Exploring the Patterns of In-Between Spaces in Guilan Historical Houses

Seyedehmahdieh Mirmiran*, Aliasghar Malekafzali **, Leyla Karimifard ***

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Abstract

The aim of this paper is to explain the spatial patterns of in-between spaces in Guilan historical houses in order to show their potential capacity in having various functions, and thus different forms, in the course of history. In-between spaces are mediators between two other spaces making them accessible or visible for each other. An explanation of their spatial patterns can both reveal the specific spatial arrangement of historical houses and discover their role in creating accessibility and visibility between different spaces. In this paper, the hypothesis was that the in-between spaces have a fundamental role in the spatial arrangement of historical houses. Since the research explored and clarified the relationships of in-between spaces in a number of historical houses, the methodology here is an interpretive-historical one. In this regard, in the process of gathering data, some of Guilan historical houses were selected within time intervals of Qajar to Pahlavi I and II periods through a purposive non-randomized sampling technique. These houses were selected from documentary studies, observation, interviews and field study. Then, using an analytical-interpretive approach, all types of in-between spaces were identified and evaluated in terms of functionality and spatial arrangement. In the concluding step, three spatial patterns of in-between spaces (veranda, entrance mid-door, and middle mid-door) were identified, and their functional relationships and their role in the spatial arrangement of houses, were explained.

The findings of this paper revealed that verandas are the most widely used type of in-between spaces in Guilan historical houses, and in addition to having special formative features, they played an important role in creating accessibility and visibility between rooms and outside space. The next important types of in-between spaces are entrance mid-doors and middle mid-doors. In addition to having a direct connection between each other, they were mostly used to connect other spaces to rooms and guest-houses.

Keywords: Patterns of spatial arrangement, in-between space, middle space, Guilan houses.

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This article is taken from the doctoral dissertation of Seyedehmahdieh Mirmiran entitled "Genealogy of in-between space: Transgression a Dualism at Inside and Outside Spaces in Northern Iranian houses" under the guidance of Dr. Aliasghar Malekafzali and the advice of Dr. Leila Karimifard in the Faculty of Architecture of the Islamic Azad University, South Tehran Branch.

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Introduction

The replacement of traditional houses with modern apartments have changed the spatial arrangement, applications and spatial relationship of traditional houses over the last decades. Consequently, in-between spaces between the outside and the inside have been disappeared; the spatial hierarchy, and thus social relationships, has been distorted; and a type of confusion has been emerged in the structure of traditional house. In fact, when residents enter into a new space, for example from the outside into to the inside, they have not the required emotional readiness (Nasiri 2009: 38). One of the spaces that almost all buildings have is "in-between" spaces. These spaces are in the middle of two other spaces making them accessible or visible for each other. Despite the importance of in-between (intermediate) spaces in the spatial arrangement of houses, nowadays, modern architecture does not consider any special role for them. Various options are devised to replace these spaces, but the philosophy of their application is neglected in all of them. This is evident in the reduction of the mental peace of the residents. The theoretical background of the issue reveals that the characteristics of in-between spaces falls within the scope of three factors, including perceptional-conceptual, functional-behavioral, and functional-spatial.

- Perceptional-conceptual factors, such as visual pursuit and communication, are more relevant to the perception that a viewer or a user have from a space. There are two approaches to this factor. Some researchers, like Schultz and Palasma, have looked at these factors from a phenomenological point of view, and some others, including Edward Hall, Lawson and Levine, have a psychological point of view.
- Functional-behavioral factors include hierarchical order, functional domains, and access and spatial hierarchy. Researchers have worked with different approaches to these factors. Some, like Rapaport, have a socio-cultural approach, some, like Grotter, have a psychological approach, and some others, like Alexander, have a pattern approach in exploring the spatial field of architecture.
- Functional-spatial factors include physical and visual order, balance between outer and inner space, and the structure of walls and spatial boundaries. These factors are viewed by some researchers, among them Pierre Bourdieu, in a sociocultural realm, and some others, including Robert Gifford, Gordon Cullen, Fonmeier, and Arnheim, have psychological concerns.

The present study uses the analysis of the second category factor with a historical approach to try to explain the patterns of in-between spaces in the historic houses of Guilan. This can help us to identify the common features of these patterns and apply them in modern architecture.

