

DISSERTATION

The impact of ancient Iranian doorways on contemporary architecture

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Der Einfluss historischer Eingangszonen im Iran auf die zeitgenössische Architektur

Abstrakt

Die Gegenüberstellung von historischer und zeitgenössischer Wohnarchitektur im Iran spiegelt wesentliche kulturelle Veränderungen wider. Das Zusammenspiel von Privatsphäre und sozialen Räumen betreffend zählen Verbindungswege und Zugänge in der historischen iranischen Architektur zu den wesentlichen Gestaltungselementen. Diese gestalterischen Traditionen verschwinden und sind in der zeitgenössischen Architektur kaum mehr existent. Die Herstellung eines Gleichgewichts zwischen Privatsphäre und sozialer Interaktion eröffnet die Frage nach der Interaktion bestimmter architektonische Elemente und sozialer Verhältnisse, basierend auf bestimmten kulturellen Werten. Die vorliegende Studie zielt darauf ab, die traditionellen Merkmale der Hauseingangszonen von Shiraz in der Qajar-Dynastie (1796 bis 1925) und der Pahlavi-Dynastie (1925 bis 1979) zu untersuchen, dahinter liegende kulturelle Muster zu analysieren und die transformativen architektonischen Elemente herauszufiltern. Die daraus gewonnenen Erkenntnisse sollen zu einem den Anforderungen der heutigen Zeit entsprechenden Einsatz anregen.

Um herauszufinden, welche historischen, architektonischen Gestaltungsmerkmale das Potenzial haben in der zeitgenössischen Architektur eingesetzt zu werden, wurde eine Kombination aus architekturtypologischer Fallstudie und Interviews, letztere basierend auf Fragebögen, verwendet. Zunächst wurden verschiedene Typen historischer Wohneinheiten in Shiraz aus verschiedenen sozialen Schichten beruhend auf stratifizierten Stichproben untersucht. Vergleichend dazu wurden moderne Wohneinheiten der zeitgenössischen Periode, ebenfalls aus allen sozialen Schichten selektiv betrachtet.

Die daraus gewonnenen Erkenntnisse bestätigen die Gültigkeit allgemeiner Merkmale von Hauseingangszonen in Bezug auf architektonische Muster historischer Häuser in Shiraz und präsentieren die Transformation bestimmter Eingangselemente. Diese Ergebnisse legen die Berücksichtigung zeitgenössischer kultureller Prägungen im Bereich der architektonischen Gestaltung von Hauseingangszonen nahe, indem vernachlässigte historische Potenziale, basierend auf der gesellschaftlichen Wahrnehmung des idealen Eingangs als Lösung für aktuelle Fragestellungen präsentiert werden können.

The impact of ancient Iranian doorways on contemporary architecture

Abstract

The comparison of historical and contemporary residential architecture in Iran indicates significant cultural changes. Regarding the interplay of privacy and social spaces, connecting paths and accesses are among the essential design elements in historical Iranian architecture. These design traditions are disappearing and hardly exist in contemporary architecture. The creation of a balance between privacy and social interaction opens the question of the interaction of certain architectural elements and social relations, based on certain cultural values. The present study aims to examine the traditional features of the Shiraz house entrance zones in the Qajar dynasty (1796 to 1925) and the Pahlavi dynasty (1925 to 1979), analyze underlying cultural patterns, and pinpoint the transformative architectural elements. The knowledge gained from this is intended to stimulate an application that meets the requirements of today.

To find out which historical, architectural design features have the potential to be used in contemporary architecture, a combination of an architectural typology case study and interviews, the latter based on questionnaires, was used. First, different types of historical housing units in Shiraz from different social classes were examined based on stratified random samples. In comparison, modern residential units from the contemporary period were also examined selectively from all social classes.

The insights gained confirm the validity of general features of house entrance zones in relation to architectural patterns of historical houses in Shiraz and present the transformation of certain entrance elements. These results suggest that contemporary cultural influences should be considered in the area of architectural design of house entrance zones by presenting neglected historical potential based on the societal perception of the ideal entrance as a solution to current issues.

To my mum
In memory of "Dad"

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Chapter 1

Introduction

Introduction

Nowadays, there is a kind of rupture in the process of Iranian architecture, including residential cases and its departure from the theoretical foundations appropriate to Iranian culture.¹ Entrances, as the first part of the house in relation to the environment, and also one of its architecturally and socially most important zones, shows this rupture clearly. Its characteristics also show the way of thinking, social etiquette, and in general, cultural affiliations of its inhabitants. In contemporary architecture, following particular traditional design patterns has declined. The current issue is the result of negligence in the consideration of traditions.²

Shiraz as one of the important cities of contemporary Iran due to its rich historical background, including trading and its connection to the Persian Gulf, having industrial infrastructures and universities it has a valuable architectural history, too.

It has different monuments, historical and artistic buildings especially related to the Zand and Pahlavi periods, the features of which may be useful as samples for the current situation. The literature in this regard, gathered from archival studies of scientific centres, is mostly general and theoretical, with less practical results. Therefore, it is insufficient to redefine the features to suit the current issues, which is the purpose of this study. This purpose will be achieved by an investigation, through a literature and archival study as the primary instrument, and a combination of two methods, consisting of a case study plus a questionnaire, the first of which is performed on houses of various social classes, located in the historic district of Shiraz, and the second one on a group of current inhabitants.

In addition to the theoretical advantages, which come true by filling the literature gap between features and their implications, this study also has a functional approach, presenting a solution for the current issues.

¹ Here culture means the ideas, customs, and social behavior of a particular people or society of Iran. (Moazzami and Hojat 2018)

² Invented traditions are cultural practices which are perceived as traditional, arising from the people, and of immemorial antiquity (Hobsbawm and Ranger 1983).

This chapter will present a preface, including the background of the research, the context, and the considered conceptual approach. Then it will look at the existing literature and discuss the gaps of interest to state the problem. In the next section, the purpose and methodology of the study will be addressed, based on the problem statement. The research questions, which come later, will present the process which should be performed to get through the purpose. The rationale, significance, and nature of the study take place later on, and will respectively present the research method justification, the importance of the problem, and the research method, along with sample selection. The definitions section will present a summarized explanation of the operationally used terms. Assumptions justify the selected approach of the research and finally, the limitations/delimitations will explain the research factors under or beyond control. At the end of the chapter, the sections are summarized into a paragraph, with a description of the remaining chapters.



Figure 1-1 Sample of residential entrance door

1.1 Objectives

This study aims to investigate the characteristics of residential building's entrance spaces of Shiraz in a particular historical era, analyse the cultural patterns, and extract the transformative ones, according to the contemporary culture and demands, and as a responsive suggestion to the current issues.

The general and practical objectives of this research are shown in (Diagram 1-1).

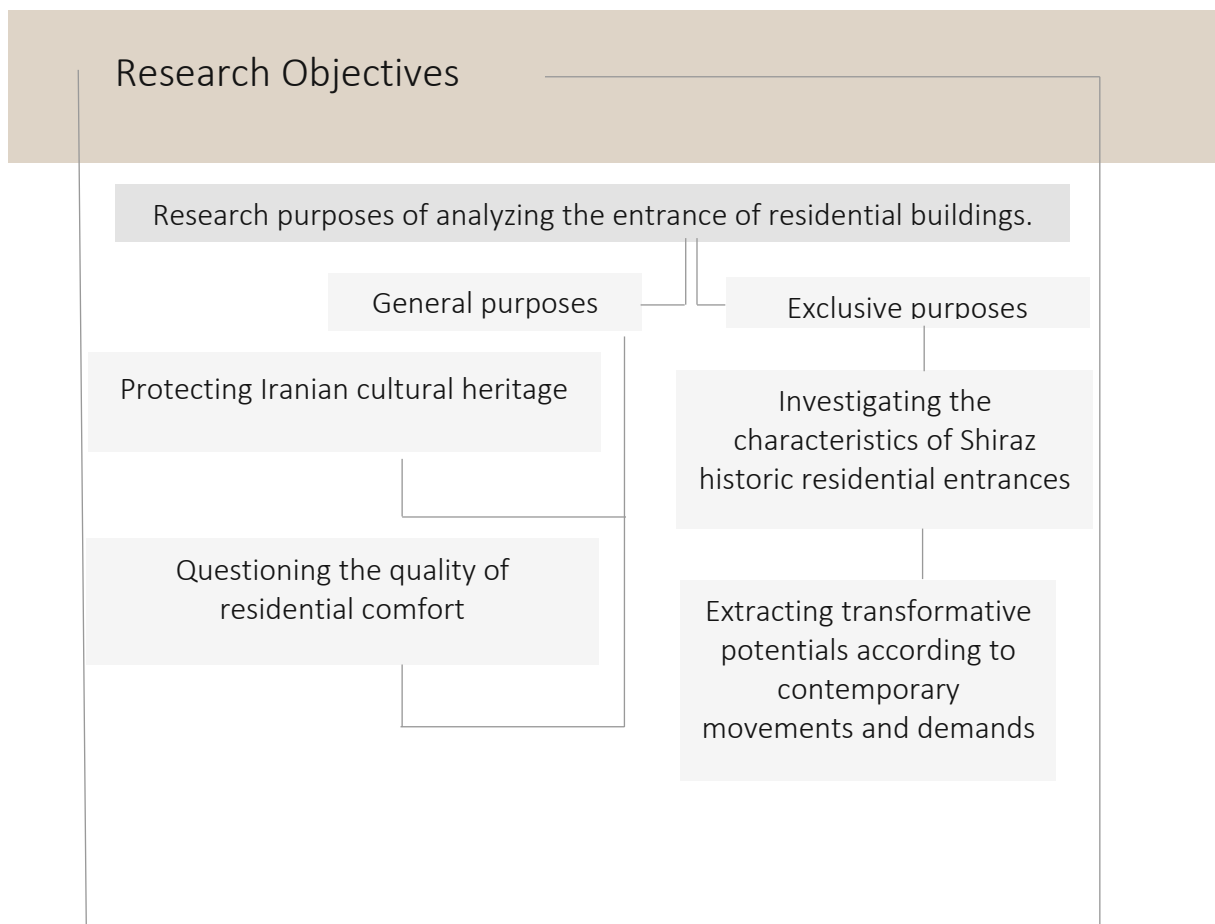


Diagram 1-1 Research Objectives

1.2 Hypothesis and research questions

Problem statement

The word “identity” has different meanings and definitions in different fields and doctrines of thought. In Architecture, identity can be delineated as the characteristic that creates differentiating spaces (Arthur and Passini 1992). It is the character and spatial attributes of an object or a place that enhance the ability to recognize and identifying a particular environment, those attributes of an object that make it distinct, ultimately unique, and easily separable, then it stands for individuality or oneness (Lawson 2001).

The identity of an object or a space can be described as a set of signs which show for a region the characteristics of that particular space in terms of culture and function (Razavi and Ghahghayee 2017, 11). Most architectural spaces are reflected by some cultural and environmental characteristics (H. Soltanzadeh 2010, 7).

Iranian architecture also follows similar rules and regulations and has a firm and irrefragible bond with Iranian culture, values, and behaviour patterns of society, which has been reflected in an architectural component, varying in design, size, proportion, geometry, and colour. Such component is, for example, the vestibule, central courtyard, four-sided Iwan, ceramic surfaces, paintings on wall and ceiling.

Iranian architectural identity has gradually changed and has lost much of its historic design and functionality. Investigating criteria of these principles’ architectural identity in the expression of each period explores the works of builders and planners of each period.

Today the architectural identity changes have created a heterogeneous and chaotic texture compared to the past. Furthermore, using pre-drawn and typical plans regardless of the object’s position and the user requirements has decreased the efficiency of the residential units in responding to the behavioural pattern of the residents. Due to this issue, people are adapting themselves to the current situation or tolerate the conflict between their behavioural patterns and the situation.

Also, due to the changes of residential units, especially their entrances changed compared to historic styles. Nowadays entrances have become a mere shell for their function, understanding the typology and characteristics of the entrance space of the remaining

historical houses may help architects approach an upgraded method in design, based on what has been neglected.

There have been efforts in order to discover and identify the features of entrance spaces by experts from Iran and abroad. However, these efforts have been widespread mostly and have not focused on residential building entrances specifically. The few researchers that have focused on this issue addressed the issue only with a theoretical approach, and the functional results or suggestions have remained absent.

For example, there are researches such as "A Journey in the Theoretical Foundations of Architecture", written by Gholamhossein Memarian (G. H. Memarian 2005), which mentions various theories about the classification of architectural buildings in terms of shape, but the entrance category is not specifically addressed. "Entrance Space in old-style³ Iranian Architecture" by Hossein Soltanzadeh (H. Soltanzadeh 1993) is another example with more relevance, which introduces different entrance components in old-style Iranian architecture, but it has a general approach, and is not allocated to residential buildings. Also, more relevant studies have been conducted, such as "Cultures and Beliefs" by Tahera Akbari (Akbari, 2006) and "Entrance Spaces in Traditional Iranian Architecture" (H. Soltanzadeh 1993) which focus precisely on the entrance space of houses from a sociological point of view. But they do not include the classification and analysis of the architecture that was examined in this research. Moreover, these studies are mostly focused on characteristics, not touching transformative potentials, and are mostly theoretical, not practical, or application-orientated (Broadcasting 2007). In other words, while the literature indicates the characteristics, it is not known which ones would match the current issues, which is the focus of this study.

³ The old-style period in Iran refers to the architecture of buildings that were built before about 1920 according to Islamic culture.

1.2.1 Research Questions

The investigation of characteristics of residential entrance spaces may help to reuse or redefine them, as a solution for contemporary issues. To achieve this, first, the features must be analyzed from a sociocultural point of view, and then, the features which have the required potential, will be suggested as valuable ones. As to go through this process, one may question:

What architectural patterns do entrances of Shiraz historical houses follow?

Which architectural characteristics of Shiraz historic residential entrances have the potential to transform into contemporary features, which divides into these sub-questions, itself:

Which patterns of Shiraz historic residential entrances can be converted to contemporary equals?

The next section will explain the step-by-step process of how to find an answer to these questions.

1.3 Methodology

Part of this research is to collect data from a variety of different sources and to be able to assemble the existing different information systems. To exegesis them accurately, a solid methodological framework is required. The way of collecting data has an organic interaction with the purpose of the research and has to be chosen according to scientific needs. Guidelines stated in Saunders' book (Saunders, Lewis and Thornhill 2009) were followed and used for the research methodology and interpretation of the results. Saunders shows an overview of research-related terminology and rough interaction phenomena between them, which he calls "research onion" (

Serie 2		Please rate the following indicators based on your opinion.		
Part 1	Zones	I disagree	I have no idea	I agree
	Frontage			
1	Defining a pre-space to separate the entrance from the surrounding space			
	Portal			
2	Considering a retraction at the entrance door to distinguish it from the passage			
	Doorway			
3	Designing the doorway specifically and emphasizing its functional importance			

	Vestibule			
4	Providing a space for waiting, as well as breaking the entrance path into parts			
	Corridor			
5	Creating a hallway to change the entrance path and provide privacy			
	Iwan			
6	Considering a semi-open environment for family gatherings			
	Arcade			
7	Forming a shaded path for comfort when sitting or moving in the entrance area			

Questions		Answers		
<i>Serie 2</i>	Please rate the following indicators based on your opinion.			
<i>Part 2</i>	Components	I disagree	I have no idea	I agree
	Door			
1	Considering security monitoring system in the entrance design			
	Knocker			
2	Installing alarm equipment on the entrance door			
	Threshold			
3	Placing a divider at the bottom of the door frame to separate the zones			
	Platform			
4	Providing a space for sitting and waiting with furniture			
	Overdoor			
5	Design and decoration of the upper part of the entrance door			
	Opening			
6	Creating skylight or other openings in the entrance zone to provide lighting			

To come to the methodological core, that is data collection and data analysis, we need to understand and explain further outer influencing layers rather than just peel and throw away and choosing the centre. A systematic approach from the outer layers towards the core describes the chosen methodological approach, which is explained briefly here:

In terms of research philosophy, the present study is a type of research with a philosophy of pragmatism. Based on this philosophy, it is possible to judge a topic from one or both viewpoints about the impact of the social actors. The diversity of viewpoints helps to create a practical approach and to better focus on solutions to the raised problems.

In terms of the research approach, this research is considered inductive. Technically, this approach focuses on the working title of the theory right from the start and the hierarchy of the research runs from research question to observation. Next are the description, analysis, and at the end, suggestions will be given.

The research strategy can be expressed in the form of archival research and existing information of sampling and helps to explore and explain the changes happening over a long span of time, also providing descriptive analysis and suggestions.

From the chosen viewpoints onwards, the study uses mixed approaches, which allows using both qualitative and quantitative methods of data collection, as well as for data analysis. The combined method has the advantage to allow offsetting the limits of each method, making it easier to find and fill the gaps in the information.

In terms of time horizon, the view of this research is not cross-sectional and is considered longitudinal to help to study events with focused samples over a longer time while being responsible for both qualitative and quantitative research. And finally, for data collection and analysis procedures, this study benefits from research publications as a primary data collection tool, and case study and questionnaire as secondary data collection tool based on the guidelines of “Research Methods for Business Students” by Mark Saunders.

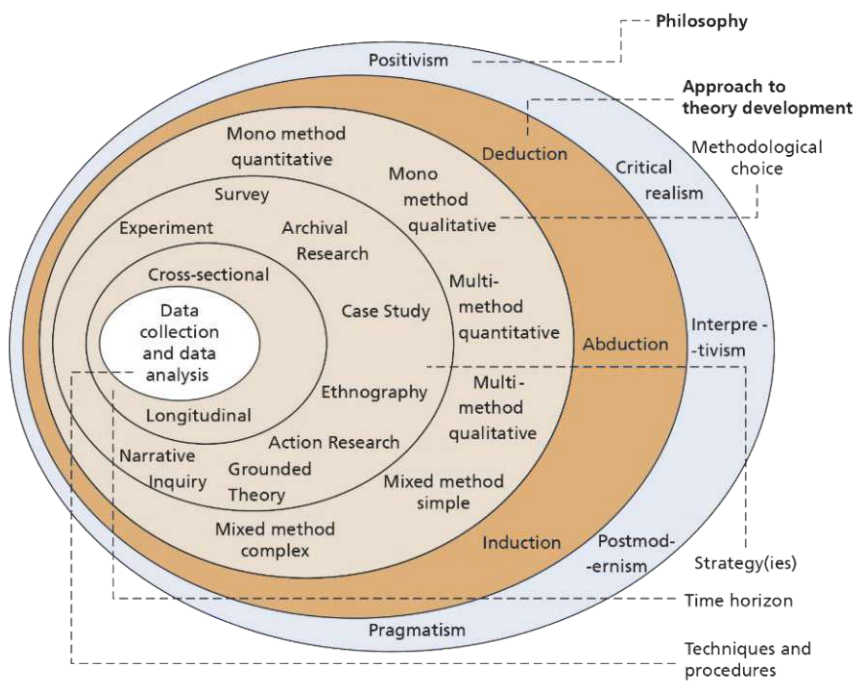


Figure 1-2 Research Onion
Source: ©2018 Saunders, Mark; Lewis, Philip; Thornhill, Adrian

The method given by Saunders (2007) is considered as the best option to get the required results, because:

Firstly, in order to make practical suggestions out of the characteristics of historic residential entrances in Shiraz, one must first know their characteristics, which is almost possible from studying the existing literature, but there is no evidence of the mentioned patterns existing in the entrances of the entire houses and it is not possible to generalize the general characteristics to Shiraz houses. Therefore, observation of the samples to confirm the validity of these features is necessary, which justifies the use of the case study method.

Secondly, to discover the valuable features and suggest them for contemporary architectural issues, a reliable guide is needed, and since the residents of current housing units are the contemporary society, there is no better reference than these residents to access this guidance. Given that the entrance function stems from the needs of residents, recognizing these needs can be a perfect guide for identifying valuable features and bringing research closer to its ultimate goal, which is to suggest them as solutions for current issues. Therefore, a questionnaire was designed to discover the needs of contemporary inhabitants and their ideal entrance space, as to make practical suggestions, based on the investigated features in the previous step.

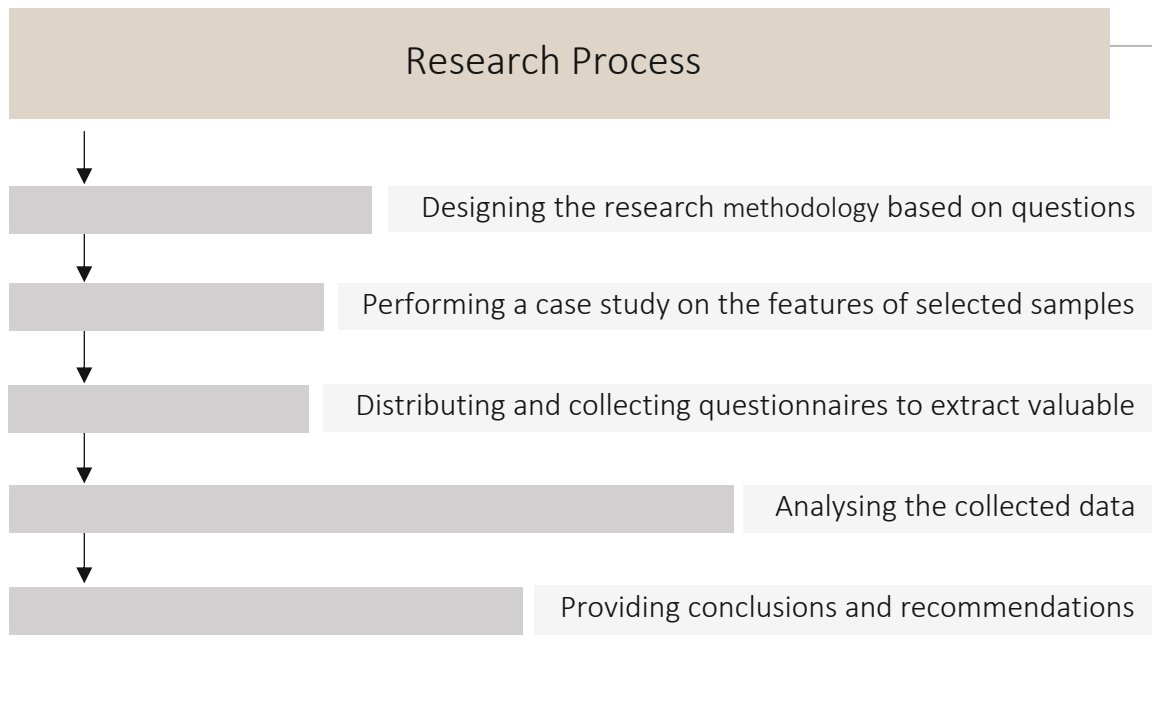


Diagram 1-2 Research process

1.4 Research Design

As a mixed-method research, this study will also use a mixed-method to collect data, which includes a case study and a questionnaire.

This method is considered as the best option to get the required results, because first of all, in order to make practical suggestions out of the characteristics of historic residential entrances in Shiraz, one must first know their characteristics, which is almost possible from studying the existing literature, but there is no evidence of the mentioned patterns existing in the entrances of the entire houses and it is not possible to generalize the general characteristics to Shiraz houses. Therefore, observation of the samples to confirm the validity of these features is necessary, which justifies the use of the case study method.

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The basic information required for this study will be collected from library studies of scientific centres, such as universities, organizations, and institutes, especially from Shiraz Documentation Centre and Library, Library of Cultural Heritage Organization, International networks, and information bases (internet), official information, cultural heritage reports, and other related documents. Also, the combination of the above methods provides the tools needed to answer the research questions, by providing an investigation platform for analysing the entrance characteristics of Shiraz historical houses through the case study method, and categorizing them into convertible and non-convertible ones, according to the questionnaire results. As mentioned before, this design was selected based on the guidelines of "Research Methods for Business Students" by Mark Saunders.

1.5 Sample Selection

Given that this study uses a hybrid design with two methods, it is necessary to express the sampling approach for both.

1.5.1 Questionnaire

Statistical Population

The statistical population in this study is the adult inhabitants of Shiraz residential units in 2020, which includes 1,189,834 people, according to the latest census report.

Sampling Method

The samples were selected based on the purposive sampling method, due to the dominance of qualitative nature, as well as the large statistical population. The population was first divided into two groups, consisting of both residents of apartments and houses, among three classes of society, which include the upper, middle, and lower classes, as to make the results become as close as possible to the opinion of all people living in the city. Therefore, 30 questionnaires were randomly distributed among 3 groups of 10 adults: residents of upper-middle- and low-

class neighbourhoods. The questionnaires were distributed in such a way that the number of apartment and house inhabitants was almost equal in each group. Gender was also considered random. Because the focus of this research has been on entrance performance in the middle-class homes of the community, homes that belonged to affluent and poor residents were excluded from the scope of the study. This means that the houses that due to the owner's poverty did not include the usual spaces in the Iranian house, or on the other hand, houses that had addition and custom-made spaces due to the owner's wealth, were not considered in the study. (Diagram 1-3).

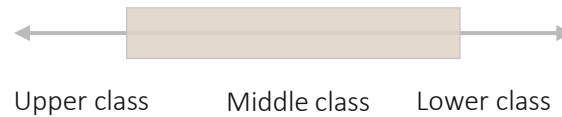


Diagram 1-3 Questionnaire sampling

1.6 Sources of data

The data collection instruments of this study are firstly the reliable library studies, and secondly, the combined methodology designed, including the case study, based on the cultural heritage documents, and a questionnaire, emerged from "Home, Culture, Nature" book by M. R. Haeri Mazandarani (Mazandarani 2009), as a standard source to ensure validity, and also gone through SPSS⁴ analysis to prove the reliability. As a process, the existing literature should be reviewed first, and then the analysis of data from the case study and the questionnaire will be used to fill the existing gaps. This process consists of a pattern analysis through the case study, which collects the data needed to verify the considered characteristics of historical entrances, and the distribution and collection of questionnaires to extract the valuable ones of the above characteristics.

The information required for this research is collected by these two main instruments:

- Literature studies at scientific centres such as universities, organizations, institutes and research centres, Shiraz Documentation Centre and Library, Library of Cultural Heritage Organization, International networks, and information bases (internet), and cultural heritage reports and documents, as the basic information sources of this study.
- A combination of case studies and questionnaires, as the main data collection instruments.

1.7 Validity

A useful research method must have several desirable characteristics such as validity to lead to correct results. Validity means which of the selected methods allows us to achieve the goals of the research subject or not. According to this definition, the validity of a method is the validity of its structure as a measurement tool that shows the extent to which the instrument can measure the size of a structure or a feature. Validity is important because disproportionate measurements can make any scientific research worthless (Khaki 2004, 288). As this research consists of two data collection methods, the validity of both should be verified.

⁴ Statistical Package for the Social Sciences

1.7.1 Case study

Despite the advantages of the case study method, its validity remains in doubt. Tests to establish the validity of data are important to determine the quality of the data obtained. Unfortunately, there is no single coherent set of validity tests for each research phase in the case study available in the literature. However, this study provides attempts to improve the validity of the case study. Same as validity, there is not any verified reliability test for confirming the stability of case studies, and so the reliability is mostly uncertain. As it is a necessity to ensure the results or collected data are stable if repeating the process. In chapter four considered attempts to enhance the reliability of the case study will be explained.

1.7.2 Questionnaire

In order to check the validity of the questionnaire, in addition to the variables based on theoretical foundations of existing literature, in the preliminary study stage, the ambiguities of the questionnaire based on the opinion of experts have been removed and the eligibilities have been improved to make sure the questions provided have no ambiguity or inadequacy and are verified as efficient measurements. A detailed explanation of this attempt is presented in chapter four. The reliability of the questionnaire was determined using Cronbach's alpha, by SPSS software, the review of which will be presented in the same chapter four.

1.8 Reliability

As another important characteristic of study methodology, reliability is defined as: "The range in which the research results remain constant over a period of time and a real and accurate sample of the entire population under study is referred for reliability, and the research findings can be repeated through matched research, then the reliability of the research methodology "It will be confirmed" (Khaki, 1999). This expression is the idea of reproducibility or repetition of the results or observations.

To increase the reliability of the studied documents and sources, while comparing the contents, the most appropriate cases were used for research to confirm the reliability of the research documents.

1.9 Data Collection and Management

As stated, and based on the conceptual framework of the research, this study will use a three-step process to achieve its goal, which is as follows:

- Collecting general information and the background of entrance patterns in Iranian architecture from reliable library sources and cultural heritage documents of the relevant area and then classifying and interpreting them in accordance with the considered approach.
- Performing a research approach with a case study method to validate the general data received from library studies of residential entrances in the context of historical houses in Shiraz as the spatial scope of research by stratified sampling, analysing the characteristics of each selected sample, and presenting a table of the results of this analysis.
- Extracting the entrance valuable characteristics, based on contemporary residential needs, going through distribution and collection of questionnaires between citizens to identify these needs.

1.10 Data analysis procedures

As to provide an acceptable answer for the main question of this study, restated below, it is first necessary to answer each of the sub-questions.

Table 1-1 Research question structure

Main question	Relevant data collected
Which architectural characteristics of Shiraz historic residential entrances have the potential to transform into contemporary features?	The output of data collected from the three stages process designed.
Sub-questions	Relevant data collected
What patterns do the entrance of Shiraz historical houses follow?	The results of the case study method in the context of entrance features of Shiraz historical houses were provided.
Which patterns of the above can be converted to contemporary equals?	The results of questionnaires, based on the considered features in the previous step, were distributed and collected between Shiraz contemporary residents to identify their perception of the ideal entrance space.

The categorization and interpretation of the literature, and also the case study, were provided by coding and theming the data gathered, due to the non-statistical nature of the data. However, in order to provide meaningful outputs from the final step, i.e. gathering data from questionnaires, the analysis phase of the study was supported by Microsoft Excel and SPSS, as two appropriate software tools to analyse the statistical data. To get results, the data gathered through the distribution and collection of questionnaires were entered into the software as the inputs, and the desired outputs were extracted after the formulated analysis process. The conclusion and suggestion tables were also provided as the final results, i.e. the practical outputs of the study as mentioned before.

1.11 Limitations and delimitations

As a research, this study is no exception to the general rule of limitations and delimitations and is certainly influenced by factors out of control, as well as factors determined by the researcher. Therefore, considering the impact of these factors in the research results, along with their inevitability, the need to consider them and also, provide some strategies to minimize their negative impact on the research outputs. These factors and their considered strategies are as follows:

1.11.1 Limitations

- I. The lack of access to the cultural heritage documents limited the scope of this study. Due to the fact that the architectural documents of more than half of the historical houses of Shiraz were not available in the archives of the cultural heritage of Fars province, it was not possible to pick selections from the entire samples.
 - Considered strategy: As to enhance the validity of the case study results, the selection of accessible samples was done with a specific focus on dispersion in terms of location, style diversity, and differences in resident welfare status in a way that covers the existing limitations and can be generalized to the whole samples.
- II. The size of the statistical population made the probability sampling methods almost impossible because the number of target individuals in those methods was beyond the research capacity.
 - Considered strategy: To make the results generalizable to the whole population, the questionnaires were distributed among three classes of society, which include the upper, middle, and lower classes, and in such a way that the number of apartment and house residents was almost equal, with gender considered random.

1.11.2 Delimitations

- Spatial scope: The study of historical entrance features was delimited to Shiraz of all cities, by decision. The selected spatial scope was considered due to the wide range of historical architectural patterns in different cities of Iran, which could make the focus and sufficient attention on the targets of research impossible. Another justification for the chosen range is the familiarity with the architectural values of this city, as the hometown.
- Considered strategy: Considering that Shiraz is one of the most prominent cities in Iran in the field of architecture, and having significant originality and antiquity in this regard, the traditional architectural patterns of this city and its potentials can be generalized to other districts or even more, other countries with same cultural traditions. However, with the intention of reducing any negative effects, the case study went through a general literature review to ensure the generalizability of the specific features in this spatial scope, verifying the sufficiency of data as suggestions to restore the lost architectural identity of this border.

