses are introverted with a central courtyard and maintaining the introversion and sanctity of the spaces is ensured by using the vestibule and the corridors as an intermediate space. Living spaces are located on both sides of

the courtyard, and the part facing the sun is usually built on two floors, the upper part of which includes the royal, five-door, and seven-door rooms, and a porch was also used in the part facing the sun (Farahbakhsh and others, 2017). Due to the weakness of the Qajar government, public buildings were not built in a large volume, in the number and scale of the Safavid period; In this period, simultaneously with the growth of the privileged market class, the power of the village clergy and singers, the construction of prominent houses belonging to the wealthy began, so the high point of Qajar architecture, which reflects its characteristics, is manifested in the architecture of the houses (Qasemi Sichani and Memarian, 2019). The structure and function of the houses in the Qajar district are based on religious relations, Iranian family system and the job of the head of the family. Based on the religious considerations of this period regarding the separation of men and women, in addition to dividing the space of the house into internal and external parts, the expression of these beliefs can also be seen in the entrance area in a bold way (Sakhawat Doost and Al-Barzi, 2017). In this age, there was a change in the shape of doors and windows, especially the openings above the doors. Many of the final day, which in the past were mostly made in the shape of a square or rectangle or with a stern arch, made a circle or an oval. Also, to make sash windows, the use of kerbing was considered more than knotting. (Hasani et al., 2023) The study and investigation of the structural features of doors and windows as well as their windows indicate that in this period, special rules are used in the construction of wooden works related to architecture, and their investigation can lead to a better understanding of Qajar period architecture and related decorations. It helps a lot (Kianmehr, 2014). Iranian architecture has been influenced by Western art and architecture, and the use of semi-circular arches is expanding to imitate Western architecture. The decorations facing the yard will increase. The decorations of the columns and capitals are simpler and inspired by the characteristics of brick. Emphasis is placed on the entrance by creating a simple vestibule and elderly platforms, lengthening and heightening the headland, along with decorative decorations in the form of a simple brick moqrans train and tiling at the junction of the roof with the sky line. Under the ceiling of the interior spaces, wooden knotted decorations are used, and for the first time, the creation of small oval, circular and rectangular skylights between the openings in the outer wall and on both sides of the main opening in the axis of symmetry is considered; Even this space has been used as a place for lighting (Farahbakhsh et al., 2017). In middle-class houses, there has been a tendency to separate private areas, but it has not been possible to build inner and outer courtyards. Since the family structure in these houses was usually an extended family, the separation of spaces was in the form of separate rooms for each family. In some houses, they did not have an outer house to emphasize the separation of private areas. The guest room was used the same way as other rooms. (Baghdadi and Kateb, 2022). This issue was due to the fact that during the day, due to the cooperative life of the family members, all the spaces of the house were used in a shared manner, and only at night these spaces found a special aspect for each family. On the other hand, in order to compensate for the lack of space for the members of the house, wooden dividers were used in the rooms. When the divider was closed, the smaller, pesto-like section created a secluded space. The presence of separators made the space of the rooms flexible, in such a way that one room turned into two rooms when necessary. There are three main reasons for the number of spaces in noble houses:

- These houses belonged to prominent and wealthy people who had many social connections, and therefore in these houses there were spaces for receiving guests in great number and detail, in the form of outer courtyards and halls and halls;
- The number of members of the house was also relatively large due to the presence of servants;
- The financial resources of the nobility allowed them to build more and bigger spaces in the house.

CONCLUSION AND RESULTS

The studied houses are separated and evaluated according to the two general types of extroverts and introverts. This separation has been done considering the fact that in the studied time period and under the influence of Western culture, extroverted examples can be seen alongside the far-sighted model. Each of these houses has been analyzed by A-Graph software, which will be discussed later (Figure 3).

Examining the introverted samples shows that the spaces related to interactions such as Shahneshin are located at a higher depth than the average spaces and have less connection with the surrounding spaces (Table 2). This space also has a medium control, which is close to the overall control average. This indicates that the Shahneshin space, despite being dedicated to social interactions, has a lot of depth, and although at this level of depth, privacy is expected from the space, but according to the type of use, it should be dedicated to a space for interactions for special people. has done. The space of the hall is located in a small depth and although it has a low connection with the surrounding spaces, it is known as another space with interactions. In the meantime, the yard and the porch are known as other spaces related to collective interactions, which functioned as expected and the amount of depth in them is low and they have a high connection with the surrounding spaces; An issue where the high level of control in them also confirms this (Figure 4).