Research questions

- What are the types of in-between spaces in the historical houses of Guilan?
- What are the characteristics and principles of the spatial organization patterns of these in-between spaces in the plan of the historical houses of Guilan (during Qajar to the second Pahlavi)?

Research Method

The type of present research is historical-interpretive, because it explores and explains in-between spaces in a number of houses in the past. Data and evidence are contextual and determinative. These data were selected by purposive non-randomized sampling; and are collected by the method of reviewing documentary studies, observation and field research and are judged with a scientific approach and logical analogy. The three basic steps in this historical research are identifying the data, organizing them, and evaluating them to achieve a comprehensive narrative or AN explanation of the patterns. These three steps are not linear and consecutive but overlaps in the process of research. Therefore, the path of this research does not have separate stages, and in most cases, works are done parallelly. The path or steps taken based on this method are as follows:

One: Explaining the theoretical framework of research with an analytical approach and citing library studies,

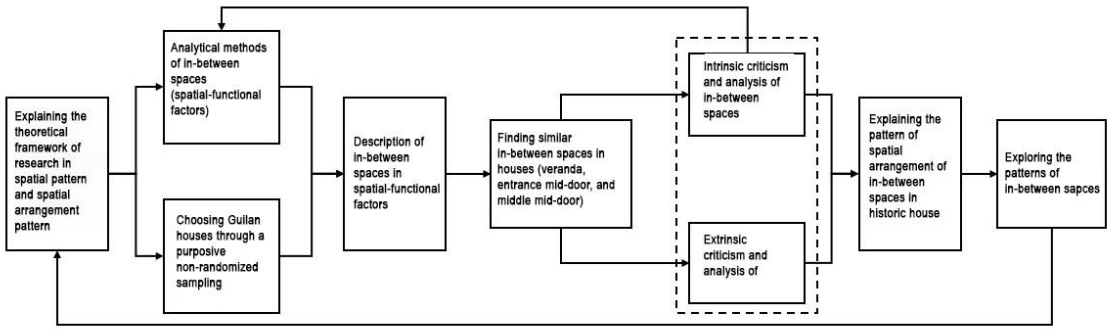
Two: Choosing 24 samples through a purposive non-randomized sampling with documentary studies, observation and field study,

Three: Identifying in-between spaces in the samples and describe them within the functional-spatial factors,

Four: Analysis and evaluation of in-between spaces and logical analogy of them,

Five: Explanting and exploring the patterns of in-between spaces based on the obtained analyzes and reaching to the final conclusions.

In the following diagram, according to Grout, an attempt has been made to obtain the research design of the article (Grout, 2011: 11), and to outline the path from the beginning to the end: (Figure 1).



F1. Proposed research model (Authors, 2020).

Literature Review

In-between spaces are parts and components of a building that fulfill the two functions of "accessibility" and "visibility" between inside and outside. Mid-doors are in-between spaces that only provides accessibility. All in-between spaces, such as counters, verandaes, corridors, are considered as mid-doors, and elements such as gates, openings and windows are considered as in-between spaces. Therefore, in-between spaces are sometimes building components, and sometimes they are spaces for movement and staying.

In-between spaces in the houses of Guilan

The manner of connecting the outside and inside in most of the historical houses of Guilan follows an extrovert pattern. Also, to benefit from natural ventilation, most of the houses have east-west directions. In architecture, the relationship between the inside and outside appears in three states:

- Private-Private, in which both the inside and outside are private,
- Private-Public, in which the inside is private and the outside is public,
- Public-Public, in which both the inside and outside are public.

Based on each of these three states, three categories of in-between spaces can be identified in the architecture of Guilan houses:

- In-between spaces that connect the outside to the inside: greenspaces, hedge, front yard, side yards, and backyard.
- In-between spaces that connect the inside to the outside: attics, the space between rafter and gabble roof, veranda, front veranda, veranda (hall), window, door-window, lattice, openings, reticulated window, canopy, and balcony.
- In-between spaces that connect the inside to the inside: Mid-doors after the entrance (middle mid-doors), platforms, and corridor.

The main focus of this article is on the in-between spaces that has the ability of providing movement and accessibility with inside-outside and inside-inside connections.