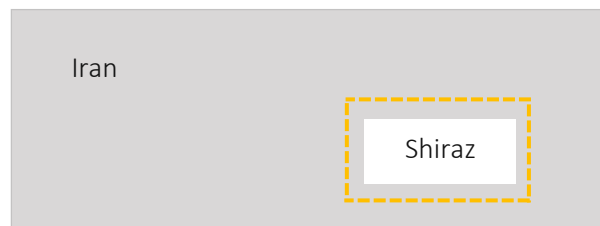


Figure 1-4 Spatial scope

- Temporal scope: The case study was also delimited to a specific period, which includes the Qajar and Pahlavi periods. This temporal scope consideration was somehow because the architectural documents of ancient eras and previous periods are inaccessible and inefficient, and also because these two eras, as the last periods before the contemporary era⁵, reflect all the whole patterns and principles of previous periods, in addition to their characteristics. (diagram 3-3)
- Considered strategy: In order to ensure the consideration of all-time characteristics in the selected temporal scope of the case study, the existence of previous eras

⁵ This is a period of Iranian architecture that continues from about 1920 until today.

characteristics was confirmed in the selected samples, by reviewing the cultural heritage documents. (Diagram 1-4)

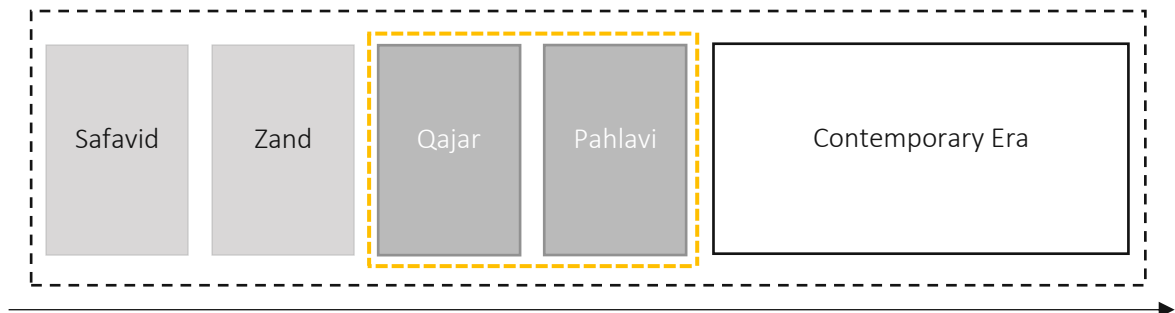


Diagram 1-4 Temporal scope

1.12 Summary

This chapter clarified the research questions of the study, which can be extracted in the form of a study target, as follows:

- Investigation and extraction of Shiraz historic residential entrance characteristics, which have the potential to transform into contemporary features.

This target, considered to make functional suggestions out of the process, is in proportion with the problem statement, which mentioned the existing gap in the body of reviewed literature, i.e. the absence of practical approaches in the architectural studies about entrances.

It is also aligned with the selected methodology, by using the mixed-method – a combination of qualitative and quantitative methods- as the practical approach needs both to get results. As the research design, this study is going through an approach, which consists of library studies to provide basic information about the background of historic residential entrance characteristics, and a two-step method, which includes a case study and a questionnaire to confirm the validity of general features in the selected spatial scope and extract the valuable ones as suggestions for contemporary architectural issues.

The data collected by the above instruments will be analysed in chapter four, by categorization and interpretation of the literature, and also the case study, in the process of coding and theming, and also through the analysis process of Excel and SPSS, to provide meaningful outputs from the questionnaire results.

As to execute the selected methodology, the data gathered through case studies and questionnaires have been categorized and prepared for the analysis process, which takes place in chapter four.

(Diagram 1-5) shows the research chapters.

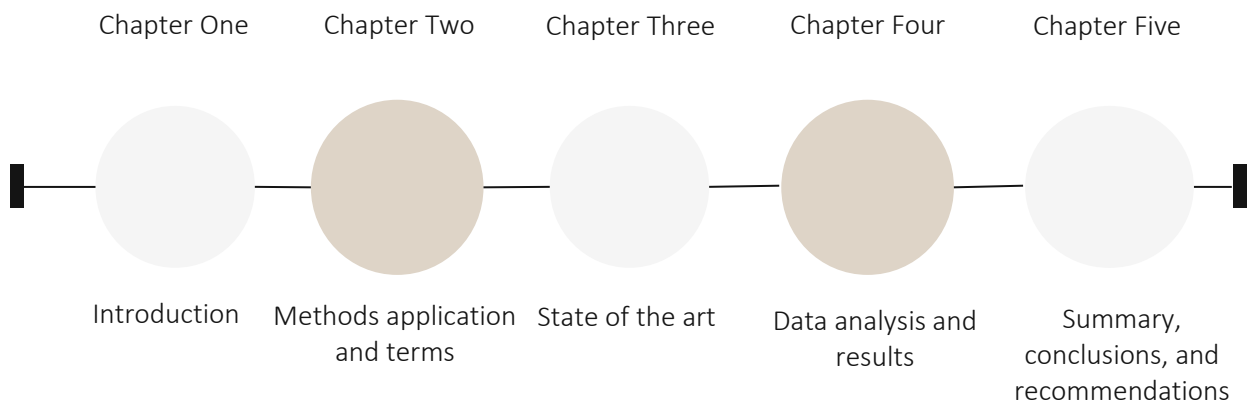


Diagram 1-5 Research Chapters

Chapter 2

Methods application and terms

Methods application and terms

2.1 Methods application

2.1.1 Literature

The first phase consists of investigating the entrance characteristics of old houses in the spatial scope of the study, i.e. Shiraz. Unfortunately, historical patterns of residential entrances of houses of Shiraz are limited in scientific literature.

There exists literature concerning houses of different parts of Iran, in a general manner, those patterns, which have been mentioned in the literature, are not focused on the entrance of houses. The area that was considered for research is an old part of Shiraz, where the studied samples from the Qajar and Pahlavi periods are located.

The literature studies in the field of Iranian entrance architecture forms the first phase of data collection. It is an integral part of the research, as a preface for the main data collection process. The basic information required for this study will be collected from libraries and archives of scientific centres, such as universities, respective organizations, and institutions, for example, from Shiraz Documentation Centre and Library, Library of Cultural Heritage Organization, International networks, and information bases (internet), governmental reports, cultural heritage reports, and other related documents.

2.1.2 Case study

The present study expresses its case study method by taking an analytical approach through the features of residential entrance spaces of Shiraz historic district, as one of the most important witnesses of socio-cultural developments. The architecture of this city is quite an example of these cultural changes. By examining the remaining historical buildings, a proper analysis of the social conditions of that era can be obtained. The term "Shiraz" in this study indicates the urban area that is up to the first Pahlavi and the time period of this research spans from 1789, almost the middle of the Qajar dynasty to its end in 1925, and over the Pahlavi era from 1925 to 1979. Since architectural documents of previous periods were inaccessible, also relying on the fact that these two periods reflect a big variety of architectural characteristics of previous periods.

The study of Shiraz houses in the Qajar and Pahlavi periods helps to understand and characterize the architectural features of the entrance during the past periods. The selected houses are among the substantial samples, under the supervision of cultural heritage and are mostly renovated or under renovation.

The samples were selected based on a stratified sampling method.⁶ Thus, first, a list of all houses related to the Qajar and Pahlavi periods of Shiraz has been prepared, based on the cultural heritage reports. The mentioned list went through a selection by examining the current condition of the houses and their usability in terms of architectural features worth considering, as well as the stability of the structure, especially regarding the entrance space. Finally, ten of these samples have been selected in such a way that all social classes in terms of ownership are included.

This selection has been made among different types of residential units, belonging to all social classes, and has the commonalities of several neighbouring houses. The samples were selected based on the similarities and differences and the maximum spatial and structural diversity, considering the distinct patterns in the entrance space and the possibility of access to reliable sources to ensure the correctness of the name and function of the spaces. The selection has also been made in such a way that there is at least one sample belonging to each social class, including upper, middle, and lower classes to fill the mentioned gap in the previous researches, which was the doubt about the generalizability of the characteristics of prominent samples to the entire ones.

⁶ Stratified sampling is a probability sampling method and a form of random sampling in which the population is divided into two or more groups (strata) according to one or more common attributes (Dudovskiy 2018).

The selected social classes of the case study are shown in (Diagram 2-1):

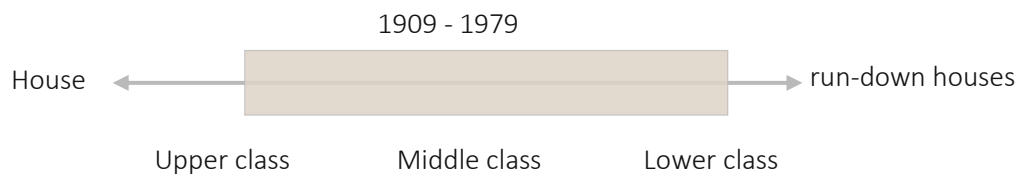


Diagram 2-1 Case study sampling

Considering that the previous residents were not present or had died, identifying the architectural patterns and culture behind them was not possible either by referring to the general scope of the research literature or by asking the current residents, which had no clue of the subject. Moreover, the architects of these buildings lived in the past and it was not possible to directly benefit from their knowledge and experience. Therefore, a case study including case-by-case examination of the above buildings was the only way forward to obtain reliable information about the characteristic of the entrance architecture, which was made possible by case study. In this regard, in addition to collecting information directly from the samples and examining the conditions of each in terms of the historical period and architectural style, cultural heritage experts⁷ were also assisted.

In the second phase, to extract the valuable features of the mentioned case study samples, the consideration of current needs became necessary, but there was no specific source to study the needs of the inhabitants of contemporary houses because these needs are constantly changing and it is not possible to discover them, except by asking direct questions from the individuals. Therefore, in order to assess these needs, considering the possibility of asking intended questions, a questionnaire was designed, as a suitable method to achieve the goal of identifying needs in this research due to optimal data processing and quality of answers.

2.1.3 Questionnaire

To recognize the valuable features of contemporary society and their needs, the collection of a questionnaire was concerned to discover the current inhabitants' opinions in this regard. Therefore, a similar sample selection was considered for the questionnaire. This time, the

⁷ Mohammad Soltani, Zahra Mahzoun, Raziye Rahpeyma

samples were selected based on the purposive sampling method,⁸ due to the large statistical population.

The questionnaire is based on a 5-point Likert scale⁹ and includes three sections of principles, zones, and components that emerged from the themes of the first phase of the research, i.e. case study. The questionnaire is available in Appendix and the complete information of its author is mentioned in the sources. In this process, 30 questionnaires were randomly distributed among three groups of ten adults each, from all social classes, and in such a way that the number of apartment and house inhabitants was almost equal, and gender was considered random.

The method of this research, after library studies, which was the basis for defining the next steps, was formed in two steps, namely, a case study and a questionnaire.

2.1.4 Abbreviations

The abbreviations used in this study are:

etc.: continuing in the same way

i.e.: in other words

m: meter

2.1.5 Definition of terms

The following terms were used operationally in this study:

2.1.6 Locations

The locations used in this study are:

⁸ Purposive sampling (also known as judgment, selective or subjective sampling) is a sampling technique in which researcher relies on his or her own judgment when choosing members of population to participate in the study. It is a non-probability sampling method (Black 2010).

⁹ A type of psychometric response scale in which responders specify their level of agreement to a statement typically in five points: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree.

Fars: Fars is one of the thirty-one provinces of Iran. With an area of 122,400 km², it is located in Iran's southwest, and its administrative centre is Shiraz (Soucek 2014, 148-168).

Shiraz: Shiraz is the fifth most populous city of Iran, and the capital of Fars Province also known as Pars and Persis (Persia) (Sykes 1921, 43). It is the spatial scope of our study.

2.2 Terms

Selected terms used in this study are:

2.2.1 Persian / Iranian

"Persia" was the official name of Iran in the Western world before 1935 when the country and vast surrounding lands were known as Persia (derived from the ancient kingdom of Persia and the Persian empire) (Johnson 2020). However, Persian people within their country have long called it Iran (often spelled "Eran"). In 1935, the name Iran came into existence internationally and The Islamic Republic of Iran, with the boundaries in existence today, was founded in 1979 following the revolution which ousted the government of the Shah Mohammad Reza Pahlavi (1919–1980).

Generally, the term "Persia" today refers to Iran because the country formed over the centre of the ancient Persian empire, and the majority of its original citizens inhabited that land. Modern Iran is comprised of a large number of different ethnic and tribal groups (Johnson 2020). People who identify as Persian account for the majority, but there are also large numbers of Azeri, Gilaki, and Kurdish people, too. While all are citizens of Iran, only some can identify their lineage in Persia. (Johnson 2020). Considering Fars province, the main ethnic group is Persians (including subgroups; Larestani and the Basseri), while Qashqai, Lurs, Arabs, Georgians, and Circassians constitute minorities (Oberling 2014).

2.2.2 Entrance zones:

The particular persian terms comes in bracket.

Frontage (*Jlo-Khan*):

In some buildings, there is a big and wide space in front of the portal, named frontage. One of the main functions of the frontage is to emphasize the entrance space and the differentiation between it and the passageway.

Portal (*Dargah*):

Portal is an open and semi-covered space-like porch that is usually located in front of the entrance door and distinguished the access path from the passageway.

Doorway (*Rah-ro*):

Doorway is a small space where the entrance door is located. In the architectural definition, it is a space with two columns or walls on each side of the door frame.

Vestibule (*Hashti*):

Vestibule, which exists in most of the historical entrance spaces, is a space right after the doorway, used for dividing the path into two or more directions.

Corridor (*Dalan*):

Corridor is the simplest part of entrance space, the most important role of which is making a connection and access between two locations.

Porch (*Iwan*):

A porch is also considered as part of the entryway, which has a communicational function. The function of this space was developed, based on its connection between the vestibule and the courtyard, by the corridors which were located beside the porch, which was, in this case, the main space.

Arcade (*Dalan*):

Arcade is a part of the pathway which was covered to create a desired shadow for those who wanted to move or stop. Arcade is usually built in front of entrances that did not have a large frontage.

2.2.3 Entrance Components

Door (*Dar*):

One of the important components of the entrance space is the door, the main function of which is controlling the connection between interior and exterior.

Knocker (*Koobeh*):

The function of a knocker on the door was informing. There are two iron knockers on each door, each of which is fixed on one part of the door.

Threshold (*Astaneh*):

The threshold is to distinguish between two spaces and make people to enter with respect and modesty.

Platform (*Sa-kooh*):

Usually designed as couples on each side of the portal, platforms are used for sitting, waiting and refreshment, and also as a place to rest and talk, especially in residential buildings.

Overdoor (*Sardar*):

Overdoor is the most significant element of entrance aesthetically, as a part of entrance space surface, above the door. This surface is decorated in some entrance spaces, with the architect's name written in the inscription.

Opening (*Rozan*):

Opening was another architectural element, which is usually considered above the entrance door, as a solution, and to provide enough light for the vestibule, during the day.

Stone trough (*Sang-Ab*):

There is a big stone trough in some public buildings vestibule, used for drinking, some of which have such beautiful stonework that makes them considered as valuable artwork.

Pond (*Hozz*):

A small pond is another element located in a few vestibules of buildings, along with some platforms to make a suitable sitting area for waiting.

Chapter 3

State of the art

State of the art

This chapter will present a conceptual framework of the research, along with the synthesis of what has been published on the topic of residential entrances characteristics in Iranian architecture, by accredited scholars and researchers to gain a better understanding of the discussed problem.

The conceptual framework of the research will identify the theories that provide the foundation for the research study, and an explanation of how the problem under investigation relates to the theory. The literature review will present a synthesis of reliable sources to explain the routes of the considered problem. A summary, which takes place at the end, will restate the whole chapter, along with citations. The gaps of literature become clear in this section, to provide the foundation for the study, in transition to the next chapter.

3.1 Conceptual Framework

The research process of this study is based on the considered investigation framework, which includes a procedure of discovering the characteristics of residential entrances in the recent periods, analyse the patterns, extract, and finally redefine the transformative potentials, according to the contemporary culture and the current situation. Through this process, the neglected features of the historical architecture will go through analysis, and those considered as the transformative ones will be selected to enter the next stage, which is the redefinition phase. The whole process gets to the point, where the features are translated from old-style language into a contemporary one, and this is the result, considered to give an answer to the problem.

The schematic version of the above process is (Diagram 3-1).

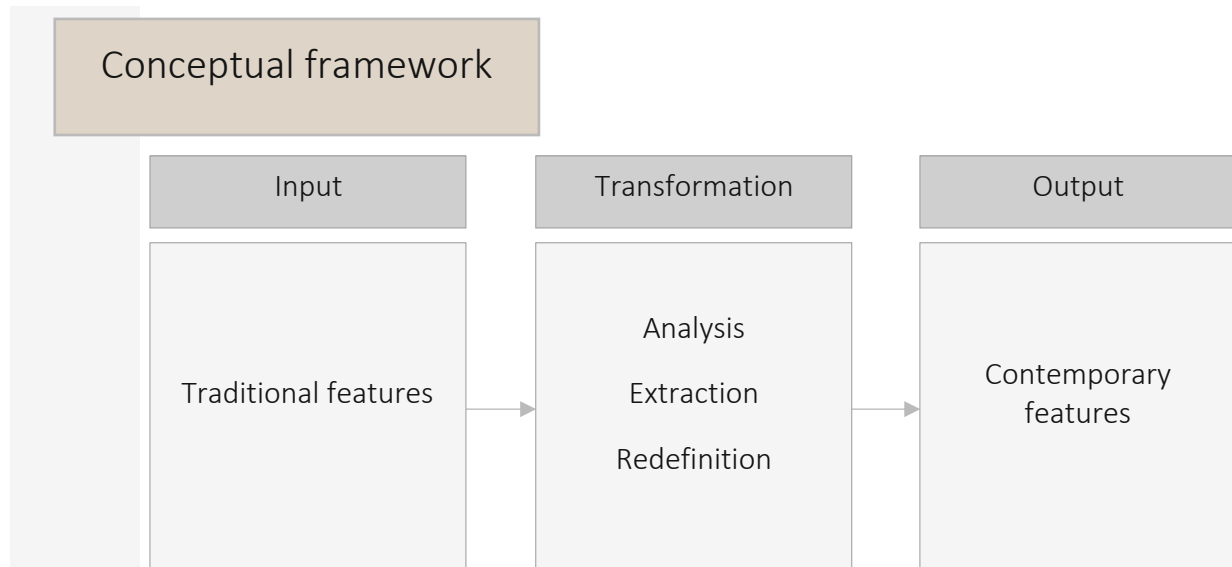


Diagram 3-1 Conceptual framework

3.2 Literature Review

3.2.1 State Divisions

3.2.1.1 Iran

Iran is a country in Southwest Asia and in the Middle East region with an area of about 1,7 m. square kilometres and a population of about 80 m. based on the 2016 census report. Iran is bordered by Azerbaijan, Armenia, and Turkmenistan to the North, Afghanistan, and Pakistan to the east, Turkey, and Iraq to the west. It also faces the Caspian Sea in the North and the Persian Gulf and the Sea of Oman in the. The capital, the largest city and cultural, economic, political, and administrative centre of Iran, is Tehran. Iran is a culturally diverse country made up of many linguistic and ethnic groups that have an officially Shiite majority. The official language in Iran today is Persian, which was spoken at the time of Sasanian Empire (224-651 CE). Iran means the land of the Aryans and its civilization goes back to 7000 years old. The Aryan people are divided into three major groups, the Medes, the Persians, and the Parthians, all of whom ruled the country at their time, the most famous of which is the Achaemenid dynasty.

According to the latest divisions of the country in 2016, Iran consists of 31 provinces and 430 cities.

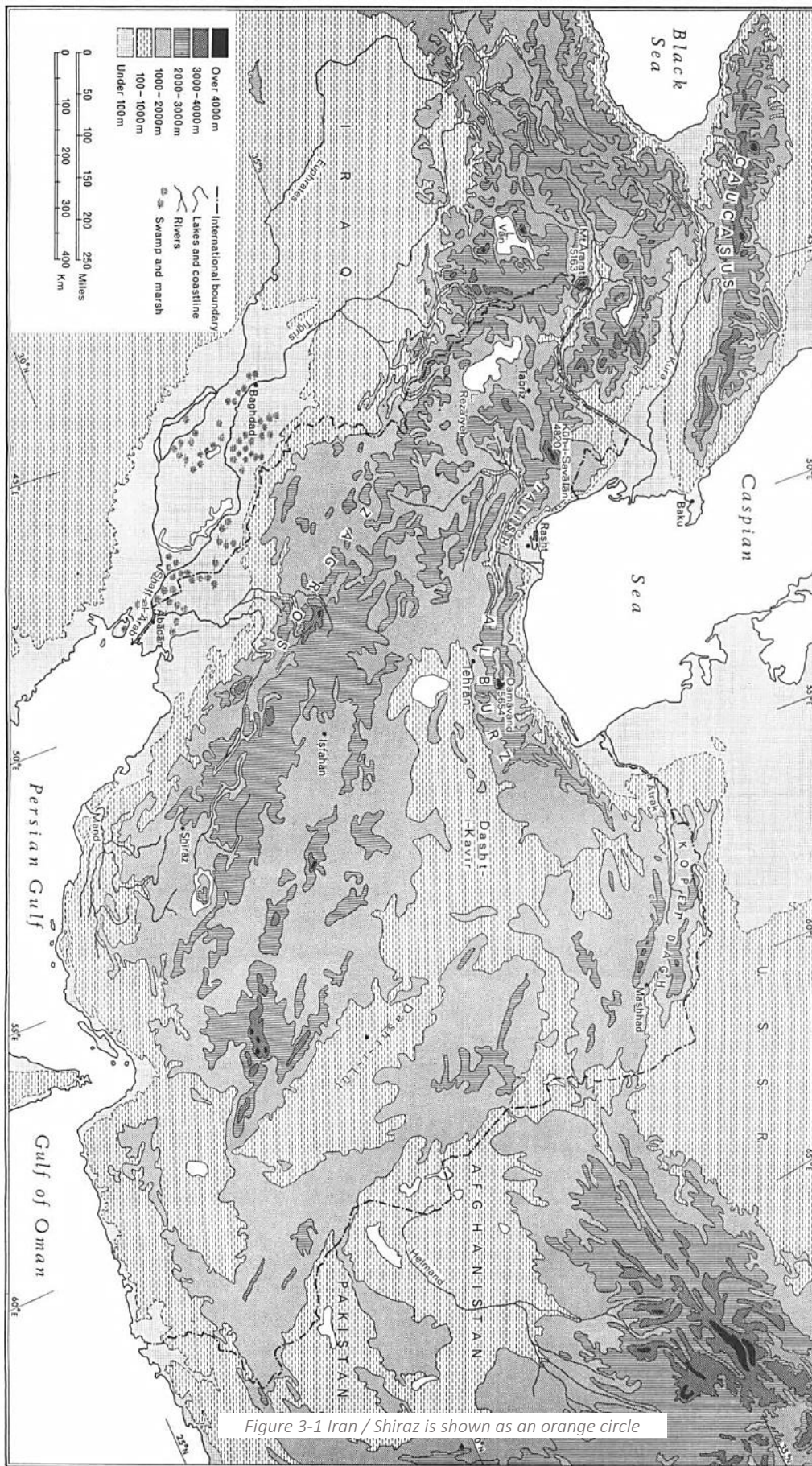


Figure 3-1 Iran / Shiraz is shown as an orange circle

Art and Culture

To understand Iranian culture and its diversity, one must also look at the independent countries surrounding Iran. Afghanistan, Tajikistan, Uzbekistan, Pakistan, Turkmenistan, the Republic of Azerbaijan and even Armenia and Georgia, as well as the Kurds in Iraq and Turkey.

Historically, these have been regions that have long been ruled by dynasties of different Iranian empires, which through extensive contact with them incorporated significant aspects of Persian culture, or where enough Iranian peoples settled to continue to maintain communities patronizing their respective cultures.

But because of the serious influence of Islamic religion on Iranian culture, art and of course architecture, in this chapter (literature review) we bring some comparative studies of Iranian with Arab architects, mainly on courtyard houses, to see the interaction of culture and religion of different Arab countries and Iran.

A Comparative study of Iranian-Arab Architecture

As a starting point it is useful to note the similarities in architectural terminology throughout the Middle East. Persian words such as *iwan* (a semi-open space or veranda), *talar* (large veranda), *sardab* (full basement) and *badghir* (wind-catcher) have been adopted by the Arabic language. On the other hand, Arabic terms such as *shenashil* (latticed and supported balconies), *tarme* (veranda), *majlis* and *mozif* (men's reception rooms) have become absorbed into Persian usage, mostly in the south and south-west of Iran, where there is a strong relationship with the neighbouring Arab countries over the centuries (Memarian and Brown 2006).

The study can be conducted from many different angles such as religious, social, cultural, climatic, technological, economic, etc. All offer useful insight and the traditional courtyard houses are the product of many of these diverse influences. Dealing with this information effectively is beyond the scope of this work. To make the study within the framework of this thesis manageable, we briefly consider the cultural-religious and the architectural-climatic patterns.

Cultural-religious patterns

The Islamic religion has a tremendous influence on the architecture of all Muslim countries. A major aspect is that a general structuring of private life in the Islamic countries is similar regardless of climatic or geographical differences. This is rooted in a shared Islamic culture, which demands that sexual and emotional activities should be focused on the family core to consolidate family life and relieve social stress (Mottahari 1973, 68-83). This is to be achieved in two ways: First, a man must not look at any woman to enjoy her beauty. Second, a woman must cover her body (except her face and hands) to avoid men's attention. Additionally, Islam prescribes the roles of men and women in a way that directly affects architectural design.

For example, Qur'anic verses underscore the importance of family privacy by emphasizing the importance of knocking on the door before entering a home: "O you who believe! Do not enter houses other than your houses, until you have asked permission and saluted their inmates; this is better, for you may be mindful" (Qur'ān, 24:27). But if you do not find anyone therein, then do not enter until permission is given to you; and if it is said to you: "Go back, then go back; this is purer for you; and Allah is Cognizant of what you do" (Qur'ān, 24:28). Therefore, various spatial and social mechanisms have been employed to secure the privacy of the family, especially the female members of the household, whilst providing convivial surroundings for all. These measures include the division of the living quarters into distinct areas (Memarian and Brown 2006). This insistence on privacy is intended to give the family of the house their protection against external visual intrusion (S.Bahammam 2006). Variations will be based on the size of the house, local traditions, and the number of courtyards it contains.

In many parts of the Islamic Arab world one can be found many prominent striking examples of traditional architecture, mainly houses. Although there were sociocultural differences in each region, the design of the houses maintained a common architectural language that responded to the common religious needs (El-Shorbag 2014).

Architectural-climatic patterns

The climate has had a major impact on Iranian and Arabic architecture for at least 8000 years. However, this is not intended to mean a uniform response to the climatic conditions in these countries. An architectural-climatic pattern denotes the common architectural features that have evolved at a given location in response to prevailing conditions. In Iran and different Arab countries, climatic variations have led to different architectural responses, sometimes changing the role of the courtyard and its design features. Roughly classified, Iran, Iraq, Kuwait, and Saudi Arabia are all in the hot arid zone, where relative humidity is low, winters are cold or mild, and summer daytime temperatures can reach 50°C or even more in places. The diurnal temperature range is also very high. In these extreme conditions, various methods have been used to maintain comfort. These include:

- use of building materials with high thermal insulation,
- the construction of basements (acts as a heat moderator in hot and dry seasons) (Erarslan 2020),
- the provision of verandas and other semi-open spaces,
- the use of windcatchers (Badghir). They may differ in different Arab countries, but they have almost the same design principles (Bagader 2017),
- subtle changes in the sectional profile of the courtyard,
- seasonal movements that occurred between rooms on different sides of the yard. (Stay in winter mostly in rooms with few openings) (Memarian and Brown 2006).

We have attempted to categorize the architectural-climatic patterns of Iran and some other Islamic Arab countries. But in addition to climate, other factors such as geography, topography, physical materials, and other regional features characterize traditional homes. In addition, traditional houses of different countries also bear the traces of social, cultural, and economic aspects of their historical background.

The regional characteristics of an area therefore not only represent its physical and geographical characteristics, but also bear witness to its history. Traditional houses are not only physical manifestations, but also cultural artefacts. The traditional and popular residential

architecture bears the most important cultural codes of the individual countries (Erarslan 2020). The way these cultural codes are rendered in different countries represents their differences.

Considering the complexity of comparing Iranian architecture with other Islamic Arab countries, we try to convey some specific architectural futures of Arab countries as traditional Iranian houses are explained (Section 3.2.4.1).

3.2.1.2 Shiraz

The earliest reference to the city, as Tiraziš, is on Elam clay tablets dated to 2000 BC (Cameron 1948, 115). The contemporary city was founded or restored by Muhammad ibn Yusuf Saqqafi in the service of the Umayyad dynasty around 693 (Taqi 1989). There is no accurate information about the size and shape of the city at the time of its restoration or even nearly two centuries later (Arberry 1974, 17). What is clear during this period is that Shiraz was the capital of Fars province and the seat of the governors, who were appointed by the caliphs to administer this province (Afsar 1995, 27). Shiraz grew prominent under the successive Iranian Saffarid and Buyid¹⁰ Iranian dynasties in the 9th and 10th–11th centuries, respectively. During the Saljuq period (12th–13th century), according to Ibn Balkhi, Shiraz is much larger than Isfahan (al-Balkhi 1996, 317). This report has been also approved again in Shiraznameh as is stated "The expanse of Shiraz was larger than Isfahan both in length and width (Figure 3-2). Based on the location of gates in the formation of Shiraz, the primary form of the city seems to be circular. Irregular shapes that are seen in the shape of the circular city from the beginning are related to developments and progress of the city in different eras.

Considering the fundamental elements of urban life, such as economic framework (bazaar), cultural framework (Atiq Mosque)¹¹, political framework (Arg), and social

¹⁰ Buyids (Persian: آل بویه Āl-e Būya; also known as Buwaihids, Bowayhids, Buyahids, or Buyyids), was a Shia Iranian dynasty[6] of Daylamite origin,[a]

¹¹ Atiq Jameh mosque (Atiq Mosque) the oldest mosque of Shiraz was built in celebration of the conquest of Shiraz by Saffarid Amroleiss in the year 276 AH and was completed in 281 AH.

framework (districts) development of the city in time, the city has been evolved along the axes north-south and is considered to be unity oriented (Yousofifar 2007).

In recent years, the expansion of the city in the north-south direction has been restricted by two mountain ranges. This has imposed expansion of the city in the east-west direction.

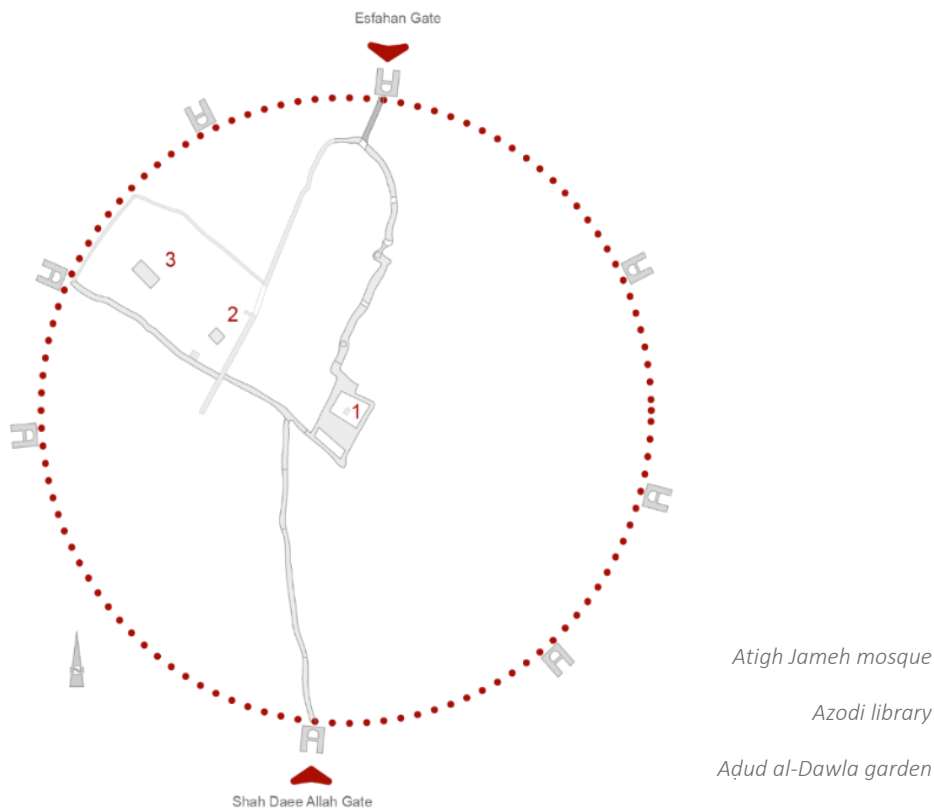


Figure 3-2 The main framework of Shiraz in Buyid dynasty (Nasr 2005)

Shiraz in Historical Periods

Safavid Period (1501–1736)

Despite the political changes that took place in Shiraz for more than a century, and although from time to time it was transferred from one ruler to another, according to the description of Italian tourists from Shiraz at the beginning of the Safavid rule, Shiraz still has preserved its ancient architectural and artistic heritage. The plan of the city was the same as the old plan, with a strong fence and a deep moat and nine gates that are still called by the same names.