Table2: Spatial configuration indicators in introverted houses

Space title	MD	RA	i	CV
Room	4.59	0.19	5.93	0.85
kitchen	5.45	0.19	5.71	0.93
Store	6.04	0.17	6.34	0.45
Porch	3.80	0.16	6.98	1.30
pesto	5.21	0.27	4.27	0.57
floor stairs	3.88	0.17	6.63	0.68
Rooftop	9.94	0.20	4.98	1.50
the hall	4.20	0.19	5.59	1.03
Toilet	4.83	0.17	6.32	0.44
Bathroom	4.48	0.15	6.83	0.66
Yard	3.87	0.11	9.10	3.09
Yard 2	3.60	0.13	8.69	1.59
hallway	3.70	0.14	7.30	0.71
corridor	4.80	0.14	7.86	1.27
Shahneshin	6.14	0.15	6.81	0.92
Shabestan	4.75	0.33	3.07	0.25
Partition space	4.31	0.17	6.50	1.12
Hall	3.02	0.08	12.88	1.05
Hashti	3.92	0.16	8.26	1.26

Figure 1: The pattern of the hall room in the middle-class houses of the Qajar period (source: Mohammad Hosseini et al., 2016)

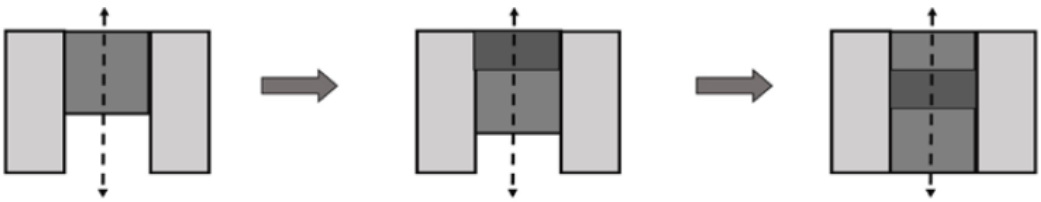

Figure 2: Central symmetry with the vestibule in the houses of the noble class of the Qajar period (source: Mohammad Hosseini et al., 2016)