Spatial Organization Pattern

A spatial pattern is a set of physical features (specific shape and size) related to the space giving it a specific identity. Because such a space is used many times, it is called a "pattern". A spatial organization pattern is the result of organizing and arranging two or more spatial patterns together, based on which important architectural buildings of Iran are identified and registered. Mosques, schools, houses, baths etc. are all identified and categorized based on how they are organized in space. One of the most

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honorable examples of the spatial organization model in the past architecture of Iran is the "four-aisled courtyard", which has a dome or hall behind each aisle. This pattern has been used in many buildings with various uses (Ranjbar Kermani, 2017: 24).

Historical Houses of Guilan

Selected Houses for Study

The selection of houses was based on several characteristics, including the location of historic houses in different cities of East Guilan (Rasht, Rudsar, Amlash, Shalmaneh, Langrud, Lahijan), the number of walls of each house, cultural characteristics of residents, the variety of shapes and the manner of their spatial arrangement. According to the historical and oral documents related to these samples, they are among the houses that the least changes and alterations have been made in the structure of the main spaces and the spatial connections between them. Furthermore, according to the documents of the Cultural Heritage Organization of Guilan, the oldest buildings in this area belong to the Qajar period. Therefore, the historical houses of the Qajar period, the first Pahlavi and the second Pahlavi were selected. Among them, 24 samples had all the mentioned features. Table 1 shows the historic houses of this study along with their time and place of construction.

Row	Period	Name	Place	Picture	Row	Period	Name	Place	Picture
1	Qajar	Avanesian	Rasht		13	Qajar	Sigaroudi	Langrud	
2	Qajar	Abrishami	Rasht		14	Qajar	Kiamousavi	Lahijan	
3	Qajar	Aman Allahkhan Soufi	Omam		15	Qajar	Mohammadtaghi Soufi	Amlash	
4	Qajar	Ashkevari	Rasht		16	Qajar	Masoud Asmaei	Lahijan	
5	Qajar	Seresht Soufi	Amlash		17	Qajar	Mirza Kouchak Khan	Rasht	
6	Qajar	Tahvildari	Shalman		18	Qajar	Mirza Yousef Soufi	Amlash	
7	Qajar	Javad Nasri	Rudsar		19	Qajar	Nemati	Amlash	
8	Qajar	Haj Hadi	Rudsar		20	1st Pahlavi	Khan Soufi	Amlash	
9	Qajar	Mirjavadi	Rudsar		21	1st Pahlavi	Enayati	Amlash	
10	Qajar	Rezazadeh	Rudsar		22	1st Pahlavi	Azizollah Khan Soufi	Amlash	
11	Qajar	Sakineh Nikoukar	Shalman		23	2nd Pahlavi	Rouhani	Rudsar	
12	Qajar	Seyed Ali Moghimi	Rasht		24	2nd Pahlavi	Hadi Khan Soufi	Omam	

T1. Guilan Historic Houses (Authors, 2020).

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Description of In-between spaces in the Studied Houses within the functional-spatial factors

In order to answer to the first question, which searches for the types of in-between spaces in the historical houses of Guilan, the plan of all houses was evaluated. We studied the documents in the Cultural Heritage Organization of Guilan, observed the houses, conducted field research and interviewed the residents to identify the spaces and their function in the past and present as well as the spatial relationships they had in the plan. In the 24 studied samples, three categories of in-between spaces were obtained with inside-inside and inside-outside types which fulfill both accessibility and visibility.

1. Veranda: A veranda is a semi-open space that is the link between outside and inside of the building. Since it fulfills the function of accessibility in Guilan houses, it can be considered as an in-between space.

2. Entrance mid-door: In Mehrazi Glossary, a mid-door is defined as "a place between two doors" (Rafiei et al., 2003: 421). According to this definition, an entrance mid-door is a space between the outside and the inside, which is responsible for connecting the open or semi-open space outside with the closed space inside. Mid-doors are considered as in-between spaces because they create both accessibility and visibility

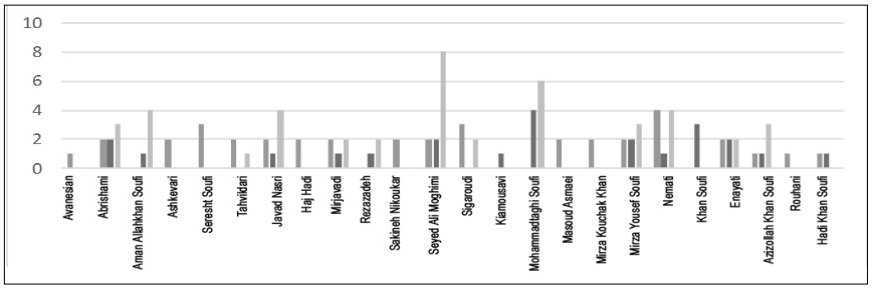
3. Middle Mid-door: As the name implies, it is a space between two spaces, or in other words, a place between two or more spaces within a building that is responsible for connecting those spaces.