Famous districts of the city whose names have been reported in the history of the Timurid era, were Moordestan, Darb-e Masjed, Masjed-e No, Darvazeh Kazerun, Bagh-e No, Dashtak, Darak, Sarajan, Darb-e Estakhr, Bagh-e Qatlagh (Afsar 1995, 49). During the Safavid period, the backbone of Shiraz, while having its former central position, expanded and moved to the north, and due to the surrounding old urban spaces by neighbourhoods, new districts were formed in perpendicular to the main axis of movement (Nasr 2005, 18). Shiraz axis in Alebouyeh, Zand, and Safavid period are shown in Figure 3-3.

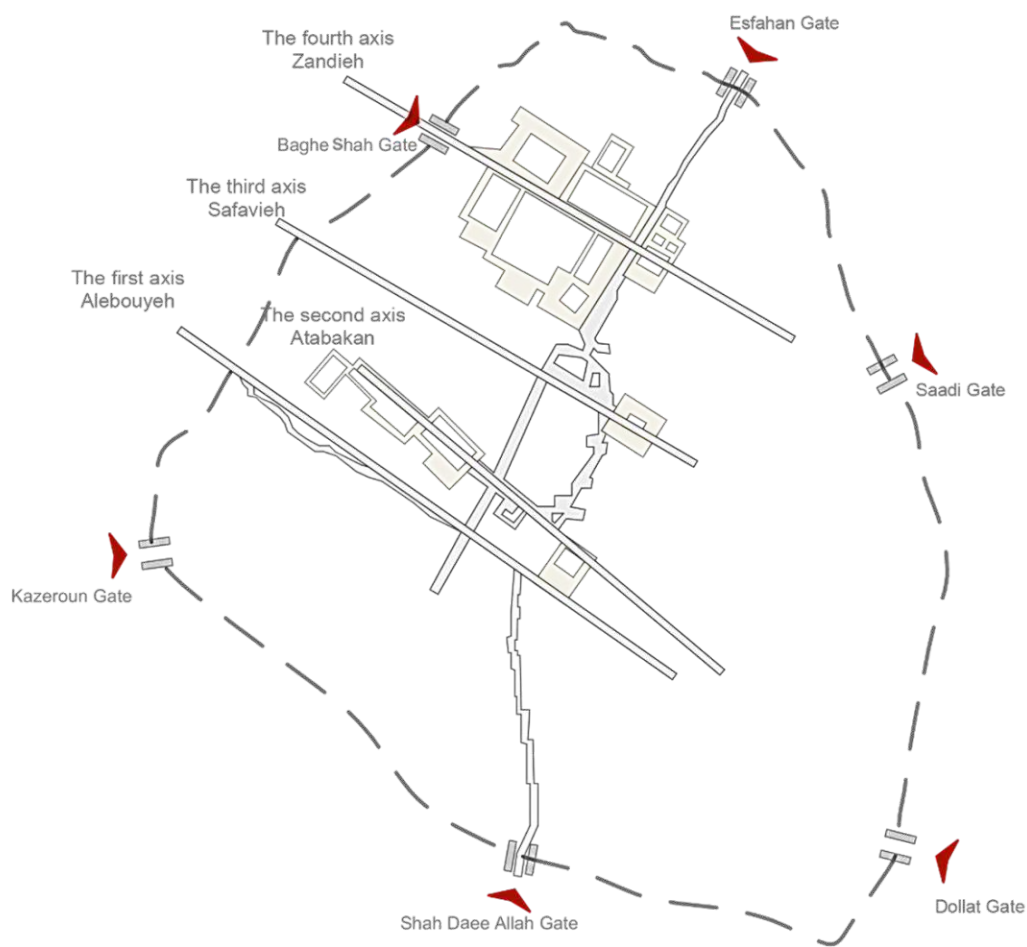


Figure 3-3 Shiraz in Safavid period, (Nasr 2005)

The appearance of Shiraz during more than two centuries of Safavid period can be imagined as follows. Shiraz was a prosperous city with a large population and the second city in Iran after Isfahan. A fence surrounds the city like in prehistoric times, and a deep moat separates it from the surrounding countryside and gardens. Joan Chardin¹², who saw Shiraz at the end of the Safavid era, found its fence destroyed and considered the number of its gates to be four. But knowing that in the era of Karim Khan-e Zand, the city gates were about twelve ones, there must have been other gates in the Safavid era as well, additionally to the four main gates mentioned by Chardin (Isfahan Gate or Iron Gate, Kazerun Gate, Gousfand Gate, and Fasa Gate) Iran means the land of the Aryans and its civilization goes back to 7000 BC. The gates and streets are shown in Figure 3-4.



Figure 3-4 The name of gates during the times. (Nasr 2005)

¹² Alternative names: Joan Chardin, Jean-Baptiste Chardin, Sir John Chardin.

The Aryan people are divided into three major groups, the Medes, the Persians, and the Parthians, all of whom ruled the country at their time, the most famous of which is the Achaemenid dynasty. According to the latest divisions of the country in 2016, Iran consists of 31 provinces and 430 cities. Most probably, other gates were not considered by Chardin as important as the above four gates that he has mentioned. It is interesting to note that the four gates of the city named Estakhr Gate, Moordestan, Saadat, and Darb-e Salam, were renamed at this time period. Moordestan Gate or Drak Musa (Hamdollah Mostofi) Gate was renamed to Bagh Shah, due to the construction of the Safavid royal garden called Baghe Shah, and Fahndar Gate, which was known as Gozargah, was renamed to Saadi Gate. Darb-e-Salam gate was renamed to Shah Daei Gate too (Afsar 1995, 49) .

According to the description of two French tourists from Shiraz and the picture of the city that is available from Chardin, there were three streets outside the city, two of which led to the city gates. The first one of them was a street that started almost from Allah Akbar street, the entrance of the road from Shiraz to Isfahan in the northeast of the city and led to Isfahan Gate. The second one continues from the beginning of Baghe Shah Gate to the entrance of Baghe Shah street along the current Zand street and on both sides of the street, there are gardens and strong walls. The third street, as seen in Chardin's picture, is a street parallel to the first street on the east side outside the city. It leads to a tomb and Lush gardens there can be seen on its sides (Afsar 1995, 24-36). Figure 3-5 shows a view of Shiraz in the Safavid period.



Figure 3-5 View of the city in Safavid period (J. Chardin 1993).

The characteristics of the Shiraz urban structure during the Safavid period

Texture

- Shiraz was the second most populated city of Iran during Safavid period.
- The old structure of the city had been preserved.
- The city was protected by deep moats and firm fencing.
- Names of old neighborhoods and gates are preserved according to the previous period.

Neighborhood

- Moordestan, Darb Masjed-No, Darb Kazeroun, Baghe-No, Dashtak, Darak, Sara- jan, Darb Stakhr, Qatlaq

Gates

- Isfahan or Iron, Kazeroon, Goosfand, Nesa, Baghe Shah, Fahandej, Sa'adi, Shah-Daee, Qoran

Diagram 3-2 The characteristics of Shiraz urban structure during the Safavid period

Zand period (1751–1794)

In this period, the location of urban elements has been connected to the main characteristics of the former layout of the city. Government elements were built on the axis of the Safavid Garden in the west of the city bazaar, which was strengthened by the construction of the Vakil Bazaar, and the Vakil Mosque, which was built in place of the Safavid Mosque and found the role of linking government and religious spaces. During this period, urban elements were intensively distributed and filled around the Karim Khani complex. If in the previous period, no attention was paid to this urban texture (Karim Khani complex on Shahr-dari Street) and this texture suffered a lot of damage.

Although the backbone of the city is located on the central axis, the way of joining new elements and collections has strengthened its position in the northwest of the city. Open urban spaces are formed in the north and northwest of the main skeleton of the city, and residential units in the east, south, and (Nasr 2005, 21), (Figure 3-6).

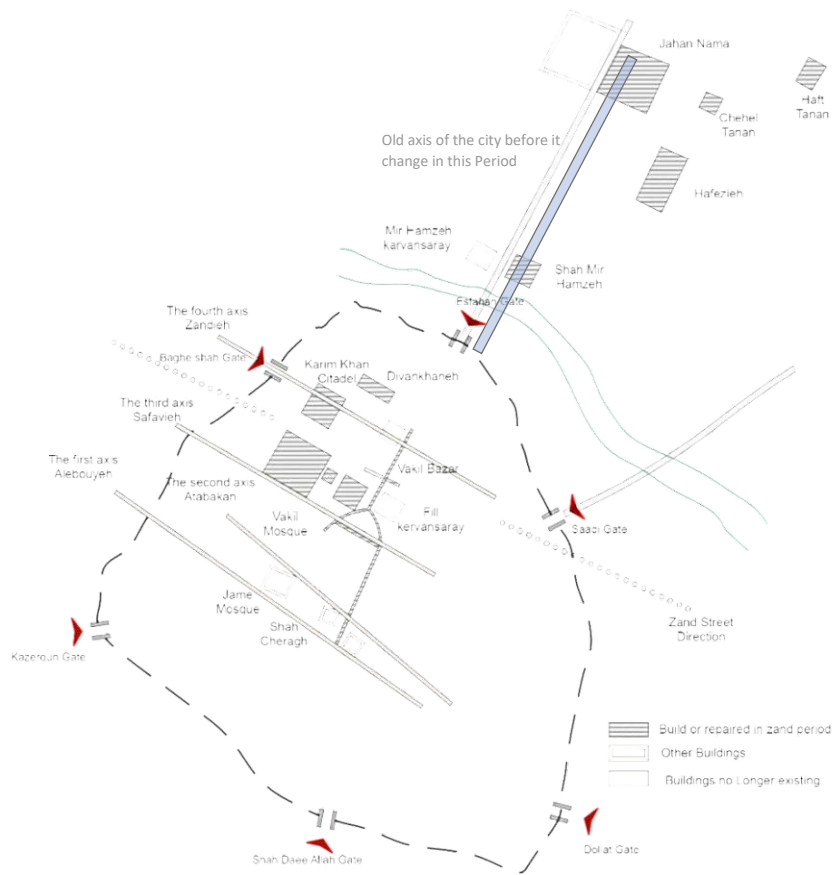


Figure 3-6 Shiraz in Zand period

(Nasr, 2009)

No	1	2	3
Period	11 th century	15 th century	Zandieh
Number of Gates	8	9	6
Gates' names and their location	Salm (Shah-Daee)	Salm/(Shah-Daee)/South	(Shah-Daee)/South
	Kavar (Qasabkhaneh)	Fasa/(Kavar)/South-east	Qasabkhane/South-east
	Manzar (Sa'adi)	Beiza/(Baq-Shah)/West	Baq-Shah/West
	Fahandej (Sa'adi)	No East	Sa'adi
	Estakhr (Isfahan)	Estakhr/(Isfahan)	Isfahan/North
	Shooshtar (Kazeroon)	Kazeroon/South-east	Kazeroon/South-east
	Band-Astane (unknown)	Dolat/East	----
	Qasan (unknown)	Saadat/(unknown)	----
	----	Derak Mosa/West	----
Description	----	Fasa Gate's name changed to Kavar Gate	Karim Khan reduced the number of Shiraz gates during this period

Table 3-1 Gates' names and locations

According to the data collected, the physical transformation of Shiraz in Qajar period has been negligible and urban lands uses have remained focused on the city's life and market. It is to be mentioned that the Zand axis was transformed to *charbagh*, and the gardens belonging to the city's elders were formed along it (Nasr 2005, 22). (Figure 3-7) shows a view of the old axis before it changes in Zand period.



Figure 3-7 A View of old axis before it change in Zand period

(Karimi, 1945)

The characteristics of Shiraz urban structure during the Zand period

Urban Texture

- Vakil Mosque was built as a link between government and religious spaces.
- Elements of the city were located around the government complex.
- The location of urban elements has been mostly in the northwest of the city.
- Residential buildings are located in the south, southwest and east.

Neighborhoods

Muslims

- Ishagh Beig, Morq Bazaar, Bala Kafd, Darb Shahzadeh, Shah Square, Sar baq, Sar Dozak, Sang Siah, Labe Ab, Darb Masjed No.

None-Muslim

- Jewish neighborhood

Gates

- Isfahan, Baq-Shah, Kazeroon, Shah-Daee,

Diagram 3-3 The characteristics of Shiraz urban structure during the Zand period

Qajar Period (1796- 1925)

The names of Shiraz districts did not change during the Qajar period and eleven neighbourhoods of the city had the same names as during the Zand period, which was Darb-e Shahzadeh, Meydan-e Shah, Bazaar-e Morgh, Lab-e Ab, Darb-e Masjed, Sar-e Bagh, Sang-e Siah, Sar-e Dozak, Bala Kaft neighbourhood, Ishaq Beyg and Kalimiha neighbourhood (Afsar 1995, 37-58).

Out of the eleven neighbourhoods of Shiraz, except for the Kalimiha, which was outside the Muslim community of Shiraz, five neighbourhoods were considered Heydari Khaneh and the other five were considered Nemat-i Khaneh, just like the Safavid era and the same as other cities of Iran. To rise conflict between neighbourhoods, the Safavid kings had demanded to divide all the cities, even the villages into eastern and western parts. The eastern side of the city was assigned to follow Sultan Haidar and the western side to the followers of Shah Nematullah Vali.

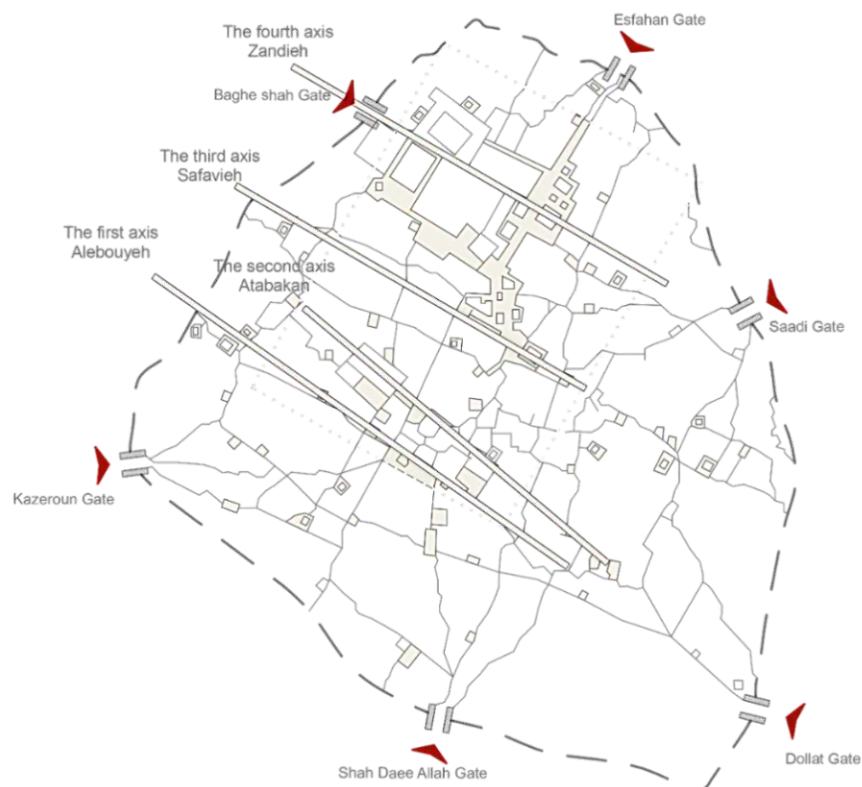


Figure 3-8 Shiraz in Qajar period

(Nasr, 2009)

These two groups competed with each other. The five neighbourhoods of Heydari Khaneh were Ishaq Beyg, Bazaar-e Morgh, Bala Kaft, Darb-e Shahzadeh, and Meydan-e Shah and the other five ones which belonged to Nemati Khaneh included Darb-e Masjed, Sar-e Bagh, Sar-e Dozak, Sang-e Siah, and Lab-e Ab. This custom has been continued from the Safavid period to the middle of the Qajar period (Afsar 1995, 37-58), (Figure 3-8).

The layout of Shiraz in the Qajar Period

As it was stated in the historical description, the layout of the city during the Qajar similar to the time of zandieh period, with the changes and developments that natural disasters such as successive earthquakes brought about, or new buildings that were created in the place of old buildings (Afsar 1995, 274).

Shiraz government buildings in the Qajar period

The government buildings, same as the palaces and buildings, were located between the Darb-e Shahzadeh and Meydan-e Shah neighbourhoods, and the main part of this building was located around the big square of the city (Toopkhaneh Square). On the north side, there was the Nagharkhaneh, Ab Anbar, Divankhaneh, and the Qourkhaneh (latter Shoaieh school) mansions. The west side of the square was occupied by the huge and high Arg. To the South and in *qibla* direction, there was the government garden, alongside the bath and the mosque with a slight retreat. The entire east side of the square was limited to Vakil Bazaar. There were three openings from the Vakil Bazaar to the square, one from the middle of the northern row into the square, another from the Kolehdozha bazaar, and the last one from the Shamshirgarha bazaar into the frontage of Vakil Mosque (Afsar 1995, 277). Figure 3-9 and Figure 3-10 show the entrance of the Shiraz in Qajar period.

There was an old cemetery of the Great Ibn-Khafif¹³ between the wall of Vakil Mosque and the square in the northwest corner, until the end of the Qajar period. The Divankhaneh building, built during the reign of Nasser al-Din Shah, was turned into a telegraph office. The small seraglio of Karim Khan and the houses of the elders, occupied by the Qajar princes and government officials, were located on the *qibla* side of the government garden. There was

¹³ Abu 'Abd Allah Muhammad ibn al-Khafif (882-982)

another square between the garden, Arg and Baghe Shah Gate, which was called Tavileh (Mashgh) Square (Afsar 1995).



Figure 3-9 Shiraz in the Qajar Period

(Arch Iran Med. 2021)



Figure 3-10 Shiraz in the Qajar Period

(Sane 2001)

With the new street construction, the main focus of activities, whether governmental or commercial, was located in the east-west linear range, which most of its focus is still on the old core of the city and the Karim Khani complex. During this period, the structure of the city's backbone did not follow the past and was formed as a scattered network. Now the city had two strong axes (Karim Khan Zand and Lotfali Khan Zand streets), which were perpendicular to the initial axis of the bazaar. Therefore, unlike the old texture, which has an organic pattern, the middle texture has a checkered pattern, the main passages of which have penetrated the old texture and faced it with a new division.

The characteristics of Shiraz urban structure during the Qajar period

Urban Texture

- The style of Heidari's house and the Nemati's house among neighborhoods continued until the middle of the Qajar period.
- The main texture of the city is the same as the Zandieh period.
- Government buildings are located around the artillery square of the city.
- Zandieh's axis turned into four gardens.
- The gardens of the city's elders were formed along the main axis of the city.
- The main structure of the city has been changed due to the creation of new crossing points.
- The focus of government and business activities is within the eastern and western axis.

Neighborhoods

Muslims

- Ishagh Beig ,Morq Bazzar ,Bala Kafd ,Darb Shahzadeh ,Shah Square, Sar baq ,Sar Dozak , Sang Siah ,Labe Ab ,Darb Masjed no.

None-Muslim

- Jewish neighborhood

Gates

- Isfahan, Baq-Shah, Kazeroon, Shah-Daee, Qasabkhoone, Sa'adi,

Diagram 3-4 The characteristics of Shiraz urban structure during the Qajar period

Pahlavi Period (1925 - 1979)

It should be noted that during the Qajar period, there was no street as it is today. Public Passages and roads all over the city consisted of long winding alleys and narrow covered bazaars. Simultaneously with the late Qajar and early Pahlavi rule, for various reasons such as urban population accumulation, lack of housing units, migration of villagers to Shiraz, individual independence, etc, confinement within the initial urban boundary was ignored and the construction of residential units started to follow the developments in European urban planning and architecture. The remaining monuments on the border of Qaani, Saadi, Ferdowsi, Dariush, and its sub-streets represent the style of the late Qajar and early Pahlavi periods (Nasr 2005, 37).

Since the Pahlavi period, when new streets were built in and around the city, many houses and buildings were built around the city and the area of Shiraz increased more than three times in about 30 years. During the second Pahlavi period, the urban texture spread to the northwest and along the path of Ghasr-e Dasht gardens, Khoshk River, and Nahr Azam river. This development continued in the following years and led to the destruction of traditional Shiraz gardens in Ghasr-e Dasht and the villages of Posht Moleh, Mansour Abad, Hossein Abad, etc. (Nasr 2005, 63). "Manouchehri Street", (Figure 3-11) was one of the residential zones in Shiraz in the Pahlavi period.



Figure 3-11 Manouchehri Street in Pahlavi period

(Afsar, 1995)



Figure 3-12 Shiraz in Pahlavi period

(Nasr, 2009)

The names of Shiraz neighbourhoods did not change during the Pahlavi period and remained the same as the Zand and Qajar periods, which were Darbe Shazdeh¹⁴, Meydane Shah, Bazaar-e Morgh, Lab-e Ab, Darb-e Masjed, Sar-e bagh, Sang-e Siah, Sar-e Dozak, Bala Kaft, Ishaq Beyg, and Kalimiha neighbourhood (Figure 3-12).

¹⁴ Or “Darbe Shazdeh”, before Zand era, this district was divided into two parts: Shayadan and Moordestan.

The characteristics of Shiraz urban structure during the Pahlavi period

Urban Texture

- Residential houses were built according to European patterns.
- Urban texture expanded outside the urban area.
- New streets were built around and inside the city.
- The city of Shiraz expanded to the Northwest.

Neighborhoods

Muslims

- Ishagh Beig ,Morq Bazaar ,Bala Kafd ,Darb Shahzadeh ,Shah Square, Sar baq ,Sar Dozak , Sang Siah ,Labe Ab ,Darb Masjed no.

None-Muslim

- Jewish neighborhood

Gates

- Isfahan, Baq-Shah, Kazeroon, Shah-Daee, Qasabkhoone, Sa'adi,

Diagram 3-5 The characteristics of Shiraz urban structure during the Pahlavi period

Shiraz alteration process and its impacts on the city

In the last 1300 years and until the end of the Qajar period, the skeleton of Shiraz has changed many times in terms of shape, location, and content, and consequently, the city centre has not been immune from these changes, the stages of which can be seen in (Diagram 3-6). What existed at the end of the Qajar period was the essence of the changes of this long period with the significant impact of the interventions of the Zand government on the framework of the city.

At the beginning of the last century¹⁵, which was the beginning of the arrival of technology and the start of changes in the country, Shiraz was also affected. In this part of the study, these effects on the centre of Shiraz are evaluated in terms of period, shape, and type of change (Nikkar 2005).

The duration of the development of Shiraz has been shown in (Diagram 3-6).

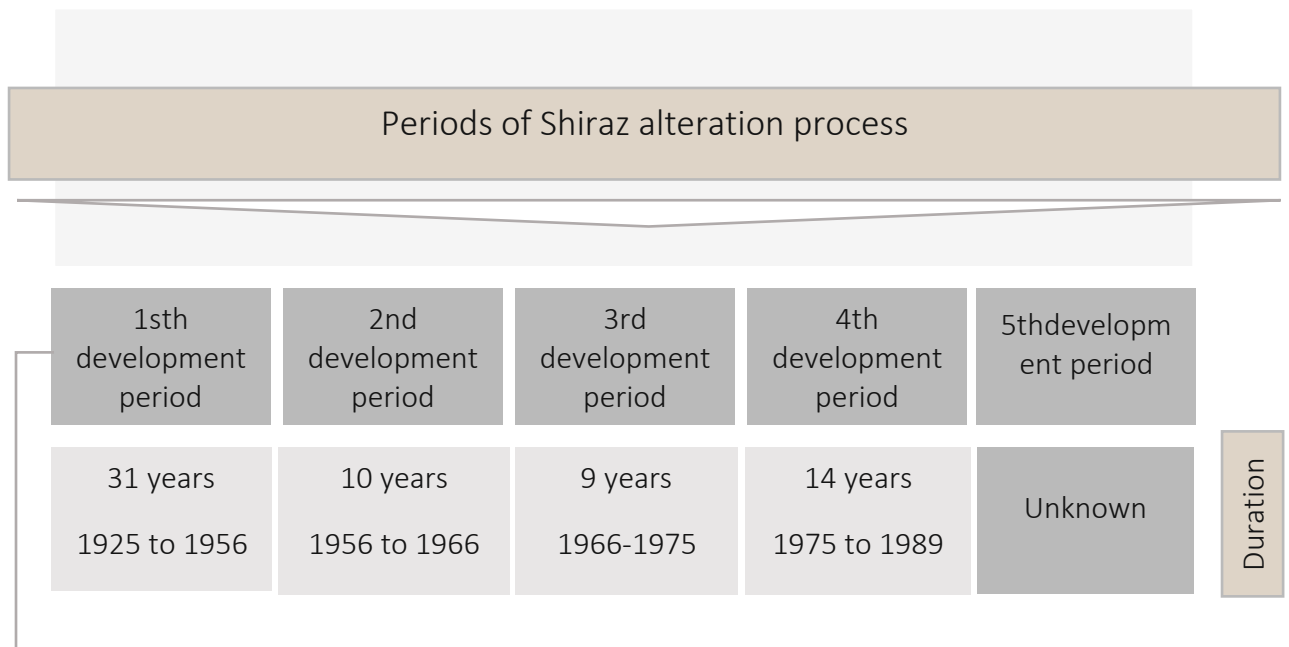


Diagram 3-6 Development Duration of Shiraz

¹⁵ 1980 CE – present

One and a half-century before these changes, Shiraz was the governmental centre. The remaining capacities of the central government and the geographical location of the city, which, in addition to providing traditional access to the ports in the south of the country with the framework of Iran, attracted the attention of the coup government.

The establishment of the Pahlavi government with the coup of 1921 by Reza Shah, was a new era for Iran. On December 12, 1925, parliament decided to elevate Reza Chans to the rank of Shah. He was subsequently called Reza Shah Pahlavi.

He managed to forge political order in a country that for years had known nothing but turmoil. During the reign of Reza Shah educational and judicial reforms were carried out that laid the basis of a new state. The custom of women wearing veils was banned (decree known as Kashf-e hijab) and the minimum age for marriage was raised (F. Milani 1992, 19, 34-37). The number and availability of secular schools increased for both boys and girls, the University of Tehran was established in 1934 and a south-north railway was built which was finished in 1938. Many governmental buildings were constructed based on European foreign designers and architectures.



Figure 3-13 Zand Crossroad sin Pahlavi period

(Afsar, 1995)

The result of this viewpoint was the establishment of military organizations in Shiraz, the most important of which was the establishment of the provincial government, courthouse, and banking centre. It was not possible to provide all the necessary spaces for these functions in the old part of the city. Some of these buildings were built on the open spaces of buildings belonging to the previous government, some of them were formed by changing the use of former government buildings, and others were built outside the old city. These new functions, along with cars as new transportation vehicles, required different passages from previous narrow organic ones. Therefore, at the same time with the establishment of these functions, new passages were built, some of which were formed by splitting the framework of the old city (Nikkar 2005, 143).

At the same time, the government was going to alter urban structure by targeting the traditional city, which seemed to be an undesirable and incompatible place. As a first measure, two streets named Karim Khan and Lotfali Khan Zand were built, the first of which slipped in the traditional bazaar in the 1930s (Bazrgar 2003, 78). However, the imposed modern structure and the widening of the inner-city streets have also led to entire ensembles of historic buildings being demolished and the urban morphology irreversibly changed (Hanachi and Fadaei Nezhad 2010).

The urban changes during the 1960s and 1970s were inspired by the master plans borrowed from the western world. The first master plan by Shiraz (1966-1972) tried to carry out a balance between new developments and old areas in the urban spatial structure, but never achieved the goal and conflicts arose between them as well (Andalib and Abdolazadefard 2013).

In addition to these changes, the money gained by the oil and petroleum industries during the reign of Mohammad Reza Shah Pahlavi (1941 to 1979), paved the way for the migration of the suburban population to the cities and the expansion of urbanization (S. Mortazavi 2004, 192).



Figure 3-14 Shiraz in Pahlavi period

(Afsar, 1995)

There have been several general divisions about the development periods of Shiraz, here the comprehensive division made by Majid Nikkar is considered (Nikkar 2005).

First Development Period (1925 to 1956)

This period lasted from 1925 to 1956. The size of the city was constant until the end of the Qajar period, but it was doubled within 31 years. At the end of the Qajar period and the first of the Pahlavi Period, the population of the city was about 170 000 people¹⁶. Till the end of the Qajar period, due to keeping on the traditional lifestyle, high mortality, and lack of effective migration, the city did not expand, but during these 31 years, with the arrival of civilization and in particular, cars, the construction of military bases, the development of government jobs and top management and the implementation of the public service system, the city came out of its 180-year recession. The physical changes were a combination of the construction of new passages and the establishment of new functions. The formation of buildings needed by the government and the construction of connection axes changed the basis of the expansion of the city that was followed by the city centre. Construction of the narrow Zand street from Saadi

¹⁶ Iran: Provinces and Cities population statistics

Gate to Baghe Shah Gate and Lotfali Khan Zand Street parallel to it, both perpendicular to the main and old axis of the city (Vakil Bazaar and other old markets), changed the skeleton of the city (Figure 3-6). New parallel axes to Vakil Bazaar, such as Namazi and the old Ahmadi axes, did not affect the expansion of the city, but Tohid (formerly Dariush), Qaani, Saadi, and Roudaki streets, which were within the boundaries of the historical context and parallel to the axis of Vakil Bazaar were effective factors in the development of the city to the west.

Important buildings of this period that were built within the old texture are the courthouse, banks Melli and Sepah, post and telecommunication office, police station, and general tax administration office. The Arg of Karim Khan was converted into a prison. Governorship buildings and army headquarters were built outside the old city¹⁷. Other organizations and departments such as high schools, hotels, hospitals, and transportation centres were formed within the old texture, except for the hospitals and transportation centres.

The pattern of urban development in the first period

The existence of a dry river in the north, lowland in the east, and particular places such as cemeteries, ranching, etc. were barriers to the expansion of the city in these directions. The construction of the governor's office and the army headquarters at a distance of over one kilometre from the west edge of the old city, with flat and habitable lands, transformed the middle texture of the city. This texture, along with passages of suitable width, created a residential attraction in it, and this attraction provided the basis for the establishment of non-residential functions. The city centre in this period was around Karim Khan Zand axis in front of Vakil Bazaar and Setad square.

During this period, the city experienced many structural changes. Following these changes, residential architecture also changed its style with a different approach than in previous periods to reduce privacy, and the design of introverted houses with the central courtyard of earlier periods turned into small, extroverted apartments with windows facing the street. Prior to these changes, the only connection between the introverted houses and the outside was their entrance door, which was usually located in a narrow alley on the outside wall of the

¹⁷ Urban parts that had been formed in previous periods.

house and connected to the interior of the house through a vestibule (Raeesi and Ansaripour 2018).

Mainly, except for the large residential units in the middle texture, most of the functions formed during this period were commercial or units of the private sector. The patterns governing the passages, the separation of residential license plates, and how they coexisted with the previous patterns were quite different from previous times.

Second development period (1956 to 1966)

This period lasted ten years (1956-1966). The area of the city reached 1.8 times the area of 1956 and 3.6 times the area of the original core of the city (historical texture). The population increased by 1.85 times compared to 1956. The imbalance between the growth of the city and the growth of population was because of the construction of new functions and the development of passages. In this period the expansion of the city had a slight vertical approach. The expansion ratio of urban construction was higher than what has been proposed, but due to insufficient information, the actual ratio cannot be provided.