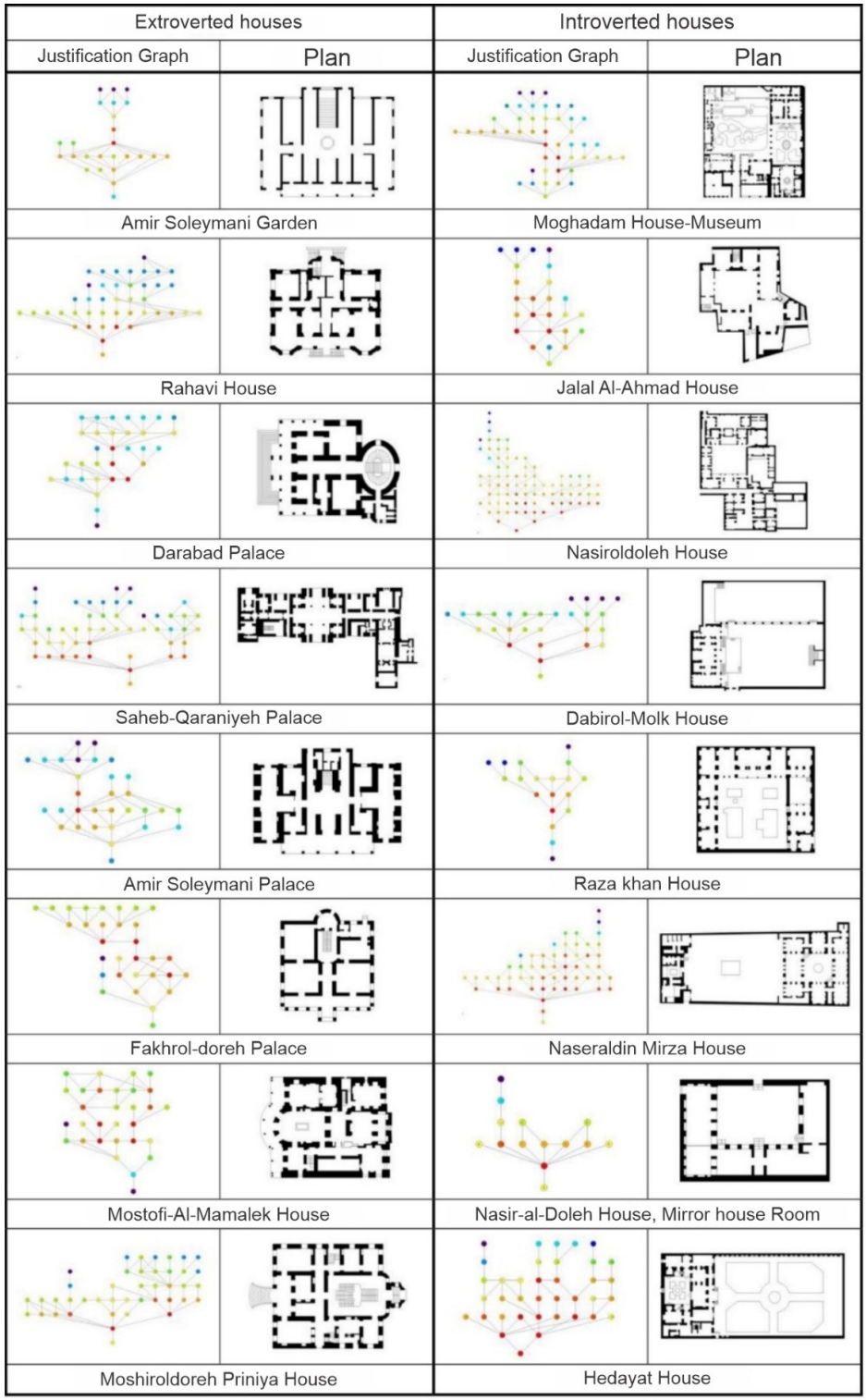

Figure 3: Examining the studied samples and explanatory graph extracted from A-Graph software

Examining the extroverted samples shows that the spaces related to interactions such as Shahneshin have a low depth compared to the average spaces, and this is despite the fact that this space has less connection with the surrounding spaces and also has less control than the overall average (Table 3). This indicates that the Shahneshin space has little depth due to being dedicated to social interactions, and although it has little connection with the surrounding spaces, but due to the type of use, it has been dedicated to a space for interactions for special people. The space of the hall, however, is located in a small depth and has a good connection with the surrounding spaces and is known as another space with interactions. The yard and porch are known as other spaces related to collective interactions, which functioned as expected and the amount of depth in them is low, but the degree of connection between the yard and the surrounding spaces is higher, while this is not the case with the porch and its connection is less; An issue where the high level of control in them also confirms this (Figure 5).

Table3: Spatial configuration indicators in extroverted houses

Space title	MD	RA	i	CV
Room	4.50	0.19	5.54	0.68
kitchen	4.54	0.18	5.65	0.69
Store	4.95	0.20	5.30	0.39
Porch	4.13	0.20	5.42	1.27
pesto	5.65	0.25	4.01	0.43
floor stairs	3.48	0.12	8.45	0.53
Rooftop	4.37	0.17	5.84	0.85
the hall	4.80	0.24	4.91	0.67
Toilet	5.46	0.21	4.97	0.46
Bathroom	4.98	0.21	4.81	0.39
Yard	3.64	0.17	7.47	2.51
Yard 2	4.06	0.15	7.05	1.73
hallway	4.74	0.24	4.20	0.85
corridor	5.96	0.34	3.00	0.92
Shahne-shin	3.56	0.15	6.71	1.78
Shabestan	3.84	0.15	7.03	1.89
Partition space	3.05	0.13	8.08	1.59
Hall	4.50	0.19	5.54	0.68
Hashti	4.54	0.18	5.65	0.69

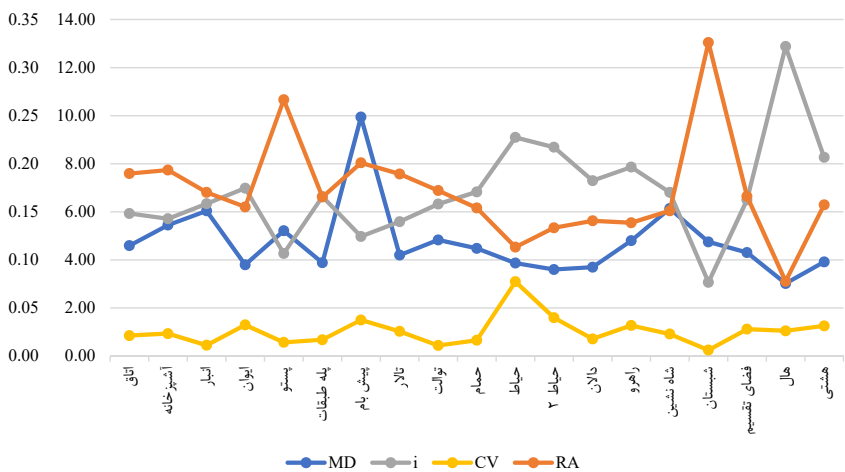

Figure 4: Spatial configuration indicators in introverted houses

Examining the indicators studied in the introverted and extroverted samples shows that on average for the selected samples, the depth of the spaces in introverted houses is greater than in extroverted houses and the index of relative asymmetry in introverted houses is lower than in extroverted ones, and the correlation index also confirms this. This means that far-sighted houses have more integrity than extroverted houses (Figure 6).