These three types of in-between spaces were analyzed in the samples in terms of their spatial relationship pattern. The most frequent type of in-between spaces is veranda. 19 out of the 24 samples (79.1%) have a veranda which provides inside-outside connection. After that, there is the entrance mid-door and the middle mid-door with 58.3% and 54.2%, respectively. Moreover, 33.3% of the samples have all three types, 25% have two types and 41.7% have at least one type of them (Figure 2). The frequency of verandas is higher among the types that have only one in-between space. In other words, in 80% of the houses that have only one in-between space, we can see verandas and the other 20% have an entrance mid-door. Table 2 shows the plans of the houses and the spatial relationships of each house with their in-between spaces.

After examining the samples and extracting the in-between spaces, in order to obtain the answer to the second question of the research, they have been analyzed within the functional-spatial factors. Functional-spatial scope means the spatial analysis of in-between spaces and the manner of their arrangement in the plan (spatial organization pattern).

Analysis of the pattern of spatial organization of in-between spaces

To evaluate the spatial relationships of in-between spaces with their adjacent spaces, two types of houses can be identified: houses with verandas and houses without verandas. This division is due to the presence of verandas in 80% of the samples. These houses either have one type of in-between spaces (veranda), two types of in-between spaces (veranda and middle and entrance mid-doors) or all three types of in-between spaces. The remaining 20% of the houses either have only an entrance mid door as their in-between space or have both middle and entrance mid doors.



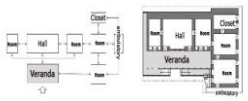
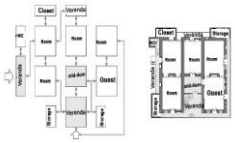
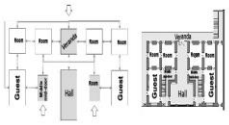
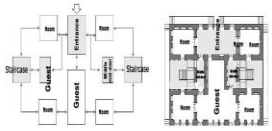
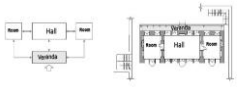
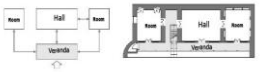
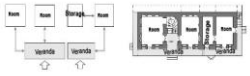
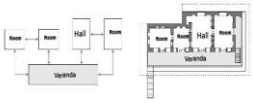
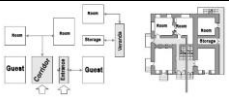
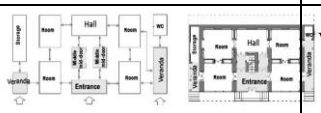
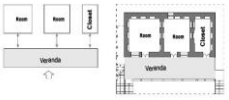
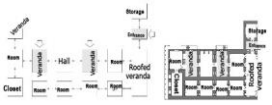
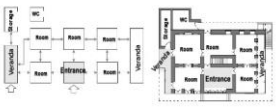
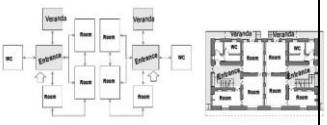
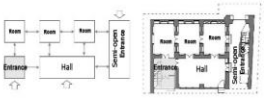
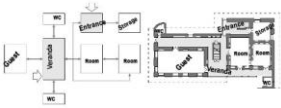
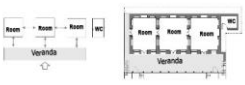
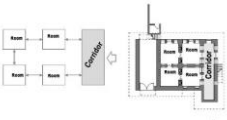
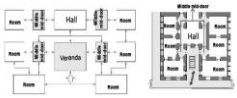
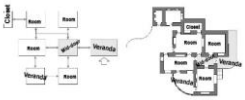
F2. Frequency of in-between spaces –veranda, middle and entrance mid-door in Guilan historical houses (Authors, 2020).