During this period, the Expansion of Shiraz, because of the natural geographical east limitations, due to Maharloo lake, and the route of surface water and urban sewage disposal to the east has been in the west direction. The existence of gardens in the west and naturally better weather has reinforced the tendency of expansion in this direction (Z. Roustafa 2013).

The first phase of suburbanization took place to a limited extent in the southern part of the old axis of Isfahan Gate - Quran Gate. On the north side of this axis, was considered and functions such as technical college and silos were established along the axis. The main axis of development was towards the west. During this period, the city centre moved away from the geometric centre and its western edge took distance from the original core of the city.

The pattern of urban development in the second period

In this period, the pattern of urban development was not much different from the previous period, just the process was accelerated. During this period, the city centre moved to the western edge and so did the people. At the same time, the starting point of the city's development, the Zand crossroad, acted as the strongest leisure centre for different segments of the population (Comprehensive plan 1996).

Third development period (1966 to 1975)

This period lasted 9 years. The area of the city reached 2.2 times the area of 1966 and 4 times the area of 1956, and its population reached 1.57 times the area of 1966 and 2.49 times the area of 1956. Besides the area of the city reached 8 times the area of its old core. During this period, the imbalance between urban development and population growth was more significant. The main reasons for the development of this period are the development of scientific-administrative and military centres, domestically produces cars and subsequently increase in the number of cars in the city, and injection of valuable revenues from rising oil prices to cities. Development toward east and south was still limited and insignificant compared to western and northern directions. The west side of the city continued to develop during this period, but at a slower pace than before.

The pattern of urban development in the third period

The general pattern of city centre development in this period was in the continuation of the previous period and with condensation of public functions in the older axes and the gradual growth of these functions in the new axes, the city centre was slowly moving toward the west.

Fourth development period (1975 to 1989)

In this period, due to the location of administrative centres and urban infrastructure around the central core of the city, the city has expanded in all directions around these areas.

This period includes a period of 14 years from 1975 to 1989. In 1989, the area of the city reached 3.7 times the area of 1975 and 15 times the area of 1956, and its population doubled, compared to 1975 and 4.9 times the population of 1956. In this year, the area of the city reached 30 times the area of its old core. During this period, the city was developed in all directions, expanded to the east, south, and west, but was not allowed to expand to the north, because of the heights.

The pattern of urban development in the fourth period

During this period, the area of the city centre gradually expanded toward the northwest. There was also a new branch in the south of the central area and some of its activities were separated from the city centre.

Fifth development period (starting in 1990)


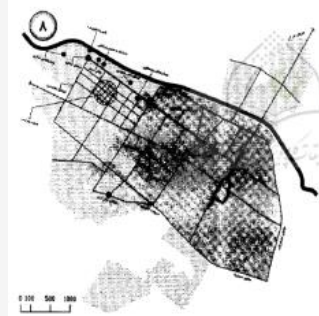
This period started in 1990 and has continued until now. The area of the city has been increased to 1.5 times the boundaries of the last approved plan, while only 80% of the projected population of those approved plans has been achieved. The plans, despite paying enough attention to the appropriate structure of the city and the development of efficient criteria, could not restrain the expansion of the city.

The pattern of urban development in the fifth period

In this period, due to the saturation of the central area in the previous period, the city centre is expanding to the west.

The development process of Shiraz is shown in (Table 3-2)

Table 3-2 Shiraz Development Process and Impacts

Period	Year	Impacts	Image ¹⁸
First	1956-1925	<ul style="list-style-type: none"> - The city's population increased compared to previous years. - The area of the city has been expanding. - Roads and new communication axes were built. - Government buildings and new functions were built. - The structure of the city has changed due to the construction of new communication axes. - The city expanded westward. - The city's downtown in this period is Karim Khan Zand's axis. - Commercial and government buildings grew. - Separation patterns of residential houses, neighbourhoods, passages, etc., have been changed. - The axis of the bazaar changed compared to the axis of the street. - Charsooq¹⁹ turned into four ways. - The markets replaced caravansarais (Timche) and squares. - Pedestrians and roads axes were built 	
Second	1956-1966	<ul style="list-style-type: none"> - The city's area has increased 1.8 times. - The city's population grew by 1.85 times. - There was no symmetry between urban expansion and population growth. - New buildings were constructed, and passages were developed. - High-rise construction began. - The eastern side of the city was not developed. - The marginalization began in the south of the city. - New functions were set up at the axis between the Gate of Quran and the Gate of Isfahan. - The city's growth speed has increased over the previous period. - Downtown shifted to the western edge. - The four-way Zand serves as a place to spend leisure time 	

¹⁸ (Nasr 2005)

¹⁹ The intersection of the two main and important directions of Bazaar.

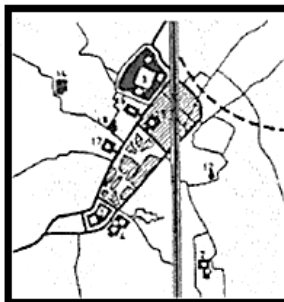
<p>Third</p>	<p>1966-1975</p>	<ul style="list-style-type: none"> - The city's area increased by 2.2 times. - The city's population grew 2.49 times. - The disparity between urban sprawl and population growth has risen dramatically. - The development of the east and south of the city is limited compared to the west and north of the city. - Development of scientific, administrative, military centres and car production inside the country is an important issue towards the development of the city in this period. - Several functions have been compressed into the old axis of the city. 	
<p>Forth</p>	<p>1975-1989</p>	<ul style="list-style-type: none"> - The city area is 8 times as much as in the previous period. - The city's population has tripled since the beginning of the previous period. - The city has been developed from east, west and south directions, and its expansion to the north was stopped because of the mountain. - The city centre is saturated with all kinds of uses. - In the Southern part of the city extensions were expanded 	
<p>Fifth</p>	<p>1990-peresent day</p>	<ul style="list-style-type: none"> - The city's area has increased 1.5 times since the previous period. - Failure to control the expansion of the city is significant. - The city has advanced to the west. 	



Before Development



Qajar Period



Pahlavi Period



Current Situation

3.2.2 Residential Architecture

Residential architecture is a place where human activities take place, and it is an integral part of human life (Alalhesabi and Korrani 2013). Iranian residential architecture, like many others, has been developed in a historical process and based on the different needs of the people. These factors can be considered to identify and describe the traditional architecture of Iran. Introversion, space organization, function of different parts, lifestyle, construction method, the relationship between houses, weather conditions, and connection with nature and external elements such as public entrances, private entrances, kitchens, connecting rooms, courtyard, and open spaces (Irani, Armstrong and Rastegar 2017).

As researchers such as Nader Ardalan, Henry Stirlen, Darab Diba, and Mohammad Reza Haeri have pointed out; interior spaces as for their quality, have been more important than exteriors facades in traditional Iranian architecture. This feature (introversion) is the most important feature of traditional Iranian architecture (Saeid Golestani 2018). The entrance space has played an important role in the proper functioning of the introversion feature and connects the interior of the house and the open space. Its importance is in controlling entry and exit, territory, and hierarchy (Dehbandi, Einifar and Cheragh Makani 2017).

3.2.2.1 Culture and architecture

The architecture of each region is a cultural outcome. Thus, architecture is a full manifestation of tastes, facilities, knowledge, and deftness of those who created it (Memarian, Azimi and Kaboodi 2014). The effect of culture on the formation of human needs is not hidden from anyone and housing as a private area must be answerable to the needs of its residents in accordance with their culture. In Iranian culture, the explicit definition of public and private areas and the creation of space hierarchy organize the living environment (Einifar and Aghalatif 2011). As a result, the sense of belonging to the environment increases, and the spaces of the house find an identity. In Persian culture, no one has the right to suddenly enter a house, so this cultural feature is reflected in architectural practices.

Iranian culture had a huge effect on designing architecture form and space and also on the quality of resident lives. In traditional houses, architecture applied in places was based on

recognition of resident culture so as to satisfy their mental and physical needs, otherwise, they would not be able to communicate with the space and pleasant feeling sense of belonging. Considering cultural elements including values, national norms and customs, religious beliefs, spatial hierarchy, internal and external consistency, privacy, and communication with the nature and type of planning as the main criteria, it can be concluded that despite all functional and regional limitations, Iranian architects have paid adequate attention to resident culture and its impact on the deep of their mind (Farshchi 2016).

3.2.2.2 tradition

Tradition refers to beliefs, objects or customs performed or believed in the past, originating in it, transmitted through time by being taught by one generation to the next, and are performed or believed in the present (Green 1997, 39,43). In simplified expression, it is anything that is transmitted or handed down from the past to the present (Shils 1983, 451-470). Some aspects of domestic traditions like privacy and hospitality are principles of Iranian traditional housing and shape the physical environment of Iranian living space (Jafarbegloo 2018).

3.2.2.3 customs

In the concept of our work is defined as a traditional and widely accepted way of behaving or doing something that is specific to a particular society, place, or time.

3.2.2.4 Construction system of traditional buildings and monuments

In classical manuals and references of Persian Islamic architecture different jobs, disciplines, and roles were involved in construction.

Usually, Iranian architects were known as “Mi'mars”. The Persian dictionary of Mo'in defines “Mi'mar” as the one who develops the design and plan of a building and supervises its construction. Although several scholars do not recognize the “Mi'mars” and the “Architects” to be historically the same, they do agree that their responsibilities overlap extensively.

There were other hierarchical disciplines below “Mi'mar”, in a descending manner as “Banna”, who was responsible for the construction, development, and repair of buildings, “Ostad” as masters in specific professional's fields, usually artistic activities, and “Amale” as a simple hand worker or labourer.

“Mi'mars”

The focus here is more on the Iranian traditional Islamic construction system before the first Pahlavi period. Although there is information about the “Mi'mars” works, buildings, and monuments, but accurate information on the lives of traditional architects, the phases of their developments and the type of their validation are not available. There are some narratives and some direct and indirect information about famous Iranian “Mi'mars”. These reports shed some light on the style and type of their lives, but not completely.

Based on the available rare and dispersed information, a generalization on their lives style and the type of their developments is given here.

In Nasiri travelogue (Fasaie 2013) is stated, normally the owner of a building or the investor had chosen a “Mi'mar” and received the completed building from him in return for payment. The traditional architects of this period used their experiences and skills to create a work worthy of recognition combined with unrivalled secrets – because of the tight competitions among “Mi'mars” and consequently a way to keep their unique developed skills.

Some of the “Mi'mars” that was recognized by top rankings rich families or even governmental and kings’ families due to their marvellous works had a chance automatically to be considered as noble and elite family groups. Others were still earned enough to be considered as middle reach classes in the society.

“Mi'mars” were trained based on a master-apprentice relationship that is different in nature and dynamics from today’s schools and universities.

To understand this type of traditional training, we can take into consideration three main features of this type of education and practice. First, it worked within an extended contractual framework or arrangement that involved a certain level of formality enumerating "mutual rights and obligations" between a master and an apprentice. Although the relationship between master and apprentice was not always tied to the wage obligations typically associated with employer and employee, the apprenticeship relationship was both longer and more formal than comparable one-on-one lesson scenarios such as mentoring and tutoring.

Second, it revolved around "the social and cultural aspects of going to and being at work" that give both the master and the apprentice a sense of becoming, rather than just doing or

knowing the subject or task at hand. In this sense, traditional craft training went beyond the socio-cultural development of participation emphasized in legitimate peripheral participation.

Finally, the teaching encompasses both “formal and informal learning experiences in and out of the workplace”, which specifically means that more aspects of the life of a master and apprentice were included than is the case during the work sessions alone. By harnessing such diverse reservoirs of life experience, this key aspect of apprenticeship training emphasizes a more holistic approach to both teaching and learning as individual tuition and learning.

These apprenticeships were not set up as an opportunity at learning a specific knowledge or skill set in isolation. Rather, they were meant to be a complete education, involving morals, vocational skills, religious study, and the passage of national and cultural heritage from one generation to the next.

Research in Persian architecture without knowledge of geometry is impossible. Iranians considered geometry as an important science, balanced with mathematics, astrology, and music. In Iranian architecture, geometrical and abstract patterns were emphasized as a forming factor (of whole structure), a decoration method (of components), alternatives, and a sense transformer. It seems that developments in mathematics and consequently, in geometry and the advent of new tools during historical dynasties of Iran have influenced developments of Iranian architecture, directly. These topics were trained based on a master-apprentice relationship by different qualified masters or the famous “Mi'mar” to their apprentices.

To be accepted as “Mi'mar” was not an easy task. In addition to showing their capabilities in architectural work. They should have been recognized by their masters and indirectly be acknowledged by other “Mi'mars” too (Trevor 2008).

“Mi'mars” or traditional architects often travelled to learn different techniques and as were invited to do important projects in a city, were settled there. These architects have usually brought or invited other “Ostads” masters, specialists, such as tile-worker, mirror workers, or carpenters to contribute to their building projects. Each of them was taken part according to their artistic capabilities and their professionalism. Normally “Ostads” had their own team and often belonged to the rich middle classes. In many cases “Mi'mars” or “Ostads” were trained in families that have the same occupation over more than one generation. For example, the

famous Shirazian “Mi'mar”, “Aboulghasem Mohandesi” who has been trained by his father, another famous “Mi'mar”. In the city of Shiraz, there have been artistic “Mi'mars” such as "Mohammad Hassan Memar Bashi", "Abolghasem Mohandesi", "Mohkami Family and Foshat Family", each of them has left several monuments or buildings (Nejad Ebrahimi and Aliabadi 2014).

“Bannas”

A lower level than “Mi'mars” (traditional architects) were “Bannas”. They were able to understand and read plans and drawings. They helped architects to fulfil ideas and to execute the works. From the social status point of view, normally they could have been from poor to rich middle classes. Usually, they were chosen from the city that project was carried out. A combination of small group management capability and professionalism in some practical fields were the requirements of this group. In some cases, and to optimize the financial budget for small buildings, “Bannas” were hired instead of “Mi'mars”. In such cases “Bannas” were responsible for simple standard buildings that they had gained experiences from their previous works.

“Amale”

“Amale” had the lowest position in the architectural constructing systems, and they worked as labourer. Normally they were taken from local workers and belonged to lower social classes.

3.2.3 Residence and residential environment

Residence means physical and emotional belonging to a place and residential environment is the environment around this place. These terms will be defined below.

3.2.3.1 Residence

Residence can be considered as an indication of location and authentication. Residence indicates the establishment of a meaningful connection between humans and the presumed environment, which is the result of trying to find identity, that is a sense of belonging. This comes true when he has established his existence in the world (Yarahmadi 2002, 63).

3.2.3.2 Residential environment

In order to ensure social growth, the home area, in addition to the residential unit itself, must also include the surrounding environment. When a residential complex is built a social centre is formed. This centre needs personal cohesion to maintain its values. If this is neglected, a part of the body of society may be separated from it and lose its connection with it (Taheri 2013).

3.2.3.3 Housing

In the definition of the Statistics Centre of Iran, "A housing unit is a place, space or area in which one or more households live and have access to one or more entrances" (Statistical Center of Iran 1996).

The concept of housing is associated with a long stay in a place. Urban housing is classified into several categories in terms of type, the density of housing, as well as the number of living classes and households, but in terms of population, it can be divided into three categories: single-family, multi-family, and residential complex (Saeednia 2004, 18).

3.2.3.4 Home

The word house, as it is used today, used to refer to a room, and the word sera were used instead of the word house in today's term (Mohammad Karim Pirnia, Gholam-Hossein Memarian 2001, 48).

3.2.3.5 Entrance

The entrance is the part of the building from where the traffic flows. Older entrances, generally have zones and components, such as:

Zones: portal, doorway, vestibule, corridor, iwan, and arcade.

Components: door, knocker, threshold, platform, and overdoor.

By limiting the vision and creating adytum in the entrance, architecture creates privacy for its residents. Architects believed that house doors should not open together or facing each other. And it should be a space between them to prevent the direct looking into the house (Okhovat, Almasifar and Bemanian 2011). Input space in traditional houses is consists of several several parts and each of them has certain physical and functional feature. The vestibule is a space that is usually placed after doorway and its major functionalities are

dividing the entrance path into two or more directions (H. Soltanzadeh 2005). Vestibule should be considered as one of the best examples of privacy within traditional houses. In vestibule with two hallways were placed to enter the interiors (private residence) and exterior (staying guests). The interior is the residential space of people and other people do not have to be entered (M. Pirnia 2008). The most important performance of the vestibule is dividing the entrance path into some directions and protecting part of the privacy of the house (Bemanian, Saremi, et al. 2015). Traditional architecture by designing the vestibule after the entrance separates the public spaces of the house from the private spaces within a house and close the view of passers, completely (Masaeli, 2009). The corridor is another entrance space that creates a relation between two areas. In traditional houses, entering to the yard is through a screwed corridor which prevents the direct vision to the entrance and creates a type of privacy (Bemanian, Saremi, et al. 2016). To maintain privacy at the entrances space of houses and control the view from the outside passages to the privacy of the house, used a combination and arrangement of vestibule, corridor, and courtyard. So the privacy issue was solved through a corridor that connects the vestibule to the yard (H. Soltanzadeh 2005) and cut the vision of foreign to the sanctity of home and family (M. K. Pirnia 2015, 160). The role and function of the vestibule in extroverted traditional houses are similar to introverted houses. The vestibule of *Samii*, *Abrisham*, and *Ghadiri* houses in Rasht city is a separator of interiors and exteriors. With this difference that in the three samples, passing to spaces was direct and without passing the separator filter (Shahfi zade and Ahmadi Disfani 2014).

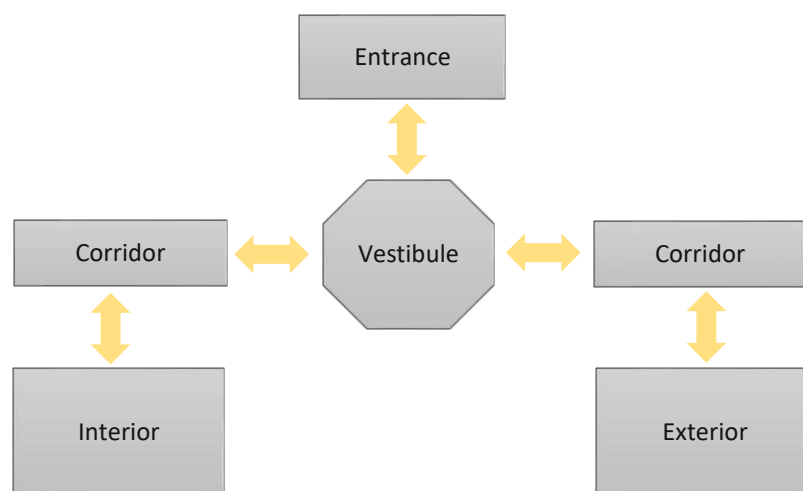


Diagram 3-7 the role and function of entrance

Housing History

The most private abode of human life has made many definitions about housing over various periods. Despite many different definitions, there is still much debate and analysis.

The look of diverse communities and cultures varies about housing; Le Corbusier characterized a house as a "machine for living in". Explaining that the main principle for architects should be to create a house as well suited to its purpose as you would a machine. It also reinforced the opinion that it is better for something to be functional (functionalism) than have a good appearance. But in fact, the concept of habitation and place of living is defined differently for many communities including eastern man and goes beyond the concepts of material and consumption. From the old eastern point of view, a machine, no matter how efficient, ultimately lacks a subtle human spirit and sense. A modern house alone lacks some important concepts for the eastern man. For example, old Iranian houses, find meaning including some more complex concepts, such as, family, cultural norms, and beauty.

Heidegger's philosophy about dwelling seems closer to Eastern man. Dwelling according to him is to remain in place and to be situated in a certain relationship with existence, a relationship which is characterized by nurturing, enabling the world to as it is.

Heidegger states that construction is not just about building for dwelling with goal of inhabiting, it has a meaning beyond that. He does not consider being in a space to mean living and considers being a resident to be different. He says that habitation is a quality that man can achieve through construction, but not every construction and every presence. He defines two types of presence in space: habitation and residence. Heidegger believes that the two are fundamentally different. It is possible to stay in any kind of housing, but not all of them can provide housing or, in other words, protection. In fact, the house is a fence that man builds for his freedom (Adam 2010).

Traditional Housing

Iranian traditional architecture includes art, architecture, family values, skills, and knowledge, which were accomplished from family or community members, transferred through generations, and were continuously recreated by community members in reaction to their environment and history. Hereupon, in this concept, tradition is visible in the use of a

place and Iranian traditional values are conspicuously observed in their historical architecture like houses. Hence, traditional architecture in Iran, before creating visual beauty, was designed relying on the spiritual aspects with the aim of creating an atmosphere for human comfort and security. (Jafarbegloo 2018). The form of traditional housing is summarized in functional spaces and obvious geometry, but its esoteric nature is due to a superior truth that exists in human nature (Masaeli 2010, 28-29). The traditional architecture of Iran as a manifestation of Islamic tradition was mixed with traditional Iranian thought and form. According to Ardalan, the best combination of Islamic art²⁰ and ancient traditional thought is visible in the architecture of houses which represent spiritual work and meaning-focused on Islamic cities and architecture (Jafarbegloo 2018).

²⁰ Islamic art encompasses the visual arts produced in the Islamic world (Jenkins-Madina, Ettinghausen and Grabar 2001).

In (Figure 3-15) shows an example of two traditional and contemporary houses to compare introversion and extroversion form.

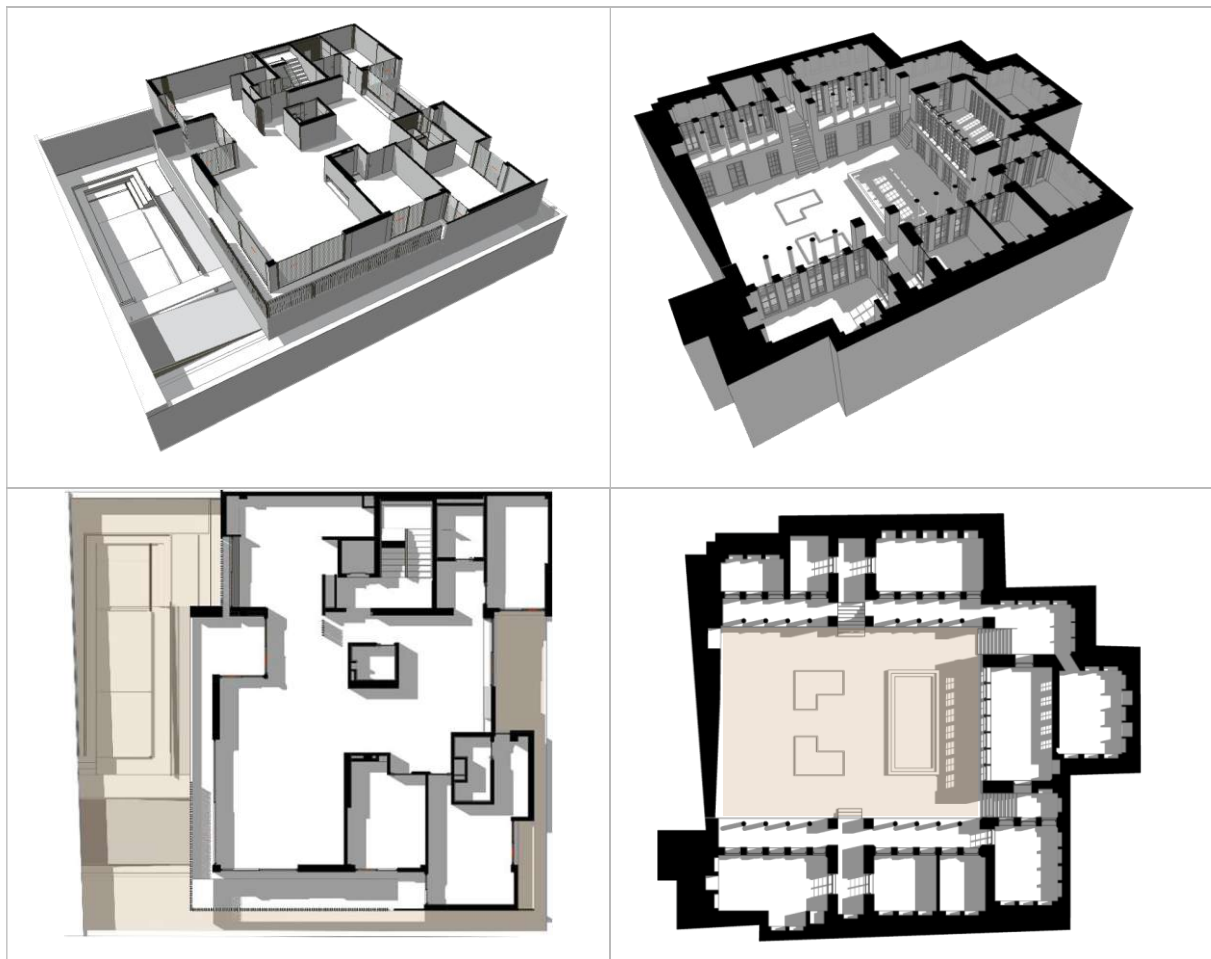


Figure 3-15 The shape of contemporary(left) houses compared to traditional houses(right).

Traditional Housing Characteristics

After the arrival of Islam in Iran, the culture, religion, and art of this land mixed with new factors. Beliefs, religious rituals, principles, the spirit of thinking, traditions, characteristics, the attitude of generations and other characteristics of people are illustrated are merged with the existential nature of Iranian housing whose track is traceable in all the traditional architectural works. Some of these spatial characteristics are as follow (Nayyeri Fallah and Khalili 2015):

- Introversion as a Key Concept
- The Linkage between Architecture and Nature
- The Design Value of Hierarchy

Traditional housing principles

The principles governing Iranian traditional housing have deep roots in the culture, religion, and attitude of this country. Privacy, as an Islamic-Iranian principle governing all aspects of life, has formed Iranian traditional housing and has had deep impacts and outcomes on its spatial organization and function. The role of the value of privacy in shaping Iranian culture is vital. Privacy as a principle governing all aspects of life has had deep impacts on the spatial organization of traditional Iranian housing (Nayyeri Fallah and Khalili 2015). Among the values of traditional architecture, we can mention the method of covering the sight and creating privacy, climate consideration, use of magnitude and capacity, geometry, proportion, light and colour, which are shown in (Diagram 3-8).

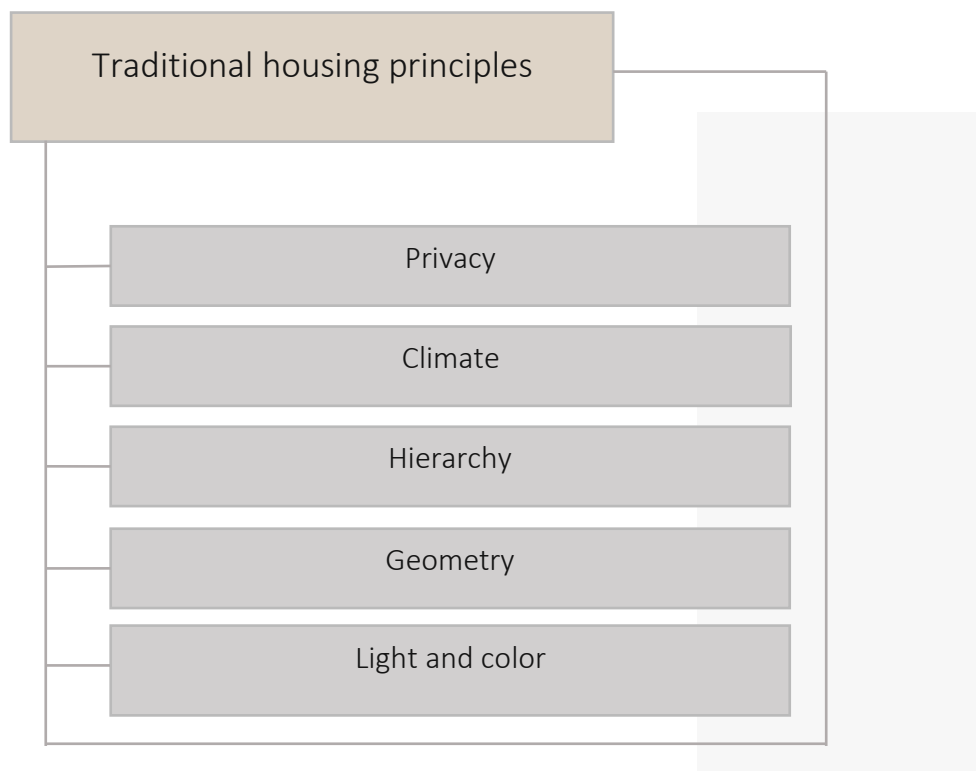


Diagram 3-8 Traditional housing principles

Privacy

One of the most important principles in relation to the family and social relations to cover the sight and create privacy in Iranian traditional architecture, especially after Islam, is the principle of privacy (Pirnia, 2005). Traditional housing creates privacy by creating a new space based on respect for residents and visitors. In this regard, the feature of external and internal separation, as well as the deviation of sight at the entrance, is used to create the concept of

privacy. Accordingly, the "two selves" in the house are identified. The one that can be shown to others, or in other words, can be revealed to strangers, which is located in the outer courtyard or the outer part, and the one that can be seen from the inner sight and is revealed only to relatives who are invited, which is located in the inner yard or the inner part of the house. The key point in the concept of privacy is the ability to control people or groups in visual or audio interactions. The house that was related to women's territory was entirely distinguished from the men's public space (outside the house). But even inside houses, there were gender differences related to functional specialization of internal space (Roberts 1991).

The realization of the external and internal concept is an architectural response to the innate desire of the residents, to have privacy and to be protected from the sight of strangers, and at the same time to keep the respect of guests in this way. By maintaining the privacy of the family, family life is not disturbed during the ceremony and this approach increases mental peace (Masaeli 2010).

Climate



Figure 3-16 Summer and Winter Zone

Based on the Iranian cultural beliefs, the important point in the link between the architecture of traditional houses and nature is the emphasis on privacy (Seyfian and Mahmoudi 2006). Buildings are always built in such a way that in combination with nature and using its elements, bring inside the natural environment and hold it. For example, considering

environmental and natural elements, being aware of different climatic conditions in different regions, and taking care of the direction of sun radiation and strength and orientation of the wind in different seasons, the houses were planned and oriented so that by internal migration to other rooms in different seasons, the harsh nature outside could have turned into comfort inside the houses (Masaeli 2010). In Iranian traditional architecture, the main link with nature is bound with more important and valuable principles that derive from the worldview of the architect and society. That is why gardens and yards in many cases, are embedded in built enclosed environments (Ardalan and Bakhtyar 2011, 68). Two parts in traditional houses that are defined for different seasons. It is shown in (Figure 3-16).

Hierarchy

The value of hierarchy, as one of the main principles in the world, has had the greatest impact in the formation of privacy in the framework of traditional Iranian architecture and its undeniable role is in defining the components of a whole and identity to it is noticeable (Seyfian and Mahmoudi 2006). According to Naghizadeh in the Islamic worldview, in the universe, any object has a particular place and status whose value and status are determined by the characteristics of its hierarchy. The built environment also follows this rule, and its components have special position according to its values and status of the activities that are done within it and the people inside and their relationship with other adjacent parts. These features are related to the physical characteristics and adjacent spaces. Also, to form an architectural building, the principle of hierarchy causes the functions and the formation of spatial territories with different functions and forms spatial boundaries (M. Naghizadeh 2001). In short, the important point is that applying the principle of hierarchy in spatial architectural systems, with separating public territories from private ones and classifications in usage has a more significant role in emphasizing privacy in the spatial organization toward creating spatial continuity.

Geometry

Geometry is so important in traditional Iranian architecture that it can be considered as an independent subject. researchers have realized is essential for the fact that geometry is imperative to the traditional architecture of Iran (Ardalan and Bakhtyar 2011, 27). The comprehensive understanding of geometry and its relevant terms enabled Iranian architecture

to present more durable and stable forms based on the circle and square, or rectangular geometrical characteristics. The utilization of these geometrical aspects, proportions, and measurements assisted the architects in the development of the concept for modular design (Vakili-Ardebili and Boussabaine 2006). The geometrical basis in Iranian design is present in many facets of the architecture: in the proportion of spatial design, in the creation of three-dimensional geometric objects, and in two-dimensional surface decoration. Any system of proportion functions via creating a united design, making the product aesthetically pleasing. The Islamic system of proportion, which utilizes irrational numbers, is based on the geometrical proportion of the square, the double square, the equilateral triangle, and the pentagon (Nabavi and Ahmad 2016).