The purpose of this research is to recognize social interactions as one of the components of social cultural identity in the houses of Tehran during the late Qajar period, and to investigate the style and context of properties (courtiers, wealthy people, and kings) in the configuration of houses in Tehran during the late Qajar period. took the main question of the research that was trying to be answered was what is the standard of social interactions in the architecture of residential buildings of noble class of Tehran during the Qajar period? According to the classification based on the analysis of far-sighted and extroverted samples, the following results were obtained. The results of the research show that in the introverted samples, the spaces related to interactions include the king's seat, the hall, the yard and the porch, the king's seat has

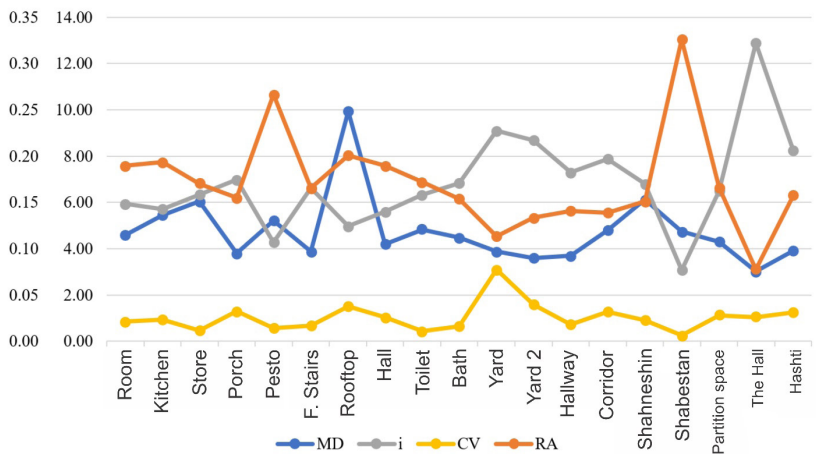

Figure 5: Spatial configuration indicators in extroverted houses

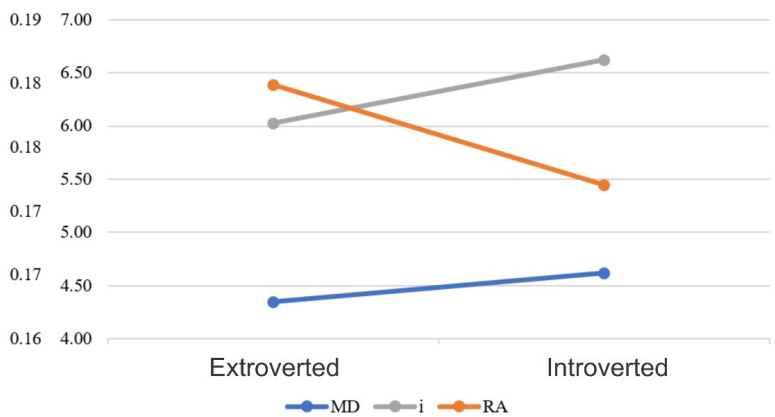

Figure 6: Evaluation of changes in the spatial configuration of the studied houses

more depth among the collective spaces, and the hall's space has a middle depth, and the yard and the porch have less depth. . The results also show that the hall and Shahneshin have different functions in terms of spatial configuration criteria, but the yard and porch as other spaces related to collective interactions, function as expected and besides the low depth, they have a high correlation with the surrounding spaces, which shows the value Above the social interactions in these spaces. The results of the research show that in the extroverted samples, the Shahneshin space has little depth and coherence due to being devoted to social interactions, but it still plays a role as a space for interactions for special people. The space of the hall is also considered as a suitable space for interactions due to its high connectivity. Around the yard and the porch, with a proper connection, they form other spaces related to social interactions.

The results of the research also show that based on spatial configuration indicators, the depth of spaces in introverted houses is more than extroverted houses, and for this reason, it seems that the number of social interactions in them is low. Social interactions in this type also have a level corresponding to extroverted houses. In other words, the existence of differences among spatial configuration indicators has moderated the flow of social interactions in the studied samples.

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