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Row	House	Spatial relationship and plan	In-between space	Row	House	Spatial relationship and plan	In-between space
1	Avanesian		Veranda	13	Sigaroudi		Veranda, entrance and middle mid-door
2	Abrishami		Veranda, entrance and middle mid-door	14	Kiamousavi		Entrance mid-door
3	Aman Allah khan Soufi		Entrance and middle mid-door	15	Mohammadtaghi Soufi		Entrance and middle mid-door
4	Ashkevari		Veranda	16	Masoud Asmaei		Veranda
5	Seresht Soufi		Veranda	17	Mirza Kouchak Khan		Veranda
6	Tahvildari		Veranda and middle mid-door	18	Mirza Yousef Soufi		Veranda, entrance and middle mid-door
7	Javad Nasri		Veranda, entrance and middle mid-door	19	Nemati		Veranda, entrance and middle mid-door
8	Haj Hadi		Veranda	20	Khan Soufi		Entrance mid-door
9	Mirjavadi		Veranda, entrance and middle mid-door	21	Enayati		Veranda, entrance and middle mid-door
10	Rezazadeh		Entrance and middle mid-door	22	Azizollah Khan Soufi		Veranda, entrance and middle mid-door
11	Sakineh Nikoukar		Veranda	23	Rouhani		Veranda
12	Seyed Ali Moghimi		Veranda, entrance and middle mid-door	23	Hadi Khan Soufi		Veranda and entrance mid-door

T2. In-between spaces in houses along with their plans and spatial relationships (Authors, 2020).

Analysis of the spatial organization pattern in houses with veranda

The most important type of in-between space in the north of Iran (Guilan) is veranda which has access to the outer space and to the rooms. All verandas are definitely accessible from the outside because they are semi-open spaces and considered as inside-outside connections. In addition to accessibility, they also fulfill the role of the visibility of surroundings and the entrance of the house. Besides the outdoor space, verandas have a direct access of 88.9% with the rooms of the house and a direct access of 72.2% to the first floor of the houses with two floors. The lowest accessibility of a veranda with the entrance mid-door is 22.2%. This is partly because of the disappearance of entrance mid-door as a closed space in sample houses of Guilan, which is replaced by verandas as in-between spaces to provide accessibility. Except for 20% of the samples mentioned earlier, the connection of veranda with other spaces of the house is from the highest to the lowest level with 44.4%, 38.8% and 33.3%, respectively, related to the hall, middle mid door, toilet and storage. Therefore, the results of the spatial organization of veranda in the samples showed the most connection between veranda and the outside space, the rooms of the house and the first floor. The minimum direct connection is with the entrance, storage and toilets. This model has been an efficient model in the design of houses in these areas, so that after passing through the semi-open space of veranda, without communication with other parts located on the ground floor, one can communicate with the first floor through access stairs. This is a sign of the principle of spatial independence and the creation of private and public privacy on the floors of the house in such a way that everyone can act independently at the right time. Also, the ground floor rooms could provide communication with the outside space in times of need and especially for family members and relatives with the least amount of privacy and distance. In such a way that they were accessed only through an in-between space (veranda). This way guests could enter the guestroom only through a veranda, without the need to enter to other private spaces of the house.

Also, out of 18 samples of houses that had a veranda, in 6 samples, all the connections between the spaces and veranda were direct and the remaining 12 had second-degree access in addition to direct access. Second degree access is the connection of veranda by passing from one space to the next space, in which the share of the hall or guestroom is 66.7%, followed by spaces such as the middle in-between spaces, private rooms and storage-closet with 33.3%. The share of indirect connection between veranda and entrance mid door is 25%, (9 out of 12 samples). This means that in houses that do not have an entrance mid door, veranda acts as the entrance of the house. The access to the hall or guestroom is usually possible after passing through a space. Private rooms are located farther from the entrances and verandas. Figure 3 shows the spatial organization pattern of verandas in houses with one, two and three in-between spaces.