The proportions, dimensions, and main structure of the traditional house have been obtained by resorting to geometry and by understanding and visualizing the space as well as recognizing its quality and quantity. Geometry formed the face of the building through lines and ratios. In all stages of the development of a traditional house, the close relationship and cooperation of geometry and measurement (proportion and dimensions) play an essential role. Geometry is a factor in determining and controlling the dimensions and a guide to achieve the desired result, using not only the physical needs but also the spiritual and psychological ones (Abolghasemi 2004, 33).

Geometry, in addition to the principled interventions in the systematization of traditional house spaces, is a device for general correlation between all the factors influencing the design. Geometry, which consists of squares, circles, and ordinary computer, is the same in different places, but the ways of designing and using lines, proportions, and creating different and hidden concepts in architecture are different (Masaeli 2010, 34).

Through geometry, mentality achieves objectivity and spirituality achieves materiality. In order to transform his mentality into objectivity and to take the meaning that originates from his nature and instinctual desires to the material world, the planners of buildings in a vernacular context need a device by which they can express it. Geometry in old-style housing is the mentioned device that transforms the spiritual perception into the material. In old-style housing, based on the reflection of the plan geometry on the facade, it creates beautiful lines

and proportions in the surrounding facades. This unity in the geometry of old-style houses creates a pleasing beauty (Masaeli 2010) .

Light and colour

Colour and light are elements that play an important role in old-style Iranian architecture. The combination of shadows and colours together is one of the artworks that give a special feeling to the space. In Iranian architecture, the study of colours has always been considered as the main part of the building. Also, the hierarchy of light and darkness has been carefully used as to guide from one space to another. In this hierarchy, it is the intensity of light and darkness that determines their importance. For example, in a residential building, after entering and pausing in the vestibule, a dark passing zone, one is guided by light rays radiated from the sides or above to the yard, which is the heart of the building and its brightest zone (Sareban 2019).

Parameters of old-style houses are listed in (Table 3-3).

Table 3-3 Traditional housing values and principles

value	Principles	Description
Create privacy	Observe the hierarchy	The space can be confident that, in terms of structure for use has privacy and security and its spatial quality should prepare peace and comfort of the person.
	Introversion	
Attention to climate	Orientation based on the sun	Observance of climatic principles against adverse weather conditions to adapt to climatic conditions.
	Orientation based on wind	
spatial hierarchy	Observance of hierarchy in the placement of spaces	One of the most important principles in defining the privacy of spaces is the principle of hierarchy.
Geometry and Proportion	Using the geometry of the structure and meaning	This geometry is seen in appearance as lines and proportions
Light and colour	Combination of colour and light	In old-style houses, light and colour have been used to brighten and Perfect space.

3.2.3.6 Housing architectural developments

At the end of the Qajar period and almost coinciding with the beginning of Pahlavi, as is explained in 2.3.1.2 (Shiraz Development Process and Impacts), not only the urbanization was changed, but also the fundamental internal structure of houses was affected radically.

The evolution took place in the political, ideological, social, and cultural structures of the country during the first Pahlavi period, led to changes in lifestyles and behavioural patterns, followed by changes in house structures (H. Soltanzadeh 1993, 68).

In addition, non-Iranian architects entered Iran to build government buildings and subsequently, motivated new native architectures to follow their building features. Population growth and immigration of suburban populations to the cities, accelerate the tendency of this change, especially because of the weaker bound of new immigrants to previous Iranian architecture traditions from introverts to extroverts.

As a result, at the beginning of the first Pahlavi period, the most important feature of Iran's historical architecture, namely introversion was changed (Kiani 2004), and the buildings in all categories were converted in almost a short period of time from introverted type to extroverts. The concept of this evolution has been demonstrated schematically in (Figure 3-17).

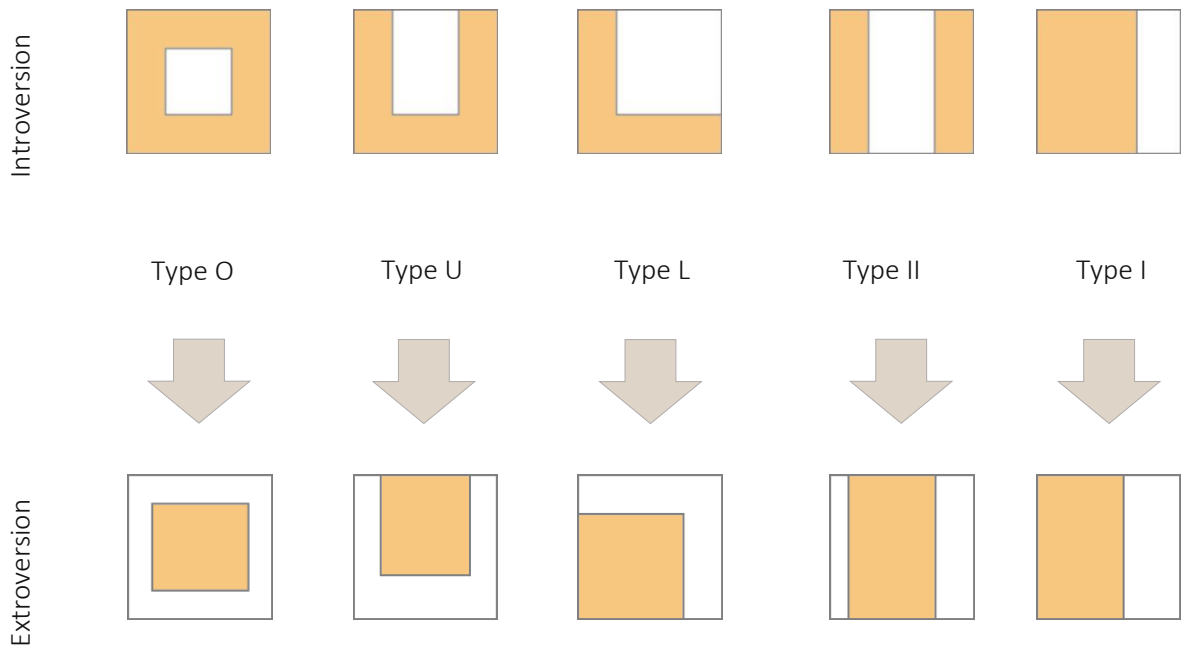


Figure 3-17 Transformation of introverted to extroverted houses in this period.

The development process is shown in (Diagram 3-9).

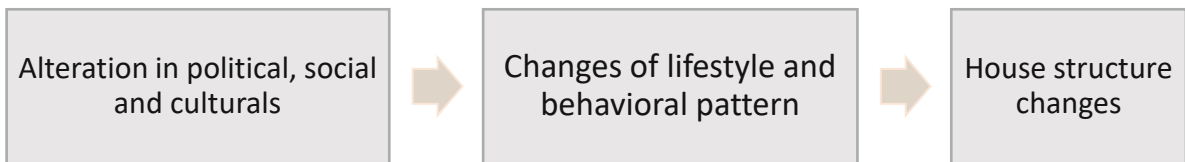


Diagram 3-9 Housing architectural developments.

Introversion

The majority of old-style houses are introverted or look inwards. All the spaces were arranged around an open, rectangular courtyard that formed the link between different areas of the house. The arrangement follows certain geometrical rules. According to Haji-Qassemi, this geometry not only defines the general body of the ensemble and gives shape to every single detail, but also imposes a hierarchy to its different areas, which determine their locations

and relationships in accordance with their character and importance. While harmoniously connected to each other in the design, the areas of the house enjoy complete independence and are always separated from the others by intermediary areas (Haji-Qassemi, 2003).

The presence of a specific core or centre in the building complex causes the other components to connect with it. If this central core is separated from the building the performance of spaces does not work anymore, because the character of the building depends

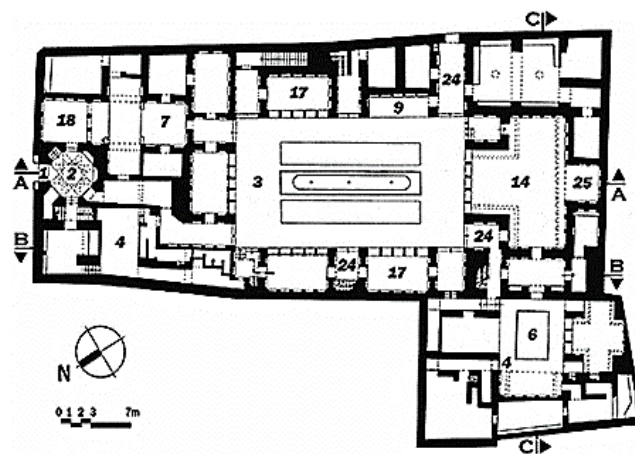


Figure 3-18 An introverted house
(Cultural Heritage of Fars province)

on the centre. The existence of this centre has an impact on other spaces. Among other things, it causes the unity of the building. On the other hand, it creates a pause. Considering that the heart of the building in Iranian architecture is the courtyard and however it is not necessarily located in the centre of the building, but causes the feeling of centralism to the maximum, the courtyard is considered the centre of the building. Attention to the centre not only happens in the courtyard, but we also have centralism in the elevations, that is, in each elevation, an important element can be considered in the centre, which is more significant than the other elements on both sides. For example, there are chambers in the centre of the facade and the three-door rooms or other elements are located on both sides, or the five-door rooms are always located in the centre (Ahmadi, Zareie and Fouladi 2015). The principle of introversion is more crystallized in the physical form of old-style architectural houses, and in addition to paying attention to cultural and religious issues, the climate has also been effective in using this principle in the construction of old-style houses (Ahmadi, Zareie and Fouladi 2015).

According to the past traditional system, the hierarchy in architectural spaces based on the principle of privacy and climate is such that the entrance of the house is organized from the alley, which is a public space to the most private spaces of the house. Neighbourhoods have narrow alleys, most of which are the personal area of the neighbourhood. After crossing the alleys, people enter the "Darband" (Darbands are covered corridors that lead to several related houses in terms of relation). Darbands create a space between the alley and the entrance of these several houses. After entering the space and passing through the corridors belonging to it, the entrance door of the houses is located. After passing through the entrance, there is a vestibule that divides the spaces and is considered a stopping point. The existence of this space prevented people from entering the house directly and made them pass through a filter (the vestibule and the corridors), which lead to the courtyard indirectly. The organization of the house has been in such a way that each of the architectural spaces located on the four sides of the courtyard was meant for different seasons. There was a basement, a ground floor, and a mezzanine or separate floor above the ground floor (Ahmadi, Zareie and Fouladi 2015).

The architectural patterns of introverted houses are listed in (Diagram 3-10). Until about the end of the Qajar period, almost all houses were introverted.

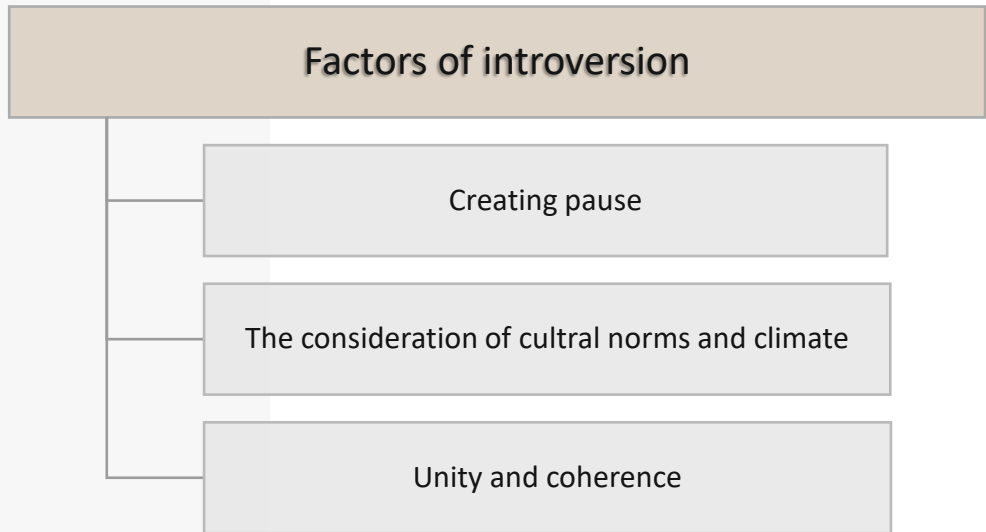


Diagram 3-10 Factors of introversion

Thus, the main points that were considered in the construction of old-style houses are:

- Access to the house was not directly from the alley. This access was led through a hierarchy from the gate to the entrance door, the vestibule, the corridor, and finally to the central courtyard and the surrounding architectural spaces.
- The houses usually had an inner courtyard with surrounding spaces for the residents and an outer courtyard with serving spaces for non-residents and guests.
- Access to the spaces inside the house was provided through corridors in the corners of each side of the yard. Accordingly, the person had to pass through a few steps that separated the yard from the corridor and rooms and reach a narrow corridor that led indirectly to the rooms and other spaces.
- The circulation method of spaces was room to room.

- Access to the attic floors was through stairs located in the closets behind the rooms.
- The courtyard was surrounded by architectural spaces on all four sides. The arrangement of public and private spaces was organized from the central courtyard to five-door rooms, three-door rooms, closets, and attics, and from the centre of the house to the side spaces as far as possible. In this way, the most private spaces were located in parts of the house that had the least visibility and access.
- According to the Iranian centralist thinking, important spaces were usually located in the central axis of each front, and this axis was considered even in the design of the facades.
- The number of room openings was usually three or five and the middle chamber was usually larger and more prominent than the other ones (Mazandarani 2009, 135).

Transition

Iranian houses have changed dramatically in the transition period. The changes took place in different periods in which social, economic, and technological transformations caused physical and morphological changes. The spatial characteristics of old-style Iranian houses reflect natural, geographical, and cultural needs. There was a harmony between people's needs and the physical characteristics of the house. However, in the transition period, a new residential type appeared, in which living spaces were categorized according to their general functions. The spatial arrangement, together with plan layout and proportions, facilitated the limited potential for varied lifestyles. In the new type of residence, the physical characteristics of the house have changed considerably, while living habits and lifestyles have not changed at the same pace.

From the middle of the Qajar dynasty, due to the influence of foreign countries like Britain and Russia on Iran's domestic politics, the domestic economy was stagnant and production at the national level faced problems. At the same time, more interaction and engagement with European countries was a requirement to become familiar with modern and new technologies. The import from these countries, including construction industry and new ideas, changed gradually the infrastructure of the big cities and the architectural tastes of the people.

At this time, due to the trend toward the foreign economy and the growth of the commercial classes of society, many luxurious houses were built by merchants and lords of that time and the crossing from introversion to extroversion began.

The transformation process of introverted architecture into an extrovert as has been explained in 3.2.3.6 (housing architectural developments) is demonstrated in the (Diagram 3-11).

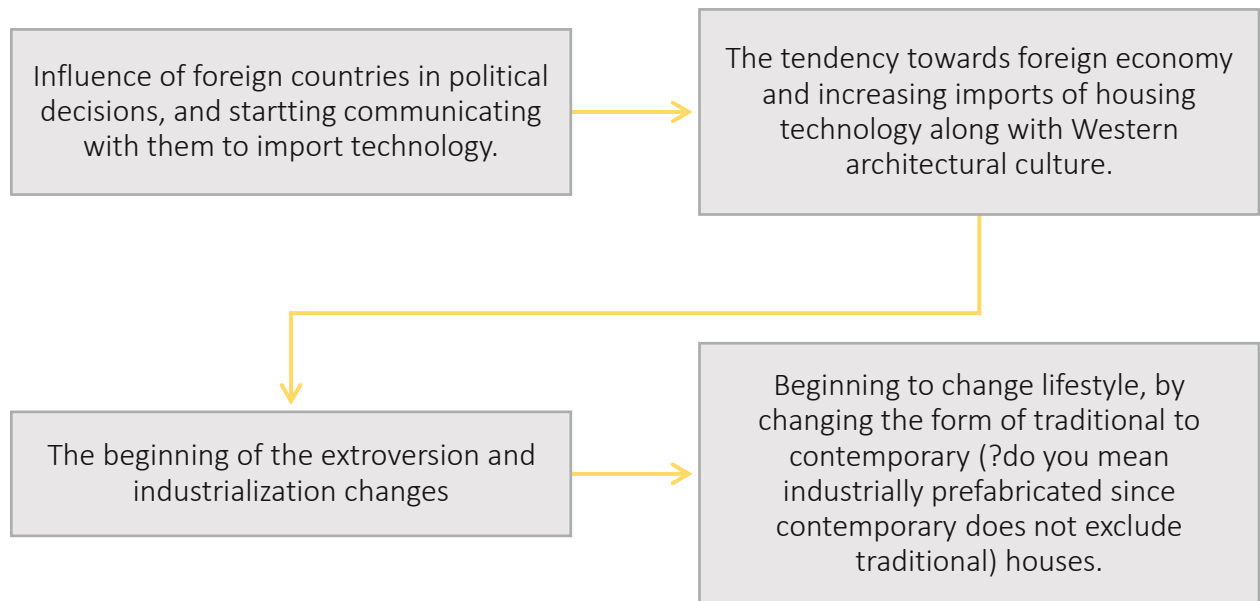


Diagram 3-11 transformation process of housing architecture

The architectural pattern of houses with a central courtyard, which was an old-style and repetition of past patterns, gradually became extroverted. Introversion in its traditional definition was completely transformed physically. The quality of house building changed zones such as vestibules and courtyards were removed and replaced by balconies. The built masses, unlike in the past, spread at high altitudes, and as a result, the quality of neighbourhoods changed. The growth of this unprecedented phenomenon was because of the evolution and materialization of human thoughts due to the mismanagement of politicians and inventors and then crystallized objectively in architecture (Esfahani and Shahraki 2014).

From then until today, contemporary human, due to intellectual changes and the evolution of behaviour patterns in confronting with the new housing system, has undergone a change in the needs and desires to achieve a new pattern of housing.

The usage of the courtyard in a hot dry climate and especially in Shiraz, is usually marked as the heart of the dwelling spatially, socially, and environmentally. Although the size of the land, to some extent, is influential, the average sizes of the courtyards are generally determined according to the latitude. In the ancient period, courtyards were narrow enough to maintain a shaded area during the heat of the day in summer but wide enough to receive solar radiation in winter. In past days, a courtyard could provide security, privacy, and a comfortable place within the house. In order to reduce the area affected by solar radiation, compact forms are chosen. Shady areas can be obtained by arranging those forms of courtyards with the help of plants and water (Farjami and Ghaderi 2016). The courtyard where it was planted with trees, flowers, and shrubs, not only provided comfortable conditions and a beautiful setting but also supplied some shade and increased the relative humidity of the courtyard space (Haji Najad, Rafiean and Zamani 2011). Therefore, these two elements, namely trees, and water can almost be seen in all historical houses of Shiraz, even small houses.

After the Islamic Revolution in Iran to the growth of migration and population and more demand for housing and properties and materials in large cities, and raising the price of the house, the plan to reduce the size of houses and mass-produce apartments was considered (G. H. Memarian 2009, 138).

Other influential factors in changing the pattern of house building are:

- Providing energy resources needed by each household in residential units with a high total area.
- Preventing area loss
- Considering the financial capacity of the majority of people in the community to provide housing.
- Helping to save on the use of government funds allocated into the housing. (Ayvazyan 1997, 121-140).

Extroversion

Extroversion is a behaviour that is characterized by an objective and external perspective and is associated with higher practical activity. The phenomenon of extroversion versus introversion was the main cause of formal changes in the architecture of the Pahlavi period.

"... The architecture of the first Pahlavi period, in the process of forming a new style of architecture that is in no way correlated with old-style Iranian architecture and expresses the form and appearance of a new architecture, is the result of a transformation in the simultaneous social structure who have freed themselves from the introverted and closed state and have turned their view from the inner courtyards to the outer spaces and the urban landscapes ... " (Bavar 2009, 117).

In the architecture of this period, windows are important and are unveiled for the first time. The iwan, which was a symbol of the architecture of the palaces and considered royal, was prominent during the Pahlavi period. In fact, for the first time in this period, the walls of the courtyard became shorter, and as the windows opened to the alleys (Rajabi 1977, 92).

A large part of a person's comfort is formed in space. He makes his decisions in space, decorates, and arranges the items around it in accordance with his living and working environment and his movements and behaviour are following spaces of the home. In other words, it can be acknowledged that all human mental and physical activities take place within the framework of space, and so it is effective in shaping the identity of individuals; In such a situation, if the place changes in various ways such as dimensions, design, colour, light, etc., the person's lifestyle will change accordingly.

Since the beginning of the 20th century, Iran has witnessed great social, economic, and cultural changes that have influenced different aspects of Iranian life. Architecture, as the physical embodiment of social life, has changed to a great extent. Transitional period housing began to be constructed in Iran around 1961 (Haeri 1997); (H. Soltanzadeh 2005). This period is from the last years of the Qajar dynasty to the beginning of 1961 (H. Soltanzadeh 2005). Transitional and contemporary architecture, depending on new construction technologies and some other influences, witnessed the emergence of different styles. In extroverted houses, the courtyard is an open space surrounded by walls, and the building is like a box inside it, and

connected to the courtyard by openings around it (M. Pirnia 2008, 33). Enclosed yards with surrounding walls are the reason to protect privacy in extrovert houses (G. H. Memarian 2009). Extraversion is one of the architectural features that made the architecture of the Pahlavi period different from its predecessor, which was Qajar (Soflaei 2003).

Factors affecting the transformation of Shiraz houses.

An introverted house with a central courtyard, which was formed based on adaptation to the hot and dry climate, keeping the home and family away from the outside environment and Islamic social norms, was considered a common type of residential architecture until World War II (Ardalan and Bakhtyar 2011, 12-15).

A consequence of interactions and more communication between the west and Iranian people, especially before and during World War II, industrial revolution ideas from the west were brought to Iran, which was also supported by intellectual societies groups. The traditional Iranian society gradually sensed and experienced this global evolution and was motivated towards a type of industrial Iranian changes. This historical transition period from a completely traditional society to an industrial society; is relatively short but unique in the history of urban communities in Iran (Zareie 2010).

Cultural, economic, political, and technological developments of this period caused dramatic changes in the physical structure of cities and the typology of spaces, residential buildings, services, and government of cities. With the further expansion of cities and the development of industry and urbanization, and finally, with the advent of cars in the field of cities, the typology of architecture and urban textures underwent fundamental changes. New ideas and industrial products along with fundamental changes in the government system were all among the factors that led to major physical changes in this period (Fahimizadeh 2005), see examples below. To give light to this topic and show more precisely these serious architectural changes in this short transition period, parts of three studies are brought here.

Zareie emphasizes more on the materials changes, and she wrote in her article. In the houses of the early Qajar period, despite the differences, it is easy to see the similarities in the exterior of houses. The exterior of the house is covered with native materials such as clay and brick and has a simple facade as if the inside of the house is as simple and clean as the outside. The only

exterior element that attracts or invites the attention of any passerby is the beautiful entrances of the building, which are covered with various decorations and materials. These homogeneous materials in the Pahlavi period were diversified and materials such as tiles, bricks, stone, wooden doors and windows, metal railings, and sometimes galvanized roofs were among the compounds that have been seen in most buildings since then. Due to the important developments that took place in the field of new building materials, a new architecture was formed Compatible with these materials (Zareie 2010).

Another investigation has been carried out by Hossain Fasaie and nicely has considered “level differences” in houses. Another factor that has changed in this period was the entrance of Shiraz houses. In the Qajar period houses, level differences are used in the definition of space, that is, the difference between the height of the vestibule with the passageway and the courtyard with the vestibule and the difference in height in the vestibule and corridors to the next space. While it is observed in the Pahlavi period, the buildings are located higher than the ground level and most of the time are located in the middle of the site with tall columns (Fasaie 2013, 126). Also, exterior windows and balconies, are heavily used in houses as a new trend in this period.

And finally, Ghaed Sharafi contemplated entrances of the houses. The entrances of the Qajar period houses in Shiraz are more permeable than the houses of the Pahlavi period in this city and due to having arches, and numerous entrances, they show more diverse facades and perspectives. In addition, security and privacy by vestibule design, visual variety, and full and empty spaces in the entrances are the most important pillars of the entrance design of houses in this period. The continuous and harmonious decorations and details of the doors and doorways and inscriptions in the Qajar houses of Shiraz had a pleasant effect on the residents of that house while decorating in houses in the Pahlavi period, often with designs and new materials, focuses more on doors and windows and facade ornamentation than on entrances space. The existence of diverse and artistic spaces in the entrance design of houses in the Qajar era is more than the Pahlavi period. In passing through the entrances of Pahlavi houses, we reach the spaces that we expect to see, and unlike that in Qajar houses, the process of entering the house does not follow a predefined scenario. Another important element of Qajar houses

is the existence of a platform next to the entrance, a platform that provides a kind of urban furniture for passersby and a pause space for residents and was ignored in architecture after this period (Ghaed Sharafi, Falah Niya and Yousefi 2014).

As a summary, the factors affecting the transformation of Shiraz houses are given in (Diagram 3-12).

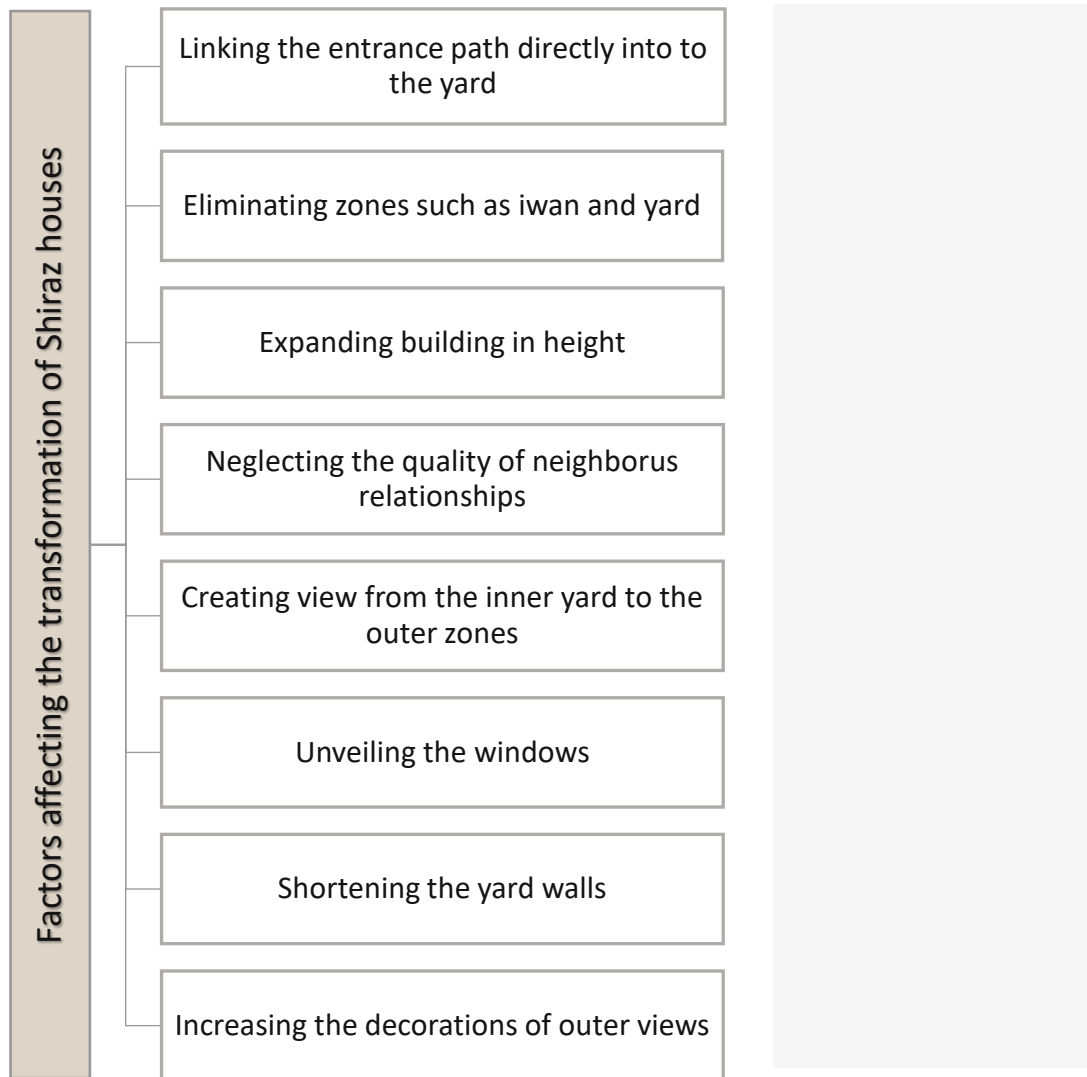


Diagram 3-12 Factors affecting the transformation of Shiraz houses.

3.2.4 Home

A home is a place for comfort, a space where people return to their personal and private environment after daily activities outside to recover. It is the space where people spend most of their lives. People prefer to transform their surroundings according to their needs and goals and are mutually influenced by the changing environment. For people who consider life as a path to reach a perfect satisfaction feeling, undoubtedly the selected living space needs to

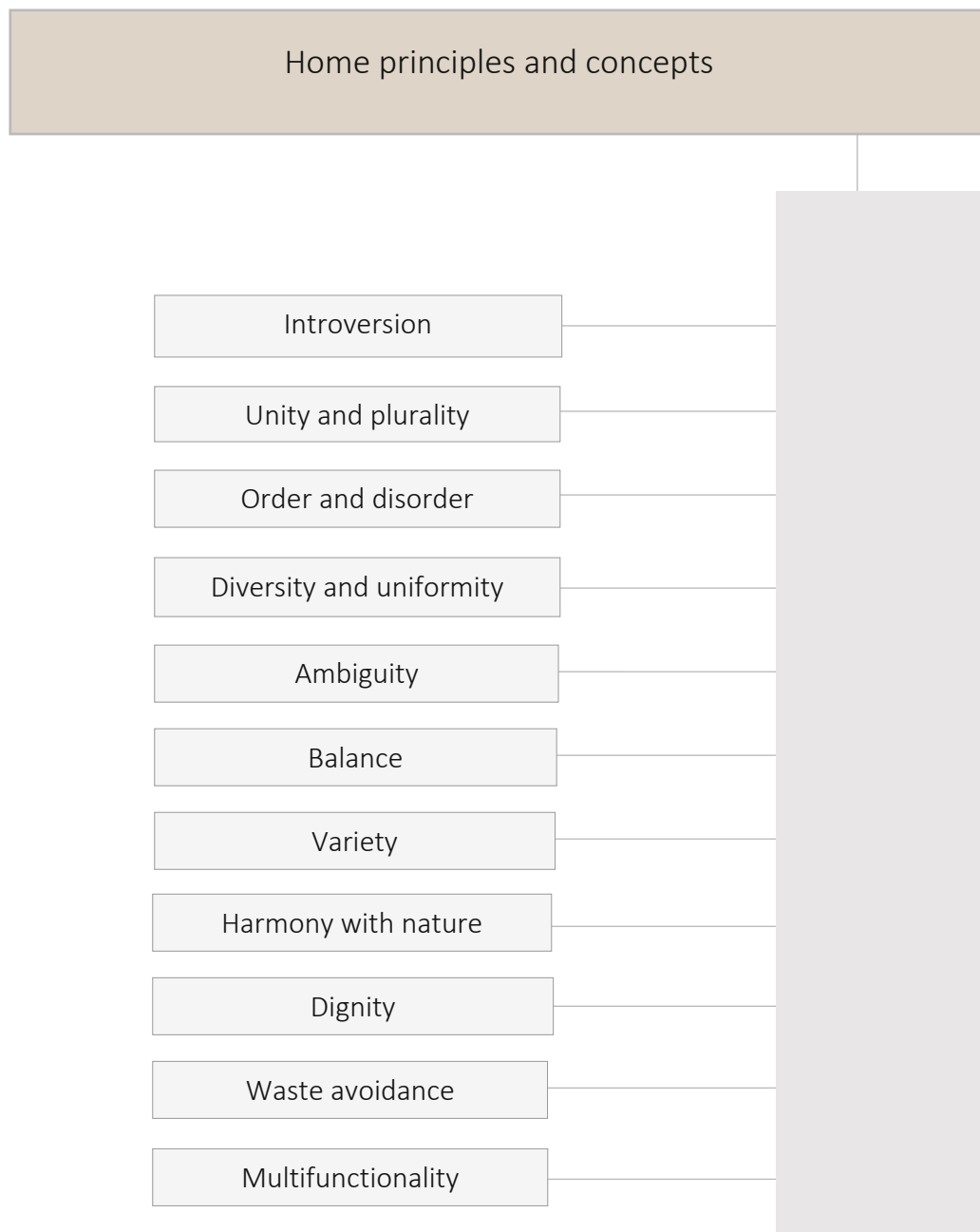


Diagram 3-13 Home principles and concepts

have the necessary features to achieve this goal. The old-style Iranian house, with all its meanings, tries to accompany the inhabitants on the path to reach perfect satisfaction.

3.2.4.1 Principles and concepts of “Iranian house”

The architecture of the house has had several principles which are well illustrated in the (Diagram 3-13) and are explained below. The evaluation and search for some of these principles were extended to other neighbouring regions or Arab countries to get a general overview of the cultural approaches of the neighbours.

Introversion

In literature, Iranian architecture has various features and forms. Seyyed Sadr defines it as buildings directly lacking spatial and visual relation with the outside, and its decorations, elements, and main body cannot be seen from the outside of the building. In Iranian architecture, the buildings are defined with closed spaces, surrounded environment, and occasionally, lack of central and main spaces adding up the element (Seyed sadr 2000). Memarian in a similar definition mentions: These are buildings that in their exterior scheme and in a labyrinth of passages, nothing can be seen except the muddy constructions, but inside the buildings include a world of abundance and beauty, this called introverted (G. Memarian 1994, 12).

In Afshar-Naderi's point of view, introversion is to regulate the internal form and shape of the edifice. He believes that compared to European architecture, the Iranian one starts with construction from the inside. Ignoring the outer shape and form and attempting to internalize everything including urban open spaces in such a way that even the squares look like a big complex of internal courtyards might maximize the freshness, safeness feeling, and the welfare of the spaces (Afshar-Naderi 1995).

In this system, the only opening to the outside is the entrance door that indirectly connects the internal open space of the courtyard to the outside world, (Figure 3-19). In other words, the indoor yard has no view of the passage outside, even when the door to the house is open. This is because there is a bending corridor behind the entrance that blocks the view of the indoor courtyard, impeding outsiders from seeing the residents' life and activity inside the building. Naturally, the impediment has a dual role, the second one being the obstruction of

the residents' direct view of the outside space. Hence, such a house/building is considered an Introvert in its spatial form and in its life and activity as well (Sadoughianzadeh 2013).

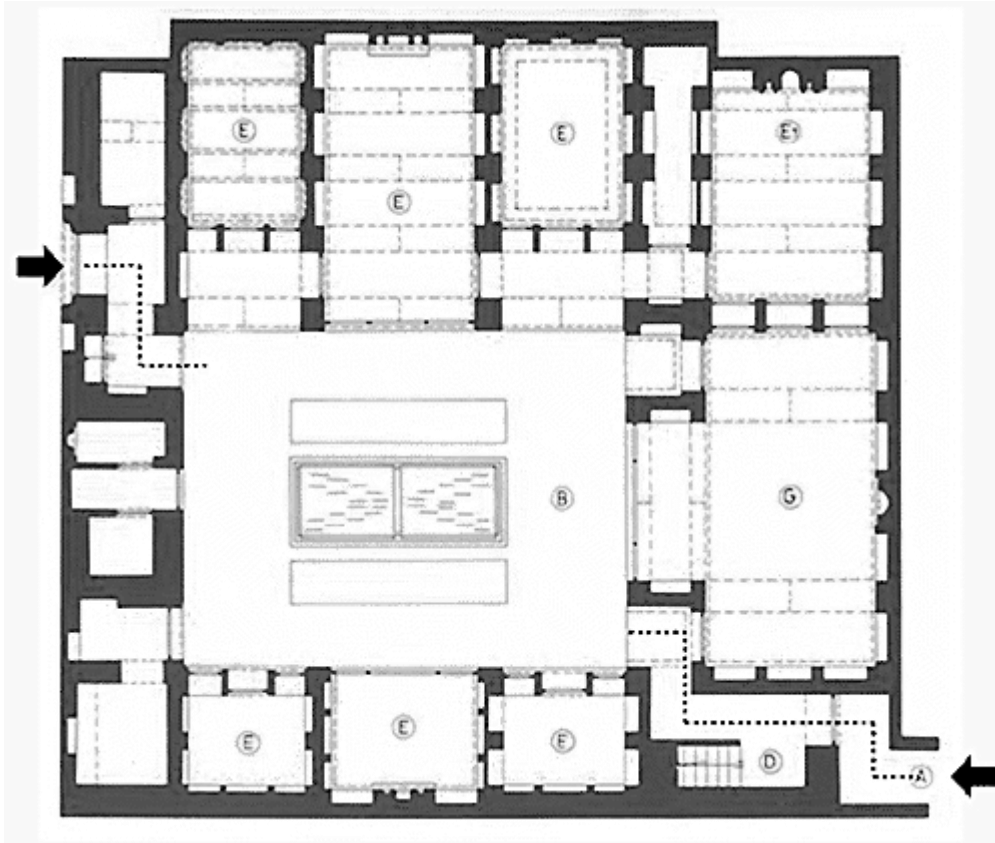


Figure 3-19 Entrance space and its position with the yard

(Archives of the Cultural Heritage Organization 2008)

To summarize, an introverted house has a sharp separation between private and public life. Introvert architecture is a spatial pattern that tends to conceal what exists or occurs inside, insisting on privacy, seclusion, and secrecy of the house. The beauty of the architecture could be observed only when you are inside the building or in its courtyard. The family life is in the inner parts; the “outer” pertains, inversely, to the public and the public activity.

Introversion in neighbouring regions

There are different theories about the formation of courtyard houses, and some are brought here.

According to Edwards and Co. courtyard housing is one of the oldest forms of domestic development spanning. Traditionally associated with the Middle East where climate and culture have given shape to a particular type of courtyard housing (Edwards, et al. 2006, 2).

Özkan in his article explains that the idea of courtyards as a plan configuration goes back thousands of years to Neolithic settlements. In the beginning, the logic behind this type of plan was mainly to provide a protective area from outside forces, such as invasion by human and wild animals. Over time, it has developed into a solid, logical configuration that maximises the built-up area in the urban context and allows controlled sunlight, especially in regions where it is abundant (Özkan 2006).

According to (Zein Alabidin 2010) the concept of introversion known by courtyard housing dates back to the beginning of the third millennium before Christianity when it appeared in the buildings of al-Sham and those of between the two rivers, the Tigris and Euphrates. They set up their tents around a central space, which provided shelter and security to their cattle.

It is likely that the previous nomadic desert lifestyle of Arabs had a strong influence on their desire to have an open space or spaces within their permanent houses. The courtyard therefore fulfils a deep-rooted need for an open area of living.

Apart from these, as we know, the interaction of cultural and religious values, together with physical considerations has had a significant influence in giving architecture its own distinctive style. Privacy is an important factor and play its strong role in Islamic countries and has reinforced introversion architecture style. One example is Saudi society. Privacy has become the determining behavioral factor in shaping the design of Saudi dwellings (female and family privacy) and introversion architecture is the answer to these request (S.Bahammam, 2006).

Unity and plurality

One of the major trends in Iranian and Arab architecture that has been given importance in different eras and buildings is the concept of unity and plurality. One of the specific features of unity and plurality can be understood in the relationship between the parts and their whole. That is, in these architectures, each element or any form or any space can be understood both individually and in combination together, a concept that can be clearly seen in many Iranian houses.

Unity and plurality are closely related, and it is referred to as ‘unity in plurality’.

It means the various small components that fit into a whole come into one unit.

For example, the decoration of a doorway or the ceiling of a vestibule uses many small geometric shapes and forms, and their purposeful combination creates harmony with other components of the building (Figure 3-20) or in another example this can be seen in the stone windows of basements. The small decorative forms are combined in order, and their repetition in a frame, creates a harmonious combination as a window, and the repetition of this form on the body of the yard with the same material, creates a unity surface at first glance (Figure 3-21).



Figure 3-20 Execution of details on the ceiling of the entrance vestibule

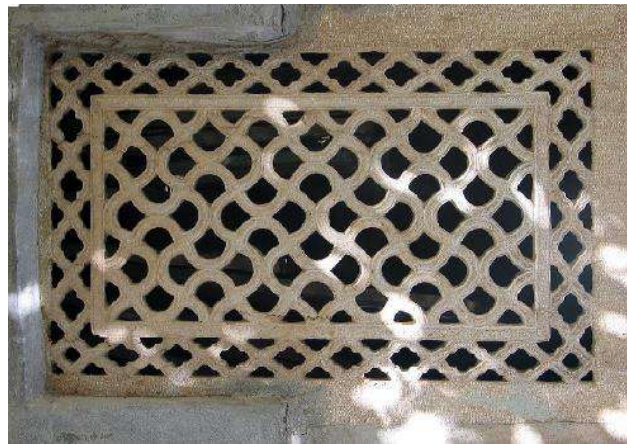


Figure 3-21 Stone windows for lighting and ventilation of basement.

Order and disorder

The order of traditional architecture in Iranian houses is synonymous with geometry. Mathematics and geometry have played a decisive role in the architecture of all old-style buildings in Iran. In Iranian art, the most complex forms have always been created from basic but clever geometric compositions. It can be said that Iranian architecture, has been mainly transmitted verbally. For this reason, architecture is based on simple geometric principles. The reason for this is that it can be easily memorized and implemented with simple tools such as rope and plumb line. Geometry in Iranian architecture is basically the unifying element of the part and the whole and at the same time it is absolute and flexible (Mehdizadeh Saradj, Tehrani and Valibeig 2011). The aesthetic value of geometric forms, which consists of a summation of the repetition of more simple subset forms is not just based on quantitative, but qualitative. Another way to say, even in small works nothing has diminished its artistic value. This means that also in the construction of smaller houses with less financial value, geometric principles and details were used in the decorations, and the quality value of the details in the decoration of these houses was also considered.

Order and disorder in neighbouring regions

We see the same concept as in Iran in some neighbouring Islamic countries. To find the roots of these similarities, one should trace the history and cultural interactions between these countries. For example, the decorative patterns in Syria share some similarities with Iran and symmetry plays an important role in composing decorations. Of course, their decoration has its own characteristic flavour.

- calligraphy based on verses of the holy Qur'ān or verses of poetry
- floral patterns derived from stems and leaves of various plants
- patterns derived from animal forms such as birds
- geometric patterns derived from the combination of circles, squares, rectangles and triangles

Their size and furnishings depend on how wealthy the families who inhabited them were. Three categories can be distinguished: the large courtyard houses of rich families, the medium-

sized houses of traders and artisans, and the small and humble houses of workers. In other words, size and degree of decoration are the only indicators of differences in wealth between owners and occupants of courtyard houses (Zein Alabidin 2010).

Diversity and Uniformity

Despite the complex appearance of structures and Persian motifs, architecture has sometimes emerged based on simple principles (Afshar-Naderi 1995). Each component of Iranian architecture is designed as complete by itself and also these components together make up one full whole. Like regular cells, these components present a complex composition in the form of a collection. However, completeness of the component and the whole, without creating restrictions to the whole, is an important characteristic of Iranian architecture.



Figure 3-22 Variety in window details

Iranian architecture, in general, has a lot of diversity, but because the means of expressing this diversity is limited, they ultimately create a kind of uniformity of appearance, which is an important feature of Iranian architecture as well as the architecture of Iranian houses. Especially in houses, there is neither absolute variety nor uniformity, but a harmonious affinity between these two concepts.

For example, the windows of the rooms, which are all visually uniformly facing the courtyard, alone have a lot of details and complexity, however, measures have been taken to maintain

their uniformity. Another example, the size, and division of all openings follow a uniform pattern, even the number of them have considered an odd number for each opening, and by being one of the window frames in the centre for each interior view, the visual uniformity increases (Figure 3-23) (Rouzbeh, Khezrian, & Biglari, 2014).



Figure 3-23 Diversity and Uniformity

(Archives of the Cultural Heritage Organization 2008)

Diversity and Uniformity in neighbouring regions

In Syrian houses the windows are divided into two types: those located on the external façade of the house and those located on the courtyard façades. The courtyard windows are much larger and are more decorated, providing light and ventilation to the rooms. The ground floor windows facing the courtyard comprise a glass window located to the inside of the thickness of the wall and a wooden shutter, located to the outside of the wall thickness. Other types of windows can be found at the base of the courtyard. They are small, arched with no decorations and provide light and ventilation to basement floor. And most of them are formed independently and according to the use of the related space.



Figure 3-24 he traditional courtyard house in Syria. Photo taken by Mahmoud Zein Alabidin

Centrality

In old-style houses in Shiraz, centrality as one of the most fundamental concepts has always played a key role in houses. In the spatial organization of old-style houses, the central courtyard, among other spatial elements, has consistently played the role of a homogenizer and organizer rather than a neutral factor. This part, as the third part of the combination of vestibule, corridor and courtyard, plays an important role to creating privacy in forming private spaces and making them unseeable through the entrance. Generally, the courtyard has had a homogeneous and fluid nature and has acted as a link between different spaces and contributed to the continuity of space in the central courtyard houses (Amiriparyan 2015), (Figure 3-25).

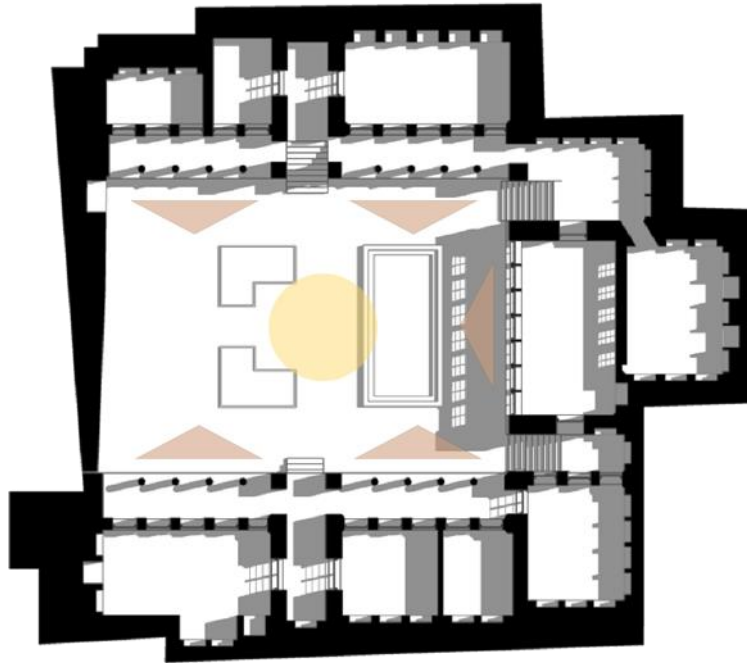


Figure 3-25 The spaces orient to the centre. Shiraz/Iran (Payamifar,2020)

Centrality in neighbouring regions

Syria: There were two courtyards in most urban courtyard houses in Syria, and the second courtyard was for the resident family, especially women. Each courtyard contained surrounding living quarters.

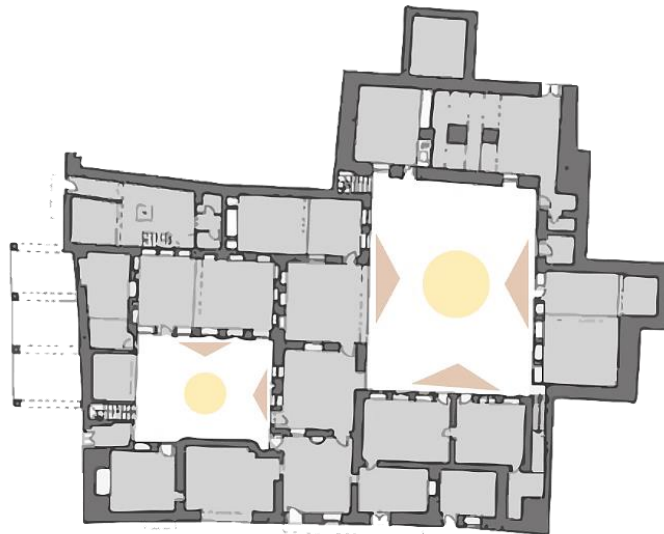


Figure 3-26 The Urban House with a Courtyard in Siria

(Yousif and Abdul Aziz 2021)

Sudan: In courtyard houses in Sudan two or more yards in a house may be divided according to their function and use, such as family and male guest yards. For example, yards in Sudanese houses are located around or between building blocks (Yousif and Abdul Aziz 2021). Interesting to know, in Iran, the building has an internal courtyard with clear centrality.

Saudi: The layout of the traditional Saudi house consists of a composite structure built around one or more rectangular courtyards. The main courtyard is usually in the middle of the house, the outer courtyards are on the periphery and have different functions than the central one. These courtyards are usually found in the houses of wealthy families who have male servants and domestic animals.

The central courtyard is the family space. Main rooms and service areas such as the kitchen, storage and staircases surround the courtyard. The central courtyard is the only connection between the family living spaces and the male guest and the servants' sections (S.Bahammam 2006).

Ambiguity

The Iranian buildings, with their simplicity, with basic or rich geometry, have shaped buildings and their message can be gleaned with a special sense of the sensation. Ambiguity is among the sustainable value of intellectual and emotional in the liminal traditional architecture (Mortazavi, Bemanian and Ansari 2018). In Iranian architecture, most designed components and forms have an external as well as an internal meaning. Complementing any external form is an internal reality which is its hidden nature. This feature arouses the searcher sense of humans and encourages him to move in space and find hidden meanings in architecture. For a newcomer, this feeling arises as soon as he passes the entrance and enters the vestibule space, and the presence of screwed corridors intensifies this feeling. This is the strange story of the mysterious Iranian architecture that works with the simplest of materials on the regular ground and its mystery and ambiguity to the followed function impels humans to think again. All of them are abundantly dramatic of symbolism, which clearly influences the building, and

components of the building take their symbolic concepts from them and transfer them to another audience at a different level. (Diba 1999).

Diba also mentions the vestibule as a middle boundary that regulates the boundaries of visible and accessible areas and connects the interior and central space. He refers to hierarchy as the ambiguity of complex composition and describes it as follows:

In the maze of Iranian architectural buildings, space is never defined obviously, and its ambiguity and complicated composition are because of the value of spaces that cannot be interpreted as a known space. Vestibule includes accesses that indicate other spaces within it and moving in any direction is moving to another part of the space with more generalities.

Balance

Balance or symmetry is as a way of regulating, meaning the similar sectors, revolves around or center of symmetry. In fact, balance refers to the sense of harmony, coordination, and beauty. Among the aesthetic principles of old-style Iranian houses that can be considered are the balance and rhythm in plan and in the view of the interior courtyards. To maintain symmetry in the central courtyard, the openings around the courtyard are usually of the same proportions, and the entrance position is located where it does not affect the openings inside the courtyard and is connected to the courtyard through a corridor with opening according to others (Figure 3-27).

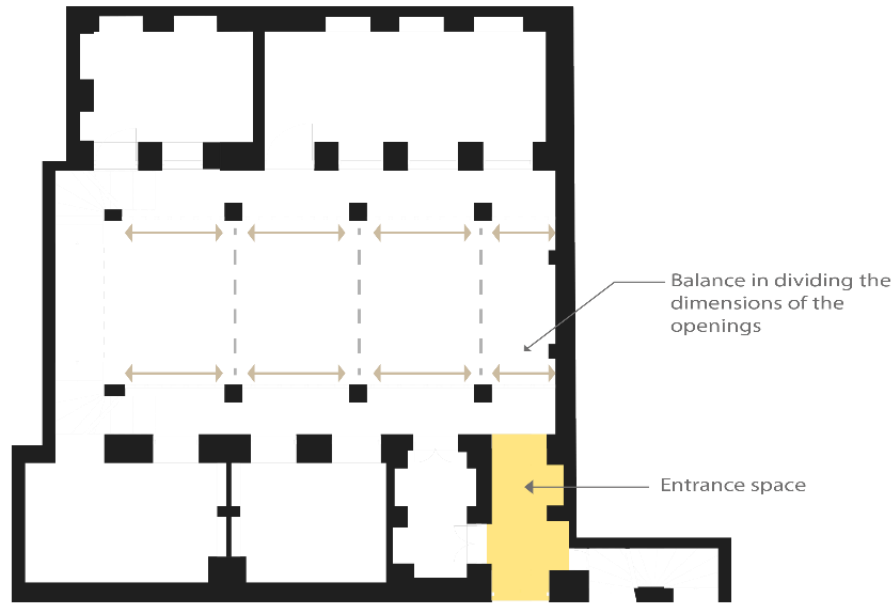


Figure 3-27 Balance in openings (Payamifar,2020)

Variety

Despite of racial and cultural differences among people of different parts of Iran, through time, some new kind of architecture was created which had extensible unity and similar features in all of its parts. However, aside from this unification, it displays great variety, both structural and aesthetic, from a variety of traditions and experiences. And because of this, diversity has been created on a micro and macro scale. The use of arches, the play of light and shadow, plants, and the use of symbolic elements have all support and enrich the concept of variety (Hosseini and Zand Karimi 2012). For example, the presence of the main elements of the entrance can be seen in all traditional houses of Shiraz, but the form and details are not exactly the same, and each of them has its own unique features as a work of art.

Harmony with nature

In a well-defined courtyard the two natural elements—earth beneath and sky above—ensure direct contact with nature. It has always been an important aspect of the comfort of a courtyard to include some monumental tree or a calm and cool pond. Iranian architecture and urban planning have a two-way relationship with nature. In Iranian cities, the buildings have a central courtyard, the centre of the courtyard usually has a pool of water, often with a fountain

in the middle, and gardens surrounding it. The garden contains flowers, vegetables, and fruit trees. Besides a comfortable produced by evaporative cooling, the pool and garden create a pleasing aesthetic atmosphere (Kheirabadi 2000).

Paying attention to nature in old-style houses shown in (Figure 3-28).



Figure 3-28 Paying attention to nature in old-style houses

(Archives of the Cultural Heritage Organization 2008)

The materials used in construction are natural materials, especially clay. The orientation of buildings is such that it has the best use of natural factors (sun, wind, and rain). By inventing elements such as windcatchers and spaces such as naves and sheds natural threats have turned into opportunities. Often old-style architecture will have a space known as an 'Iwan'. The iwan is a space within the building where one side is entirely open to the outdoors, typically a courtyard. This open side of the semi-enclosed rooms allows for light to enter the iwan and the spaces beyond. Most typically iwans are located on the south side of courtyards with the open side of the room being to the north. This allows for the iwan to harness the indirect light of the northern sky without having direct light enter in (A'zami , Yasrebi and Salehipoor 2005) (Figure 3-29).



Figure 3-29 Iwan in the south side

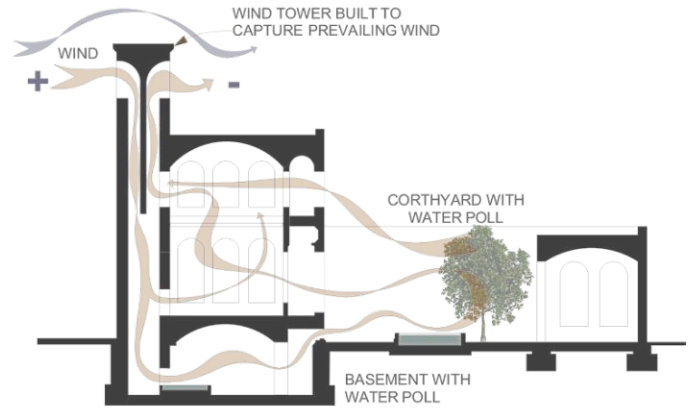


Figure 3-30 Windcatcher system in historic houses

Wind-catcher (Badgir) in old-style buildings in dry regions functioned like the present air-cooling system. Wind-catcher is like a chimney which has a height from underground to specified height on the roof and the bottom of it located over water ponds which built inside the underground. The working process of a windcatcher is much like that of water coolers. When a breeze enters a wind-catcher it is directed to above a water pond. After being exposed to water and evaporation (a heat-absorbing process), which results in a cool breeze, it is directed to the summer rooms (Shojaei and khodayari 2011), (Figure 3-30).

Harmony with nature in neighbouring regions

Green space and nature play an important role in Syrian backyard houses, just like in Iran. The transition from outside to inside is marked by a contrasting spatial experience, from a plain entrance to a richly decorated open courtyard with a central fountain and beautiful landscape. Plants mainly fall into two categories: ornamental plants such as climbing jasmine and rose bushes that add colour and fragrance to the courtyard atmosphere, and citrus trees such as orange and lemon (Zein Alabidin 2010).

Dignity

Maintaining the dignity of the family and paying attention to the principles of privacy has been one of the most obvious manifestations of religious and cultural principles in Iranian

architecture and urban planning, in such a way that the neighbours' view of the inner space is covered. At the same time, at the entrances of the houses, different percussions indicate the gender of visitors. The formation of interior and exterior spaces and spatial hierarchy and the consideration of a space called vestibule at the entrance in order to keep the interior spaces of the house from arrival's sight are some of the results of this architecture. The ergonomic of Iranian architecture and the proportion between building organs and human organs are other examples of dignity.

Waste avoidance

The limitation of natural resources has led to an approach in which design and execution are done with minimum wastage and special attention to avoiding any profusions. Living and working spaces are also provided just as needed.

Multifunctionality

Iranian old-style architecture spite of the rigid physical structure has been able to respond to changes. Nested spaces, multiple entrances for each space, selective connect ability and disconnect ability, and above all multifunctionality enable houses to create a wide variety of spatial configurations. This flexible spatial configuration lets Iranian old-style houses rearrange themselves according to changes without changing the main structure and form of the house. The diversity of spatial configuration enables houses to cover predictable and unpredictable scenarios.

Spaces and elements in Iranian architecture and urban planning are not only to provide a specific function but also to answer a set of needs at the same time. Such a feature strengthens the functional, semantic, and technical value. For example, the central courtyard of Iranian introverted houses can be mentioned. The yard in these houses is at the same time a factor in ensuring privacy and maintaining family dignity and self-esteem, a factor in creating a mild climate in the face of adverse outdoor conditions, a factor in establishing a relationship between women/men and nature, water, light, and plants, and also as a factor in creating spatial order in the home and arranging small and large components and spaces around. The flexibility of spaces is another example of this feature. The spaces of the house are named not according to function, but according to their architectural qualities, and depending on the

spatial characteristics and dimensions, they have received different functions at different hours of the day, and at the same time they have the ability to expand. The old-style Iranian houses in hot and dry regions were designed based on the simple climatic principle; avoiding the sun on hot days and taking maximum advantage of solar heat on cold days, for this purpose the old-style houses provide a flexible spatial configuration to let the user move between spaces.

These movements can be performed in two ways: daily and seasonally, and from a spatial point of view: vertically and horizontally, (Figure 3-30); (Estaji 2014).



Figure 3-31 flexibility of spaces (Estaji 2014)

Privacy in Iranian houses is originated from Iranian culture and Islamic beliefs and since all the spaces around a central courtyard are connected to each other with doors, they manage the social interaction between family members and guests by separating the private and reception areas, (Figure 3-32) (Estaji 2014). Or, if necessary, would create two separate spaces for two independent families, by closing the doors between two parts. Also, in another

functional change by opening all tall windows and connecting the rooms to the Iwan a large communal space was preparing for guests in summer.

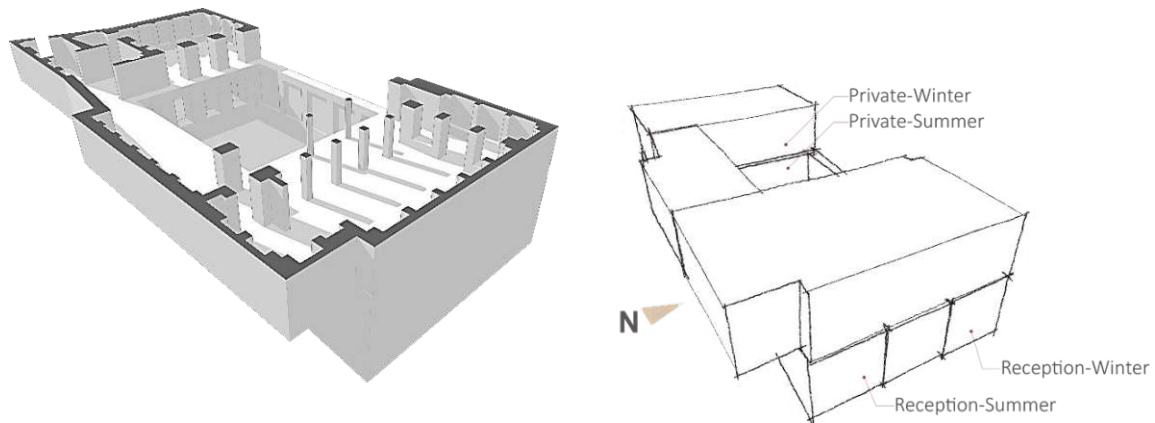


Figure 3-32 flexibility to use different spaces in different seasons and control privacy. (Payamifar,2020)

Elements such as vestibule or entrance corridor while creating an intermediate space between outside and inside and as a transferor from public and semi-public space to home's private space, as well as be an independent space for meeting and talking with neighbours (Ashaghi, Bayat and Forouzandeh 2014).

Privacy

The term “privacy” is used frequently in ordinary language as well as in philosophical, political, and legal discussions, yet there is no single definition or analysis, or meaning of the term. The concept of privacy has broad historical roots in sociological and anthropological discussions about how extensively it is valued and preserved in various cultures. Moreover, the concept has historical origins in well-known philosophical discussions, most notably Aristotle's distinction between the public sphere of political activity and the private sphere associated with family and domestic life (6th century BC). Yet historical use of the term is not uniform, and there remains confusion over the meaning, value, and scope of the concept of privacy (Wagner DeCew and N. Zalta 2015).

Based on Altman`s definition of privacy, this concept is an option that a person determines for managing his/her availability Irwin, & Chemers, (1984). Newell defines privacy as the temporary separation of human and public places based on ownership rules. He believes that

changing human conditions in private and public places is because of its innate distinction. Therefore, sociologists called privacy a border between individuals, others, and the environment that people empowered to limit or spread the borders (Faahi, 1995). Meanwhile, Mortada (2003) maintains privacy as a religious concept for gender separation and the separation between private life and public interaction (Razali and Talib 2013).

Privacy is vague and ambiguous, and a precise conception cannot be determined because any such conception is bound to reflect the ideas of a particular society at a given time. This term is usually used in at least four different senses: freedom to select seclusion, freedom to engage in undisturbed intimacy with a group of selected individuals, freedom to remain anonymous to others, and freedom to remain protected by not revealing any personal information (Forgas, 1994). Consequently, sustaining one's privacy can help counterbalance the power imposed by other individuals in a high social status (Alitajer and Nojoumi, Privacy at home: Analysis of behavioral patterns in the spatial configuration of traditional and modern houses 2016).

Usually, privacy is an interpersonal happening those deals with interaction among people. The key point about the concept of privacy is the ability to control people or groups in visual or audio interactions. In this regard, there are various theoretical approaches to privacy analysis. Based on Westin (1970), the first type of privacy is loneliness, which means the person takes full advantage of his privacy. He considers closeness and intimacy as the second type of privacy. This type of privacy is more sensible in cases like the closeness of family members. From another view of point, Altman, and Werner (1985) believe in human's tendency to set their closeness and distance with others and consider any imbalance in this relationship as undesirable. Moreover, Ittelson, Proshansky, and Rivlin (1970) conclude that the important and effective factors in privacy facilitate controlling and restraining space - or territory- and determining the condition of the territory. Additionally, based on Rapoport (1980), privacy is the process of setting a boundary between people and it determines how a person interacts with others. Margulis (2013) also analyzed privacy and maintains that this concept as a sectional and sometimes holistic phenomenon controls the individual and the other people's relationship. Anyhow, privacy is taken from cultural and religious values and beliefs which are among the rules of old-style residential architecture which have been shown in different ways

in traditional architecture (Kazemi Zahrani and Tabaeian, The Comparative Study of Privacy in Designing Qajar Dynasty Isfahan`s Houses and Malaysia`s Traditional Houses 2016).