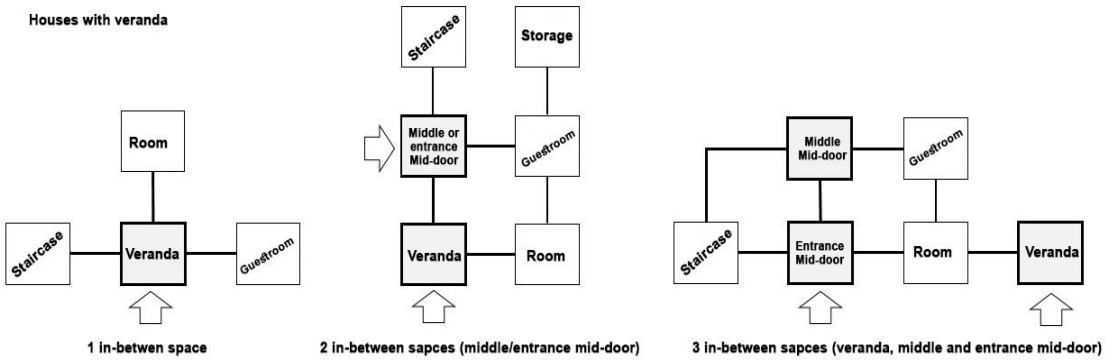
Analysis of the spatial organization pattern of houses without verandas

The entrance mid-door, which has the highest number of applications after the veranda, with 92.8% of frequency among the studied samples, has the highest share of direct connection with the rooms of the house. After that, with 78.5% connection with outdoor space and 57.1% connection with the staircase and middle space. It should be noted that the entrance mid-door with 7.1% connection to the lavatory has the least amount of connection with the surrounding spaces, which is evidence of changes in the spatial and functional relations of in-between spaces in the contemporary houses of these areas. However, today, the lavatory of houses is usually located at the entrance of the house, and if there is such a space, it is used as a means of entrance. Whereas in the past, this connection had its lowest level and in terms of architectural space, this space provided more accessibility and visibility than other spaces in the house. The share of entrance mid-door with other parts of the house, including the storage is 14.3%, the main hall is 35.7% and the veranda is 42.8%.

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Regarding the 42.8% relationship with the veranda, it should be noted that sometimes there is a veranda in the houses of Guilan, but it does not play the role of an in-between space, causing the difference between the percentage of entrance and veranda relations in previous writings. Nevertheless, it can be concluded that the most connection of entrance mid-door in Guilan houses is with the rooms of the house and the outside space. In more than half of the cases, they have a direct connection with the middle mid-door and the staircase. Moreover, despite the contemporary houses, there was a minimum connection between the entrance and the storage and thelavatory.



F3. Spatial organization pattern of verandas in houses with veranda (Authors 2020).

With regard to the accessibility of the second-degree entrance mid-door to other spaces of the house, the most connection was found with the private space (private rooms) of the house, which is seen in 75% of the samples. This means that in 9 out of 12 samples, the entrance mid-door and the middle mid-door accesses private rooms through only one space. This connection is mainly either with the main rooms of the house or the middle mid-door. The second space that has second degree access with the entrance mid-door is the hall. The hall or guest room with a share of 41.7% among the studied samples is after the private rooms in terms of connection with the entrance mid-door. This way guests entered the hall after two spaces. One of them was mostly the middle mid-door with a small area. Spaces such as verandas and closets (storages) each with a share of 16.7% are connected to the entrance mid-door with second-degree connection. Therefore, unlike contemporary examples where the closet (storage) or kitchen support space is adjacent to and directly connected to the entrance, this connection is shaped differently in historic houses.

The middle mid-door is the third and the last type of in-between spaces in the houses of Guilan with a share of 54% in 13 samples of houses. The connection of this middle space with the rooms is 100%. In all the existing models, the middle mid-door has the task of direct communication with the rooms of the house. After that, the relationship between this in-between space and the main hall with a share of 84.6% has the highest rate. Also, in 77% of cases, if there is a first floor, the access staircase is directly connected to and located in the middle mid-door. In 9 out of 13 samples that had a middle mid-door, a direct relationship between the middle mid-door and the entrance mid-door is observed. This share of 69.2% reflects the fact that in most cases (37.5% of cases) people entered the main space of the house by passing through two in-between spaces. Each of them, with their specific functions, have provided both spatial independence and spatial privacy. Also, the middle mid-door, as its name implies, has nothing to do with access to the outside space, so it has zero percent connection to the outside space. Its connection with the large storage and the lavatory is also low with 15.4%. This

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indicates that in the historic houses, not only the lavatory and the storage was not located at the entrance of the building, but they also did not have a place in the middle of the house. It seems that its connection with the semi-open veranda space was more than other cases. What can be concluded from the middle mid-door connections and its spatial organization in the samples is that this space has always been directly connected with the rooms and then has been connected with the main hall, the access floor to the next floor and the entrance mid-door, respectively.