Privacy in the architectural environment means “space creation” in a way that it would be private from both framework and meaning aspects. Having privacy in the spatial framework is based on the principles which cause the formation of spatial security, from the meaning aspect, refers to the characteristics that bring value for the architectural spaces in a way that it causes the person to be in peace (Mahdavinejad and Mashayekhi 2011).

The traditional architecture in the cities of Iran was responsive to the residents’ religious requirements and high levels of privacy. In introverted houses, all functional spaces and activities were arranged around the courtyard, windows opened to the courtyard without direct visual interaction with outward space, whilst the vestibule acts as a transitional space and represents the privacy characteristics of the old-style houses; family activities can take place in this courtyard in complete privacy from adjoining dwellings. In all of these houses, there is a definition of a place of privacy for the family (Julaihi and Khozaei 2008).

Visual privacy is defined as the ability to conduct everyday activities at home without being observed by outsiders. The importance of visual privacy differs from culture to culture, and in Islam. Anyhow, it is an important concern in society. One of the used principles in designing Iranian houses is availability hierarchy (Kazemi Zahrani and Tabaeian, The Comparative Study of Privacy in Designing Qajar Dynasty Isfahan`s Houses and Malaysia`s Traditional Houses 2016). The hierarchy, building spaces layout, openings, balconies, and entrance characteristics are considered as the most important factors that have an effective impact on different levels for achieving privacy (Khozaei 2008).

The observance of privacy is one of the characteristics of the Iranian Islamic lifestyle, which, in the case of houses, is provided by paying attention to the principle of introversion (Mousavi, Tabassi and Mehdizaheh Seraj 2020).

Privacy, which is an important psychological feature of any home, plays an essential role in providing comfort to family members and ultimately the comfort of the neighbourhood and community. This concept has been well considered in old-style Iranian houses and traditional planners have tried to meet this need by using various measures, unlike what has happened in

today's Iranian architecture, which is ignoring privacy and visual security in buildings. Undoubtedly, paying attention to the pattern of traditional architecture and preserving its values in contemporary architecture can have a great impact on improving the quality of today's houses and providing users' satisfaction.

Social, cultural and religious factors have played an important role in the shaping of the courtyard house for more privacy in Iran and Arab countries. The need for privacy has had a paramount influence on the inward organization of spaces and the treatment of the entrance, the external windows and the separation between family and guest areas within the house (Zein Alabidin 2010).

Home as a safe and relaxing shelter is one of the most basic issues that human beings have always faced and are looking for a logical and appropriate solution to provide it. Man has used different factors, concepts, and elements in different times and places to achieve this goal. The concept of privacy has not received much attention from designers and architects compared to the physical and material ones. This means that designers pay more attention to the form and physical connection of the designed spaces than to the privacy. For example, in designing the communication between the inside and outside spaces, such as the entrance door of a unit in a residential apartment, there is not enough attention paid to the issue of privacy in its design. In recent years, due to the growing population and consequently, more contacts and tensions between people, the need to address the concept of privacy seems more necessary. Privacy means humans need to have the necessary and sufficient control and supervision over their relationships with others. Therefore, people use special tools and behave in a particular manner to achieve the desired privacy, depending on their social, cultural, and even age conditions, one of the most important of which is the proper design of the living environment. People are always trying to achieve a desirable level of privacy in their activities, and one of their dissatisfaction reasons with today's built residential spaces is the lack of response to this demand. As a result, it becomes necessary to understand the meaning and concept of privacy and to study its effect on shaping the space in which we live.

Privacy in neighbouring regions

The need for privacy in Islam has had a paramount influence on the inward organization of spaces and the treatment of the entrance, the external windows and the separation between family and guest areas within the house (Zein Alabidin 2010).

Saudi society's forms of privacy are the result of deeply held religious teachings. The Muslim woman is not allowed to reveal her figure to anybody other than her husband, family members, and/or close women friends. Two forms of privacy that affect the shape and the design of the Saudi traditional dwelling are female privacy and family privacy (S.Bahammam 2006). This viewpoint is also reflected in the Saudi traditional built environment. For example, the high walls in the courtyard houses of Saudi Arabia make the courtyard and the surrounding living space a completely private space for the family. So that it is not possible to see the yard even from the second floor of the building next door (Figure 3-33).

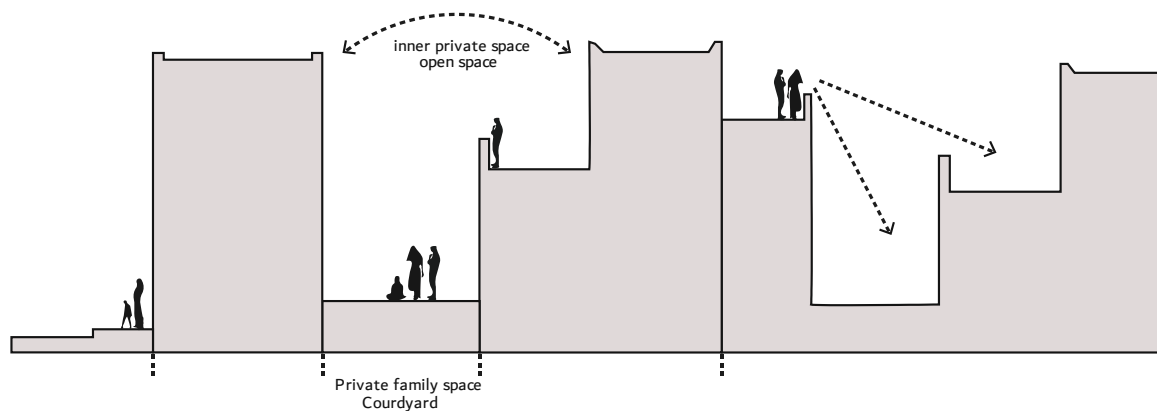


Figure 3-33 A section through adjoining houses showing how setbacks are used to maintain privacy between neighbours (S.Bahammam 2006)

Traditional Sudanese house design does not prioritize individual privacy, preferring to consider privacy from a general zoning perspective, whereby non-mahram male guests should be kept out of the family circulation area. At the same time, females are allowed to enter the male zones in the presence of mahram relatives (Yousif and Abdul Aziz 2021). There are two external entrances in traditional Sudanese courtyard houses, one for males and one for females. The courtyard is carefully designed to ensure privacy by using a short corridor or screening wall, which acts as a space filter so that visitors cannot see into the house, even if

the door is left open to create an indirect entrance. Entrances are identified by size and location. Typically, the male guest yard has a double door entrance and a secondary single door entrance facing females' backyard or service area. To maintain the visual privacy of the female domain area, these two zones are physically separated but are connected by an internal door or free-standing walls or plants, such as in (Figure 3-33)

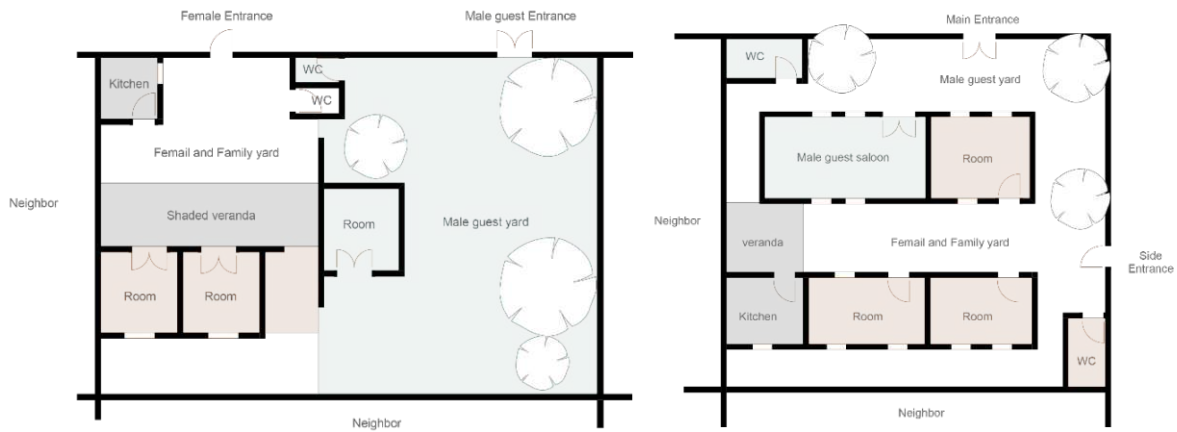


Figure 3-34 Traditional Sudanese courtyard houses

The concept of privacy and its functions at home:

All traditional architecture has a cultural base (Norberg-Schulz, 1993; Rapoport, 1990). Cultural values are qualities that are essential for building houses and sustaining them over time. In this regard, one of the most vital values supported by religion and beliefs is privacy. This implies that privacy is a very important feature of cultural values within architecture.

Considering (Figure 3-35) - part “A”, privacy is derived from the second layer of culture (see part “B”) and emphasise its importance.

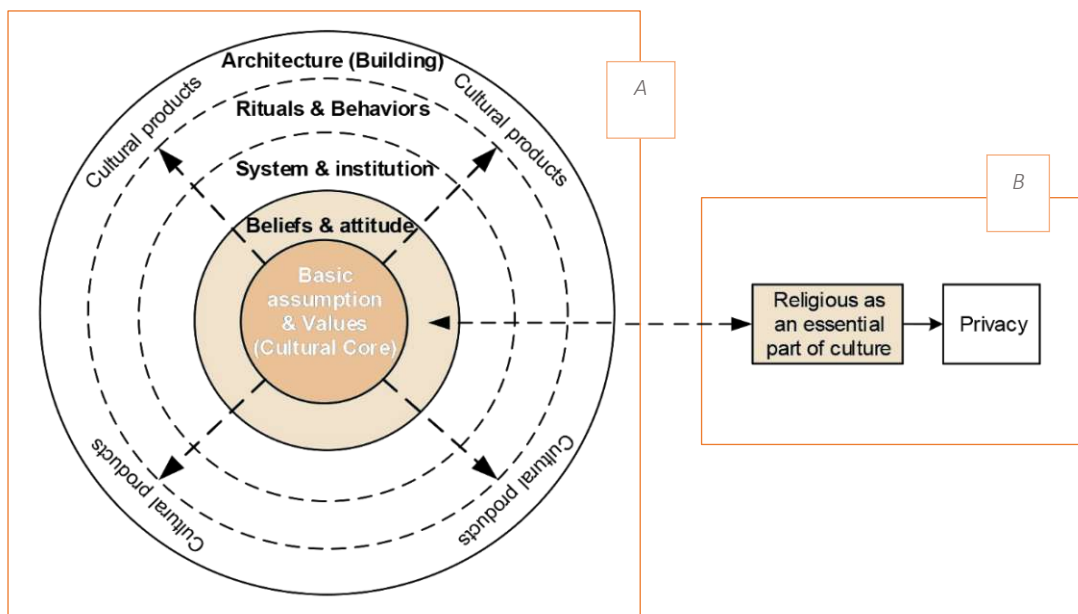


Figure 3-35 The position of privacy within cultural layers ((Nayyeri Fallah and Khalili 2015))

But cultures are different in different societies, and accordingly privacy has been interpreted differently and is given different definitions. In the definitions of some researchers of privacy as a concept, more emphasis is placed on isolation and withdrawal and lack of interaction. Privacy is influenced by personal factors and situation. It is also inextricably linked to other important behavioural processes (Mortazavi, Abyaznezhad and Fallah 2015).

Four major functions can be mentioned for privacy (Emami 2015):

Individual independence

The first function of privacy is individual independence, the central axis of which is individuality and important issues of individual values, independence, and identity

Sense of autonomy

Privacy is closely linked to our sense of autonomy. The ability to choose isolation and solitude with others creates in us the power to make decisions, and the lack of such an ability leaves us feeling helpless.

Sense of identity

Privacy is important to our sense of identity. Isolation, intimacy, and closeness can be used to evaluate and improve our lives

Emotion release

Privacy allows emotions to be released. In solitude we can cry, read the poems madly and talk to ourselves.

Features and characteristics of privacy

Differences in privacy tend to be rooted in individual characteristics, social status, physical environment, and culture (Diagram 3-14 **Fehler! Verweisquelle konnte nicht gefunden werden.**). Some people need more privacy due to different cultures and personalities and express their desire for privacy differently than others. Social status and physical environment also lead to a different level of a tendency to privacy (Borhanifar, et al. 2020). In other words, the individual or group chooses mechanisms based on individual characteristics, socio-cultural context, and physical environment characteristics, and through it, they achieve their desired privacy (Altman and Chemers 1980, 319-327).

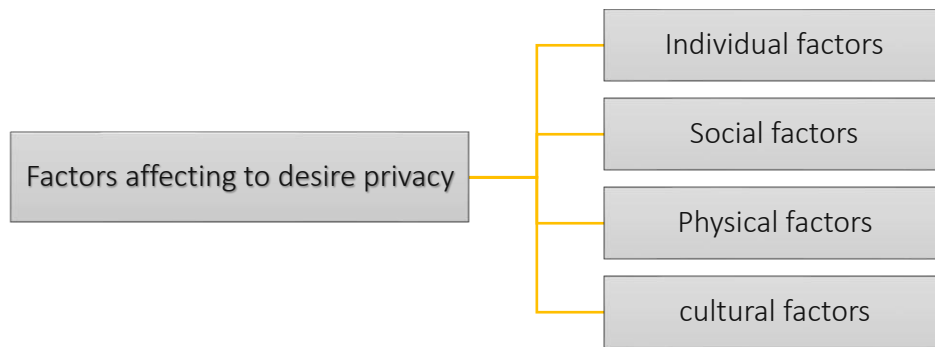


Diagram 3-14 Factors affecting to desire privacy

Controlling activities to balance the amount and manner of communication with others reflects the concept of privacy and has two important aspects: desirable privacy and obtained privacy. If these two are equal desirable privacy is the ideal level of interaction with others, and the privacy gained is a real level of interaction with others (Borhanifar, et al. 2020) The level of privacy is not fixed and depends on the requirements and demands of the inhabitants of that space. According to (Gifford 2002, 39-41), when the amount of privacy exceeds the desired level, the person becomes separated from others. In other words, this person suffers from social isolation or loneliness. On the other hand, if the level of privacy obtained is less than the desired level, the result is that the individual's monitoring of social interaction is inadequate, and the person is overcrowded. It seems in the residential architecture of the houses in the central courtyard of Iran, an attempt has been made to define the level of privacy in the best possible way. The features of privacy in old-style houses are visible in (Diagram 3-14), (Emami 2015).

Privacy in Iranian houses

The role of privacy in old-style and contemporary houses is exemplary and as follows. This investigation is focus on middle class urban houses of shiraz.

Privacy in old-style Iranian houses

As mentioned before, after reviewing most of the available homes, the houses that were considered for case study are houses belonging to the middle social class, within the city of shiraz limits. One of the most important principles which are considerable in Iranian old-style

architecture, especially after Islam, is the principle of privacy (Heydari and Ghasemian 2019). This cultural value is much related and influenced by the physical environment where people live. In this regard, religion affects the form, plan, spatial arrangements, and orientation of the house. In determining the nature of religion, it can be said that merely one of the cultural choices possible. Since religion forms an essential part of cultures (Rapoport 1969, 49). Since religion is an integral part of the culture, this means that the physical context can be a situation that is shaped in accordance with cultural patterns and the wishes of the inhabitants.

Privacy as an intangible aspect of culture along with both physical and socio-cultural factors has played a major role in the spatial organization of old-style Iranian houses and formed the access hierarchy in the interior spaces (Nazari and Olgaç 2021).

As a result, achieving privacy in a house requires the interior space to be invisible to strangers and the spatial configuration to be appropriate to provide efficient communication within the house (Alitajer and Molavi Nojumi 2016).

The introversion and attraction of Iranian architects towards courtyards, patios, sunken courtyards, vestibules, and pergolas that are surrounding the naves by charming and familiar environments have long been part of the logic of Iranian architecture. Also, under the influence of Islamic religion, ideas and laws have affected various aspects of life and culture, including architecture. Privacy is one of the concepts and elements that are effective in designing and organizing architecture and urban planning. Spatial hierarchies (step-by-step movement from the alley or street to the entrance space of the house and then private spaces), as well as the internal and external system, have been among the necessary measures to provide the desired privacy. (Figure 3-36)

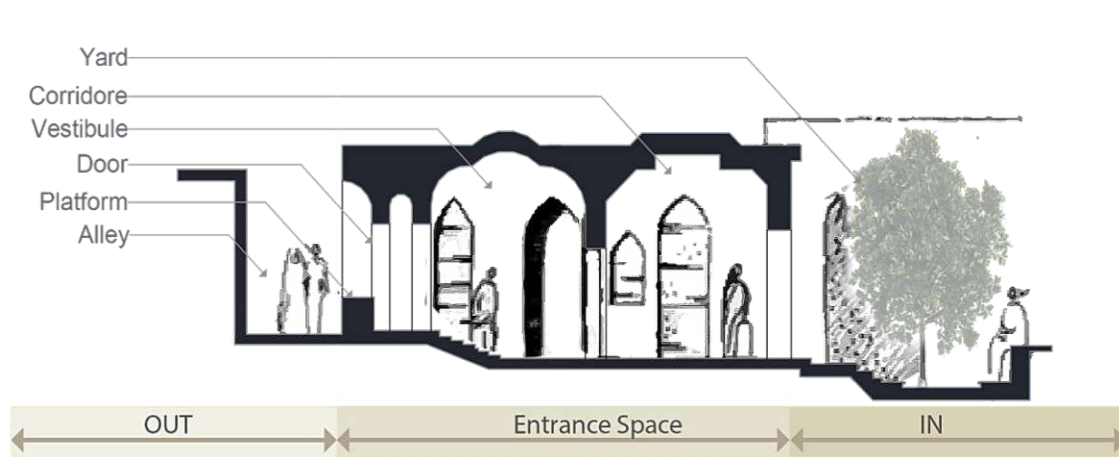


Figure 3-36 The hierarchy of the entrance of Iranian traditional houses. (Payamifar,2020)

Also, the organization of the house in an introverted way, in addition to the influence of climatic and security factors, has been largely influenced by religious, and social factors.

The separation of internal and external zones is one of the most obvious manifestations of these factors in introverted architecture. In this type of architecture, the inner zone is separated from the public zone for a specific social or religious function (such as mosques, schools, etc.) or the interior space of residential units has been isolated as a private space for family life physically and perceptibly.

As mentioned in the Figure 3-37 the connection between the outer and inner zones is often established by articulated elements or transitions. To reach the centre of a residential unit, one should first move from the main alley as a public zone to a dead-end alley that acts as a semi-private zone, and then enter the central courtyard through a vestibule and a corridor with a human scale. The mentioned sequence with its spatial diversity creates a special perceptual quality. Feeling and perception of different areas is a device for a specific explanation of space design and creating a hierarchy in the entry and communication of zones.

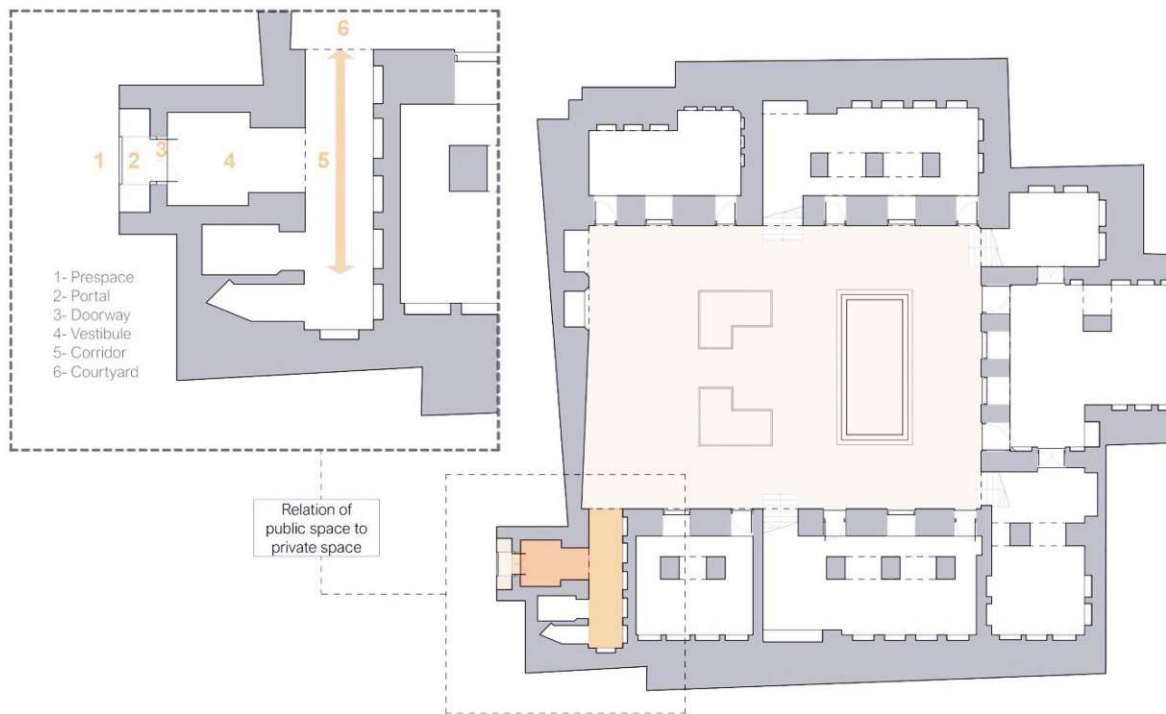


Figure 3-37 Analysis of the components of the connection between public space and private space. (Payamifar,2020)

The entrance hierarchy in Iranian houses is as follows:

Most of the houses, especially the luxurious ones, had portals and side platforms in front of the entrances which created a suitable space for those who intended to meet the owner but did not have to enter the house. In old-style Iranian houses, different tools have been used even for knocking so that the owner can identify the person behind the door. There were two metal elements on most doors, a ring for women and a knocker for men.

The connection between the inside and the outside was not as it is today. The visual privacy of the residents was completely provided. The design of the houses was often introverted, meaning that there were no windows from outside the house and natural light was provided through the central courtyards or ceilings.

On the urban scale, the neighbourhoods were designed in such a way that the different uses are separated desirably and appropriately and did not interfere with each other. In traditional urban spaces, alleys had the role of mazes that covered the sights. These turns create private zones along public paths.

The division of men and women

Gender structure, expressing power relations between men and women in society, shapes the masculine and feminine identities as crucial parts of our human status. Since antiquity, gender structure has been regulated by patriarchal social orders based on unequal power relations nearly throughout the world. It is almost generally accepted that “. . . patriarchy refers to the system in which men as a group are constructed as superior to women as a group and so assumed to have authority over them” (Mcdowell 2001). The system, probably the main cause of women’s oppression, is still quite powerful in many parts of the world, deeply rooted in local cultures and faiths. The relationship between “gender” as a social construct and “space” as a physical one has been thoroughly delineated by different scholars (e.g., Ardener 1997; Doerhoefer, 2003; Durning & Wrigley, 2000; Hills, 2000, McDowell, 1996; Rendell et al., 2000; Terlinden, 2003; Torre, 2000). However, studies on this interconnection have led to the fact that gender is constituted differently in different spaces, because “social life takes place in and through space” (Pratt & Hanson, 1994, p. 6). Social organization differs from area to area and from city to city, not only in different parts of the world but also in different parts of a country or region. The same point holds true for gender. In other words, the gender power relations and the extent of patriarchal oppression are also differentiated in different places. Therefore, “. . . there is a clear geography to gender relations . . . in the extent of women’s subordination and relative autonomy, and correspondingly in male power and domination” (McDowell, 1999, p. 12). (Sadoughianzadeh 2013)

Women in ancient Persia have also followed a patriarchal paradigm but, within that framework, women had more rights and responsibilities in compared to many other ancient civilizations. In the Achaemenid Empire, women, like men, were defined by social class and rank within that class. Classes were defined as: “Royal and Noble Women”, “Military Women”, “Businesswomen” and “Labourers, Servants, and Slaves”.

It is interesting to note that even by “Labourers, Servants, and Slaves” classes, there was no difference in pay based on gender; one's salary was based solely on one's level of skill and experience in the job. Pregnant women, however, received higher wages as did new mothers for the first month after the birth of their child.

Knowledge of women during the Parthian Period is not as complete as those of the Achaemenid Empire because of the destruction of so many records and works when the empire fell to the Sassanians in 224 CE. The Sassanians kept the Achaemenid policies regarding women's place in society but allowed for greater freedom of expression and autonomy.

When the Sassanian Empire fell in 651 CE, the social class system and women's status changed with it (Mark 2020).

After the invasion of Iran by Arabs, it was a long process by which Islam was gradually accepted by the majority of the population. On the other hand, Iranians have maintained certain pre-Islamic cultures, and adapted them with Islamic codes. Finally, these two customs and traditions merged as the "Iranian Islamic" identity (Lewis 1999).

The Quran commands both men and women to dress modestly and not display their bodies, and Muhammad asserted that modesty is a central character trait in Islam. In the specific context of women, the Quran, "Surah 24 AL-NOOR (THE LIGHT)": Verse 31"²¹ speaks of covering women's "ornaments" from strangers outside the family.

Within the context of Islam and application of the Quran, Surah 24: AL-NOOR (THE LIGHT)", the pre-Islam status relation between woman and men was influenced enormously. This change had a direct impact and influence on understanding and interpretation of privacy in Islamic culture.

Privacy in contemporary Iranian houses

Technology has changed the relationship between streets and homes or public and private spaces in most cities. The residence now creates a relatively private space. In today's world in contemporary Iranian architecture, the walls and doors of Iranian homes are perhaps the most common mechanisms used to manage privacy, and in most cases, no attention has been paid to this issue and no specific solution has been considered to maintain and secure it. Today, in

²¹ And tell the believing women to lower their gaze and guard their chastity, and not to reveal their adornments¹ except what normally appears.² Let them draw their veils over their chests, and not reveal their 'hidden' adornments³ except to their husbands, their fathers, their fathers-in-law, their sons, their stepsons, their brothers, their brothers' sons or sisters' sons, their fellow women, those 'bondwomen' in their possession, male attendants with no desire, or children who are still unaware of women's nakedness. Let them not stomp their feet, drawing attention to their hidden adornments. Turn to Allah in repentance all together, O believers, so that you may be successful.

residential complexes, neither visual privacy is provided, nor audio privacy is in a favourable condition. Windows are facing each other and have a direct view of the other so that the residents of the houses have to use curtains permanently in order to maintain their privacy from the sight of adjacent tall buildings, which are examples of encroaching upon each other's privacy.

The location of the entrance doors of the apartments is also such that if the door is open, any passer-by can easily look through the house. Nevertheless, there is no favourable situation in terms of auditory privacy. The walls between apartment units and public areas such as skylights and backyards are unable to prevent the transmission of sound between different zones and cause the dissatisfaction of residents with the disturbing noises around and also the lack of auditory privacy for themselves. Today's tall buildings overcast the shorter buildings around them, and beyond their encroachment, they deprive them of natural light and sunshine and disrupt the comfort and tranquillity of their neighbours.

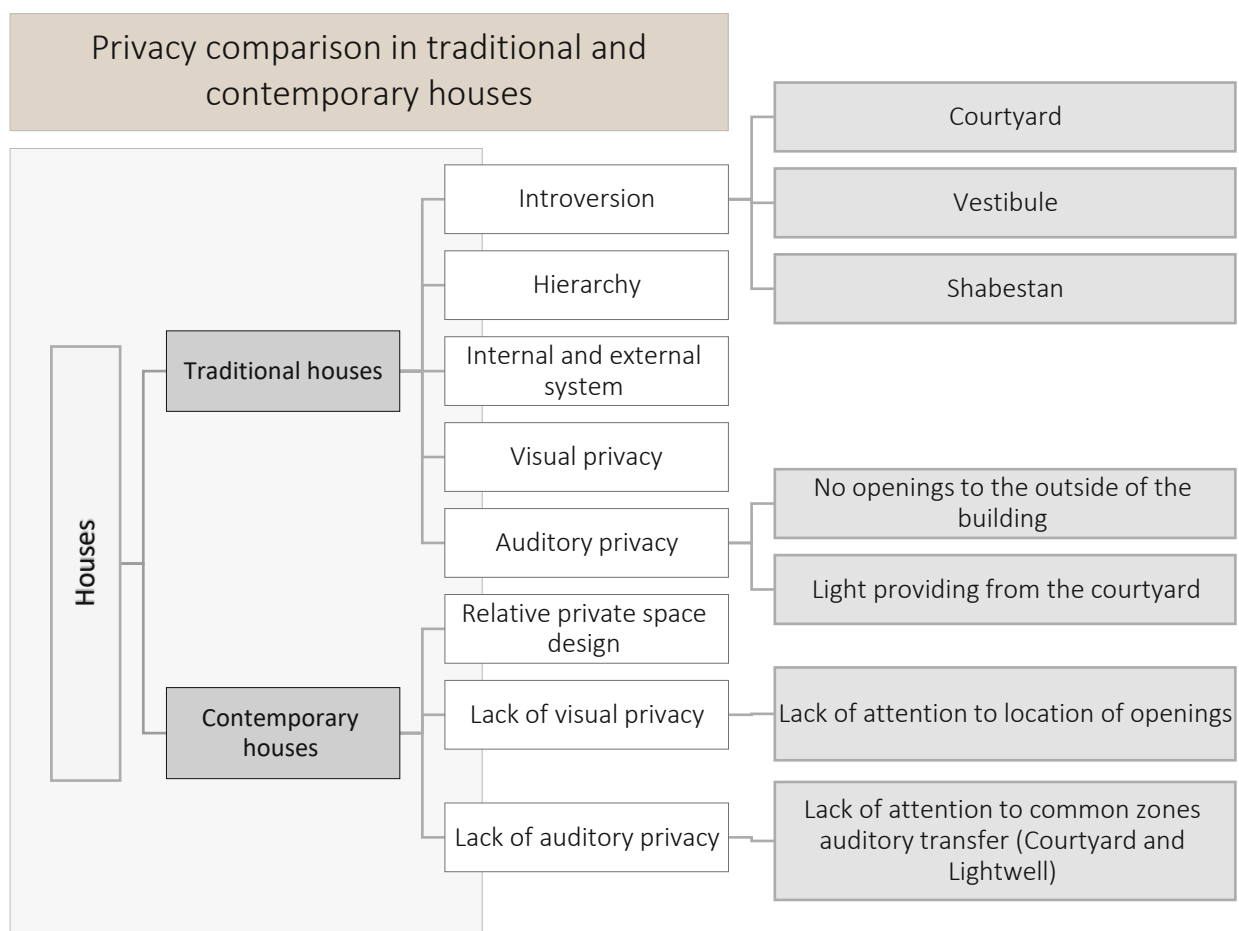


Diagram 3-15 Privacy comparison in traditional and contemporary houses

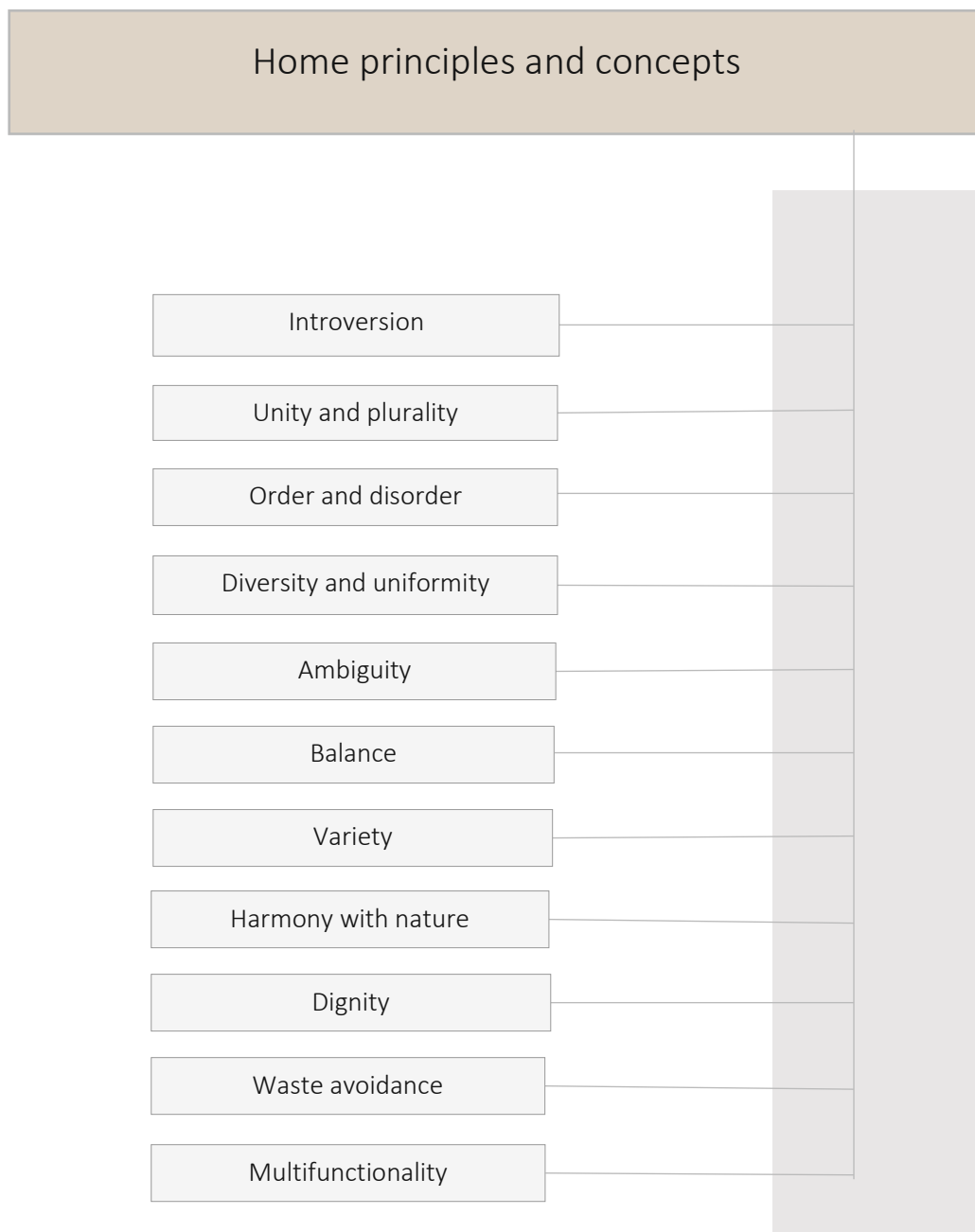


Diagram 3-16 Home principles and concepts

(Table 3-4) presents an overview of the principles of their appearances.