In-between spaces such as the middle mid-door and the access corridors and corridors in the studied samples are mostly connected to the private rooms with second-degree connection. Out of 9 samples with the middle mid-door, 8 samples confirm such connection and with a share of 88.8%, it is considered as the first and the most important type of second-degree access in the middle of the houses. After that, it provides connection between the middle mid-door and veranda with 55.5% connection.

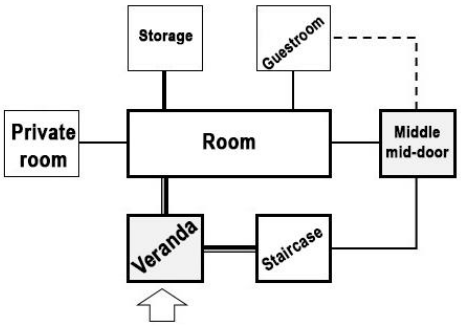
Conclusion

The research findings show that three types of in-between spaces can be found in the historical houses of Guilan: veranda, entrance mid-door and middle mid-door. Among these, the role of the veranda in the spatial organization of historical houses of Guilan is more than the other two types with a frequency of 80%. Therefore, two general types of houses (with and without veranda) be considered to analyze the role of in-between spaces in spatial organization. The following results have been obtained to explain the role of in-between spaces in the spatial organization pattern of historic houses in the functional-spatial realm:

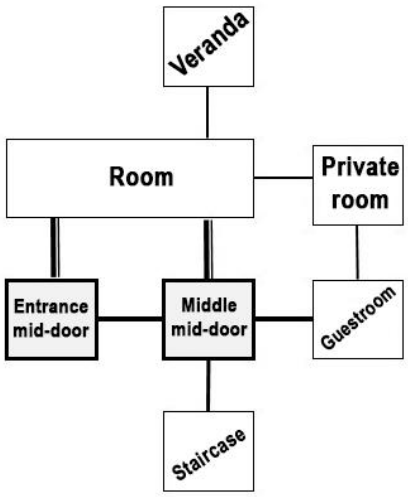
- In houses whose only in-between space is a veranda, this space gives access to all the main spaces such as rooms and guestrooms from the outside. It also is connected to the staircase of the first floor.
- In houses that have an entrance or middle mid-door in addition to the veranda, the access pattern changes. To access the guestroom, there are two types: if the veranda is used to enter the house, to access the guestroom in addition to the veranda, one has pass through an entrance mid-door or a middle mid-door. If the entrance mid-door is used to enter the house, it can be accessed directly to the guestroom. The access staircase to the first floor is always located in one of the two types (entrance and middle mid-door).
- In houses that have all three types of in-between spaces, there are three ways to access the guestroom: If a veranda is used to enter the house, one of the rooms of the house must be passed to access the guestroom. If the entrance mid-door is used to enter the house, it is possible to enter the guestroom with the help of one of the main rooms of the house or by passing through a middle mid-door. The access level to the first floor is always located in one of the two types of in-between spaces (entrance and middle mid-door).
- In the houses that do not have a veranda as an in-between space or do not have a veranda at all, the entrance mid-door replaces the veranda and accesses the main rooms. Sometimes, a middle mid-door is also used. This middle mid-door, which can be small in size, responds to multiple accessibilities. It has direct access to rooms, guesthouses and stairs. Private rooms are also located farthest from the entrance mid-door and next to the guestroom.
- According to what has been said, two patterns of spatial organization can be found in the historical houses of Guilan:
- Spatial organization pattern with veranda in which the veranda is the most important space between the inside and the outside of the house. Moreover, the staircase, rooms and the main space of the guestroom are accessed through it or through the entrance or middle mid-door (Figure 4).
- Spatial organization pattern without veranda, in which the middle mid-door acts as a link between the entrance mid-door, the staircase and the guestroom. The private rooms have the greater distance from the entrance mid-door (Figure 5).

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F4. Spatial organization pattern in houses with veranda (Authors, 2020).



F5. Spatial organization pattern in houses without veranda as an in-between space (Authors, 2020).

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