Principles	Appearances
Introversion	Interaction between outside and inside, simulate outside in inside
	Creation Concentration and accumulation
Unity and plurality	Each element, form, and space are comprehensible
Order and disorder	Using simple geometric combinations
Diversity and	Diversity with limited expression tools to achieve appearance uniformity
Centrality	Consideration of central pool and courtyard
Ambiguity	Symbolic meanings revealed through interpretation
Visual balance	Using local materials
	Using visual balance between spaces, facade, and components
Variety	Using multiple elements
	Playing with light and shadow
	Consideration of green zones
Harmony with nature	Using a green zone inside the house (courtyard)
	Predominantly using local and natural materials
	Attention to climate
	Innovation in converting natural threats to opportunity
Dignity	Limitation of neighbours view into the living area
	Using different knockers, according to the sexuality
	Space hierarchy
Waste avoidance	Providing living space and activities as needed
	The minimal approach in design and execution
	Avoiding profusions
Multifunctionality	The flexibility of home spaces between functions
	Providing a collection of needs
	Designing expandable spaces
Privacy	Providing comfort
	Privacy and visual security
	Introversion
	Control over relationships with others
	Observance of hierarchy in the entrance and other zones

Table 3-4 Home principles and appearances

According to the above, the factors influencing the design of housing units have been identified, which are visible in the (Diagram 3-17) (Baradaran Tavakoli, Tafrishi and Abbaspour 2017).

Factors affecting the house design	Economic Role	Making sure there is enough land infrastructure in the right places to support growth and innovation.
	Social role	creating a high-quality built environment with accessible local services and the homes to meet current and future needs.
	Environmental roll	protecting and enhancing our environment using natural resources wisely and minimizing waste and pollution.

Diagram 3-17 Factors affecting the house design.

3.2.5 Entrance

The formation of the entrance can lead to the creation of a favourable environment and the achievement of valuable principles in housing. The entrance has many implications, issues such as accessibility, impact on the urban landscape, aesthetic, security, privacy, climatic comfort, environmental tranquillity, vision, invitation, and tradition which is also influential in this regard and to design a desirable residential environment.

The purpose of designing the entrance of a building is to achieve the meaning of desirability, which is possible by considering the concepts in (Diagram 3-18).

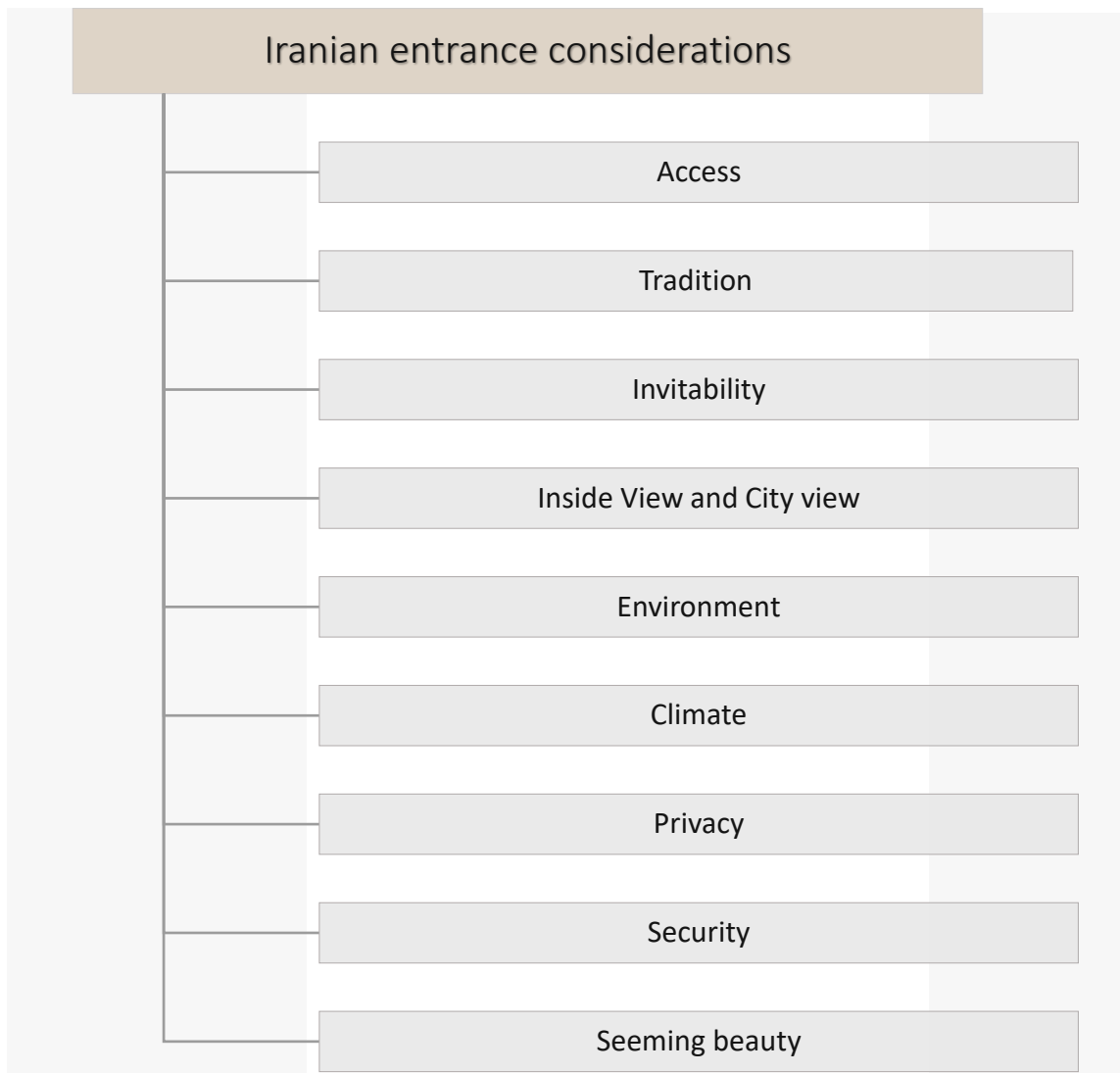


Diagram 3-18 Iranian entrance considerations

Each entrance has perceptual and functional roles. The perceptual roles include flexibility, legibility, caller, effectivity, access path formation, symmetry, and axis, while functional roles are providing and monitoring communication, controlling, providing connection between outside and inside, creating privacy, hierarchy, and gathering space, all of which are shown in (Diagram 3-19).

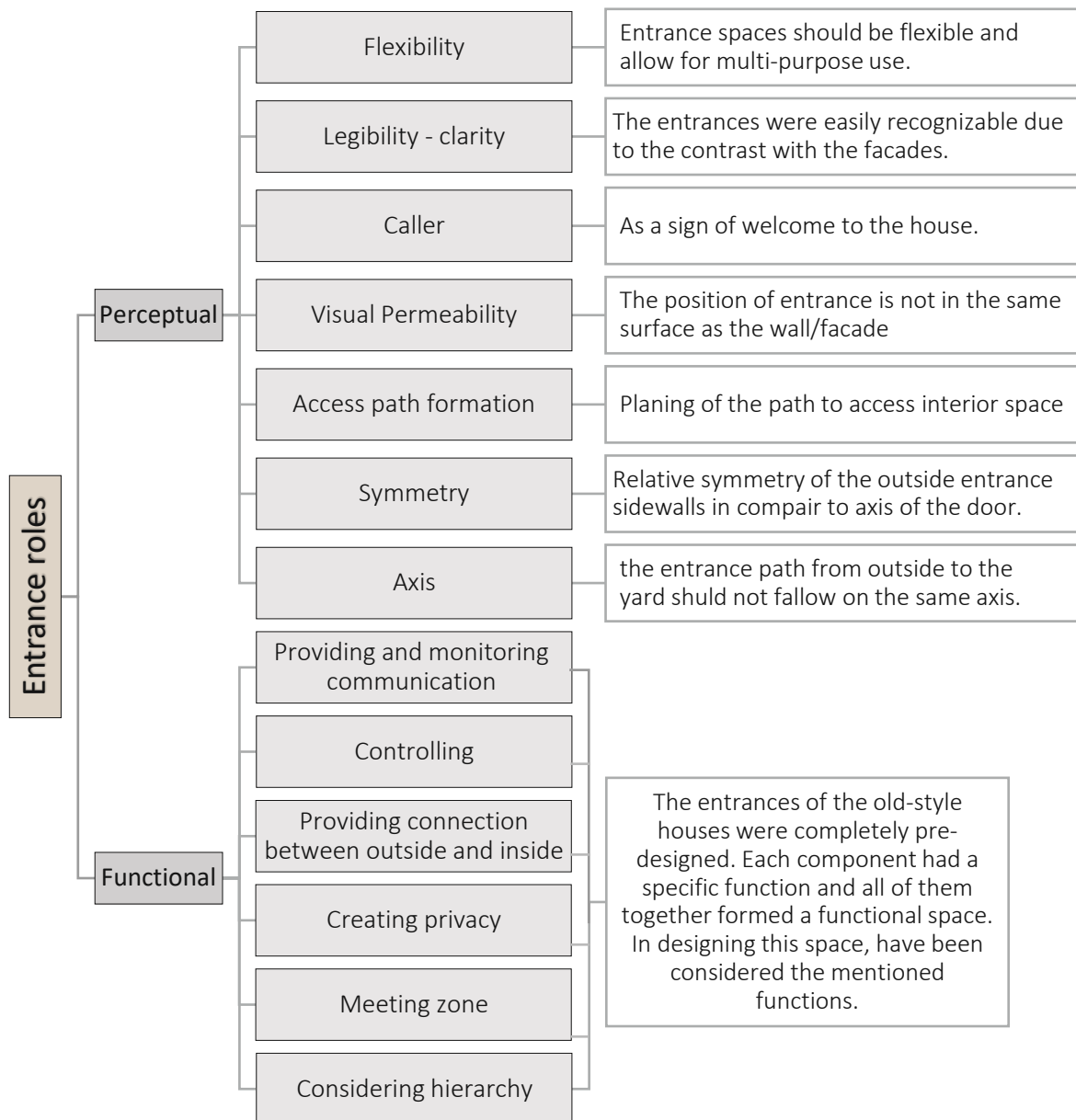


Diagram 3-19 Entrance roles

Formation of the entrance is one of the important and effective elements in introducing the thoughts and theories of the relevant period. This formation happens in proportion and harmony with the facilities, functional goals, and thoughts of the relevant period. To help design the entrance, one should look into the past. Ancient architecture is the reference of our forthcoming studies in examining the process of changes in terms of perceptual, social, and functional. Among the things that have been effective in the formation of entrance spaces in different civilizations and styles, we can mention the natural and social conditions of the region, religion, and social system, and so on, which are shown in (Diagram 3-21).

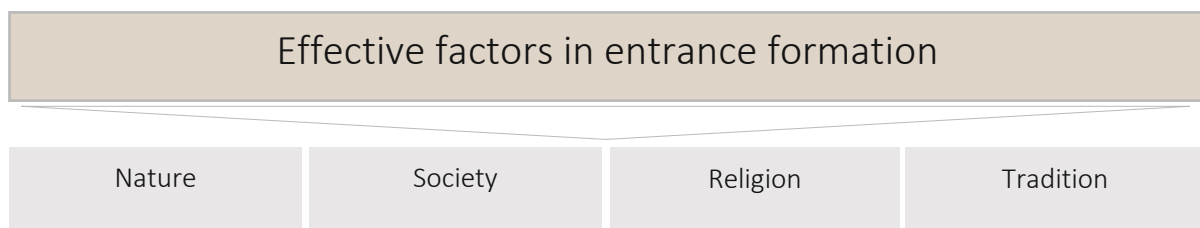


Diagram 3-20 Effective factors in entrance formation

The architectural knowledge of the past can play an important role in achieving the desired quality of entrances in the design of the building. The station of entrance in the process of building design in different historical periods in Iran is visible and has undergone significant changes during its ups and downs, but it has special features that make its revision effective in improving the entrance situation of contemporary buildings.

3.2.5.1 History of Entrance

History of the entrance in Iranian architecture includes topics from ancient architecture (including pre-Persian styles, Persian style, and Parthian style), Islamic architecture (including Khorasani, Razi, Azeri, and Isfahani styles), and contemporary architecture (including Qajar and Pahlavi styles).

Ancient Architecture

Not much information is available about the details of ancient Iranian art and architecture, but according to remaining evidence can bespeak about that period in general. Persian art and

architecture in the present day are associated with the nation of Iran and usually designated as beginning with the Achaemenid Empire (c. 550-330 BCE) but has an even longer history with its origins dating back to before the Persians arrived on the Iranian Plateau sometime in the 3rd millennium BCE. In c. 550 BCE, Cyrus the Great (r. c. 550-530 BCE) founded the Achaemenid Empire whose artistic works drew on the models of the past and improved upon them. The best example of Achaemenid art and architecture are the ruins and works found at Persepolis, the capital city planned and begun by Darius I (r. 522-486 BCE) and largely completed by his son Xerxes I (r. 486-465 BCE). Earlier Elamite structures – such as Chogha Zanbil – had been built of mud brick, but the Achaemenids worked primarily in stone with ornate bas-reliefs as decoration. Persian artistic momentum flagged during the time of the Seleucid Empire (312-63 BCE) but was revived during the Parthian Empire (247 BCE - 224 CE) and reached its peak under the Sassanians (224-651 CE) whose empire drew upon the vast history of its predecessors to create some of the greatest monuments and works of art of the ancient world. After the fall of the Sassanian Empire to the Islamic Arabs in 651 CE, Persian artistic innovations continued to influence the art and architecture of the Islamic world, and today, many of these are synonymous with the concept of Islamic Art. The rise of Islam in the 7th century CE and the subsequent conquest of various regions by Muslim Arabs led inevitably to the fall of the Sassanian Empire in 651 CE. The ancient Persian religion of Zoroastrianism was suppressed – as were many other aspects of Persian culture – in an effort to firmly establish an Islamic-Arabian worldview. Even so, Persian art and architecture endured and came to influence later Islamic-Arabian works. The minaret, almost synonymous with Islamic architecture in the present day, is – as noted – a Sassanian innovation (Joshua J 2020).

Pirnia has studied Iranian architecture styles in his book named "stylistics of Iranian architecture (source...)". Based on his study, these styles are Persian and Parthian (pre-Islamic styles) and Khorasani, Razi, Azeri, and Isfahani (post-Islamic styles), which are named according to their origin. In this section, the features of entrance in each one of these methods are examined separately.

Pre-Persian Style

Before the migration of Aryans, unknown tribes and nations lived in Iran that had advanced architecture (Pirnia and Memarian 2005, 40). Tepe Zagheh is one of the important centres of their establishment with important architectural and artistic features.

About 21 houses have been found in Zagheh. The location of the entrance of these houses was based on the direction of the constant winds in this area, which means that it prevented the wind from entering the houses.

There was only one house with a western entrance, in front of which a windbreak was built to avoid the penetration of cold winds. Another pre-Persian civilization was the Elamite civilization. The centre of this civilization was Shush, which has a five-thousand-year history. To understand the architectural style of this period, one must study the features of temples and shrines. One of the valuable remnants of Elamite architecture is the shrine or ziggurat of Chogha Zanbil near Shush, which has survived from 1250 BC (Pirnia and Memarian 2005, 44).

It seems that the Elamites did not enter their temples directly. For example, none of the seven gates or paths went directly to the temple, as this was considered an insult. In terms of physical adaptation to the climate and nature of the region, the following can be mentioned:

- There is a straw curtain in front of the entrance that protects the interior from sunlight.
- A set of square windows can be seen between the door and the ceiling, by which the temple is lit and ventilated.

Therefore, it can be said that paying attention to the placement and formation of the entrance has a long history in Iranian civilization and architecture.

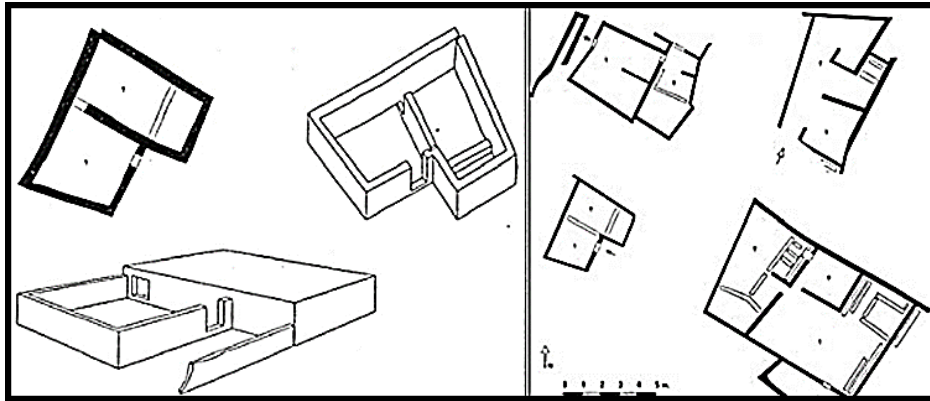


Figure 3-38 Tepe Zagheh houses (G. Memarian 2001)

Persian Style

Many buildings have been built in the architecture of ancient Iran (Achaemenid periods) with the cooperation of various artists. A prominent example is the architecture of Persepolis. Maintaining introversion (especially in Persepolis and Shush) was the basis for the design and formation of entrances, buildings were placed on the platform, and the entrance was accessed by a large number of stairs. The construction of tall columns at the entrance threshold, along with multiple stairs and large openings has created magnificent and huge entrances.

The use of bases and capitals, the arrangement of the columns, doorways, and portals can be seen in the entrance spaces of this period. The construction of sunshades in necessary spots, including entrances, shows the attention to climate issues.

Kalaveh was a type of building in Iranian architecture, an example of which is the Ka'ba-ye Zartosht²² or the Cube of Zoroaster, in Naghsh-e Rostam. The building is square-shaped and made of stone, with an entrance that is higher than the ground floor and can be accessed by a large number of stairs. The height of the entrance above ground level shows the importance and greatness of the building.

To enter the Persepolis complex, a large staircase is considered at the entrance with beautiful reliefs and the Gate of All Nations. This magnificent entrance is a symbol and an introduction appropriate to the whole collection. In all the above cases, there are examples of

²² Zoroaster (/ˈzɒrɒʊæstər/, UK also /ˌzɒrɒʊˈæstər/; Greek: Ζωροάστρης, Zōroastrēs)

Persian-style architectural attention to the important category of entrance in the construction of buildings of that time.

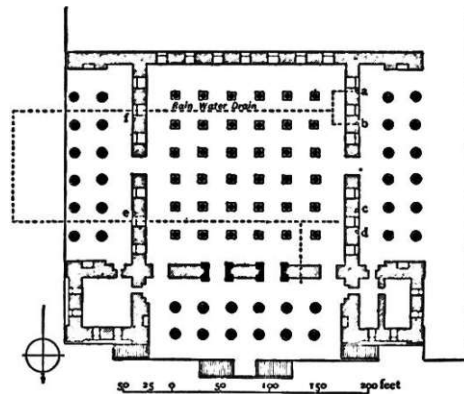


Figure 3-39 Xerxes palace plan, Persepolis (G. Memarian 2001)

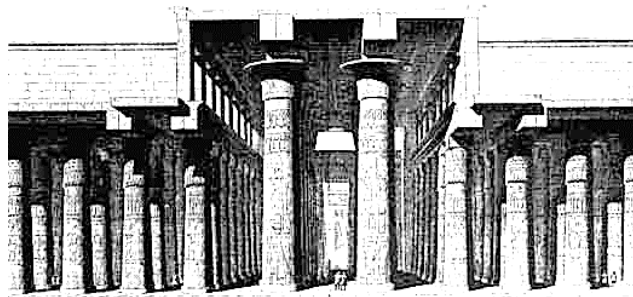


Figure 3-40 Xerxes palace elevation, Persepolis (G. Memarian 2001)

Parthian style

Parthian style has emerged after Alexander invaded Iran, Sassanid, and early Islamic periods. The oldest Parthian settlement ever found is in Nessa or Parthanisa, near present-day Ashgabat. Nessa consists of a lower city and a citadel built on a small hill outside the city walls. The access to this citadel was through the steps behind the round walls of the city. This was due to security and the importance of defence. Aggressors who tried to attack this citadel had to climb around the stairs and were under constant fire.

Nessa architects experimented with different building forms. The entrances were equally experimental, including simple entrances, vestibules, and columned entrances. The most prominent feature of innovation and heritage of Parthian architecture was the iwan and the courtyard. The use of iwans in the entrance space can be seen in many buildings of the Parthian period. Arch of Ctesiphon or Taq Kasra is one of the significant buildings of the Parthian style.

This iwan has been used as the entrance of the building. The opening of this iwan, which was about 24 yards (25.30 meters), created an entrance with a large width.

The Sarvestan palace also has a main vestibule that acts as the entrance of the palace and provides access to the door with a number of steps. In general, the construction of the vestibule and corridors in the entrance of the building symmetrically, and attention to the principle of introversion in the entrance hierarchy using vestibule and courtyard are the principles of entrance design space in Parthian style (Figure 2-22 and 2-23)

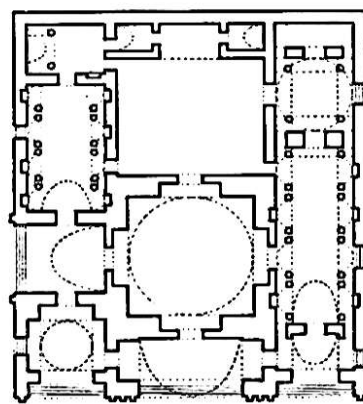


Figure 3-42 Sarvestan palace plan (G. Memarian 2001)

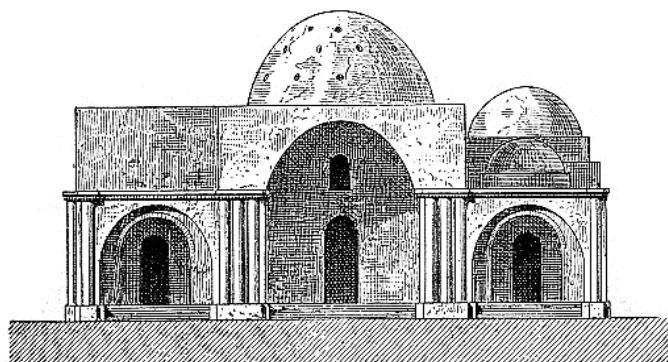


Figure 3-41 Sarvestan palace elevation (G. Memarian 2001)

Islamic Architecture

The post-Islamic period includes Khorasani, Razi, Azeri, and Isfahani styles, all of which are described below.

Khorasani style

After the arrival of Islam in Iran, the design of entrances was followed with emphasis on introversion and consideration of hierarchy and privacy. The attribute of ergonomics and simplicity is one of the architectural features of this style, which can also be seen in the construction of its entrance spaces.

Over time, in later methods, this simplicity was replaced by the decorations used, such as stucco works, girih tiles²³, brickwork - tile works - plasterwork - sculpture - stone carving - lattice work - mirror work - painted ceilings - marquetry

Razi style

This style began during the reign of the Ziyarid dynasty and continued during the reigns of Buyid, Seljuq, Salghurids, and Khwarazmian dynasties.

Razi style is the fourth architectural style in Iran that has all the features of the previous methods. The innovation of Persian style, the glory of Parthian style, and the elegance of Khorasani style appear together in the simplicity of this style.

In the process of a long period, simplicity gradually became replaced with features such as luxury and adornment. Among these features, the elevation of the portal, and the use of decorations like stucco and Bannai script brickwork must be mentioned. Attention to privacy and hierarchy has continued from previous methods to this period.

Azeri style

This style was formed in the period of Hulagu and Timur. Important features of the entrance space in this course are the use of various geometries in the design of entrances, the huge size of the entrance door, and the prevalence of tiling as a decoration in the design.

²³ Girih tiles are a set of five tiles that were used in the creation of Islamic geometric patterns using strapwork (girih) for decoration of buildings in Islamic architecture.

Isfahani style

The Isfahani style is the last style of Iranian architecture and was common in the Safavid, Afsharid, Qajar, and Zand periods. Its origin was Azerbaijan, but its development happened in Isfahan.

Isfahani style consists of two periods, the features of which are different. The first period almost had the same features as its prior periods, with some extensions, but the second period, which has three independent styles itself, deviated from the previous path.

During this period, the construction of pillared iwans in front of newly built palaces such as Chehel Sotoon palace of Isfahan, which is the most important sample of this time, became common. The pillared iwan was the glory of these palaces.

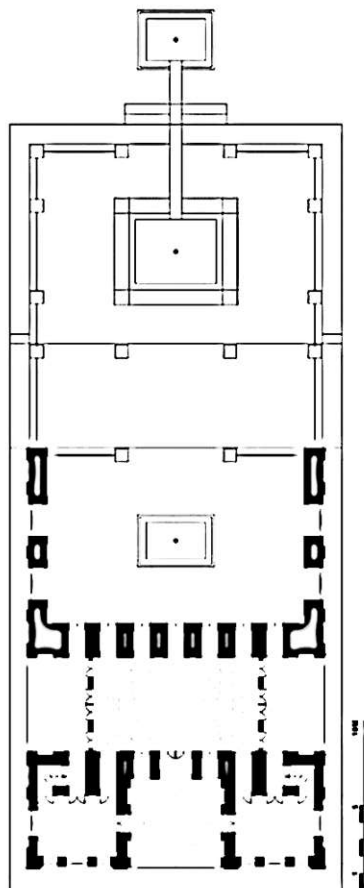


Figure 3-43 Chehel Sotoon palace plan (G. Memarian 2001)

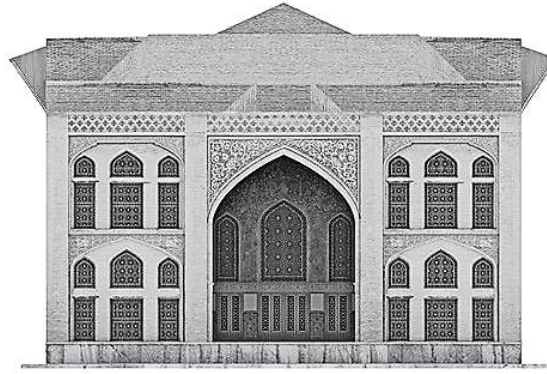


Figure 3-44 Chehel Sotoon palace elevation (G. Memarian 2001)

In the second period of the Isfahani style, during the Qajar and Pahlavi eras, the progress and improvement of the architectural situation turned into decline due to the imitation of western architecture. During this period, with the beginning of cultural relations with the west, the Iranians suffered a lack of self-esteem against western culture and civilization. For example, during the Qajar period, the number of doors in one room was reduced from three to two. Architects of the past had come to the logic that the facade of a room should not be exposed to the morning sun, so they considered several doors, and a thin blade in between to cast a shadow over them (Karimian 2009).

These shades, which were perpendicular to the doorway, have been made in such a way that the sunlight came directly into the room. Therefore, the rooms were heated like a stove during the day, and their proportionality was lost.

The implementation of semi-circular arches, sloping roofs, European columns, pediments, balconies, railings, and stairs in the axis of the building is an obvious example of imitation. Inside the building, wide three-sided stairs, like the western palaces, are other signs of this decline. Another witness is the use of the clock element above the entrance. All of these features together create an entrance with an eclectic style that has been distanced from its traditional features.

The entrances of this period can be divided into three types: old-style, eclectic style, and European style, all of which are described below.

a) Old-style

Old-style houses were introverted and courtyard-oriented houses, often located around side alleys, passages, and dead-ends, all of which were established - whether vernacular or aristocratic - with the old-style and in accordance with the basic principles of Iranian architecture. The facades were usually made of brick and had no windows (Ramezan and Neyestani 2010).

The principles of physical composition, including hierarchy, symmetry, and introversion, were fully implemented in the architecture of the old-style entrances; thus, these entrances were prominent, symmetrical, indirect spaces as part of the exterior that was often decorated; due to the introverted nature of houses and the lack of security in the community, they were decorated in a simple way so as not to attract the attention of others. These entrances, usually located near one of the corners, were either open to the passage or closed into a private zone (H. Soltanzadeh 1993, 146-174).

The main elements of this entrance type that were previously used in Tehran and some other cities were: a truncated arch to cover the opening, two platforms on either side of the door, a rectangular wooden door, and two brick pillars on both sides of the entrance, on which the bases of the arch were placed. In most cases, the pillars created a linear frame and two flexible surfaces located between the sides of the rectangle and the arches, right above the entrance space, which was decorated with brick or tile patterns.

The entrances of old-style houses have uniform components and combinations.

These zones and components not only made it possible to meet, talk, stop, wait, and enter, but also filtered the arrivals by gender, quality of presence, and their relationship with the host (Hashemi, 1996, p.12). The arches were usually truncated and sometimes oval or crescent-shaped, and their ceilings were often simple or decorated with brick and plaster. The platforms on either side of the portal were semi-private, as they were used both when the owner talked to the neighbors, and when the passers-by needed to take a rest without permission. This was

considered as one of the prominent patterns of behaviours of the people of that time (Mirzayee 2006, 190).

The width of the doorway was usually 1.5 meters, and its depth was about 0.5 meters and the door itself was mostly rectangular and had the dimensions of human scale (H. Soltanzadeh 1993, 128). Of course, in some cases, short doors were also used, but the long threshold, which made the passer-by to watch out and eliminate the risk of being hit in the head. The doors usually had no hinges, and instead, they rotated on the pivot. There were also two metal studs installed in various shapes, whose function was to inform the privacy (Abolghasemi 2004, 123). These doors usually did not have any windows, but when there was not enough light, a small opening was considered above the door (H. Soltanzadeh 1993, 102) to guide the light into the vestibule.

The portals were either quite simple or had small decorations of brickwork, plaster, or a combination of both, which were also appropriate to the owner's social class. Most houses had vestibules and corridors, one or more of which led to different parts of the house.

These types of entrances can be called old-style, due to the style of architecture, in which all of its components and elements represent the structural and decorative methods of Iranian residential architecture and are appropriate to the beliefs and needs of the residents.

b) Eclectic Style

Eclectic Style houses were, in fact, the combination of old-style and European houses, incorporating some of the elements, decorations, and motifs of Renaissance and to some extent neoclassical western architecture into their native architecture. These introverted houses, mostly open and sometimes closed and private and located along the side passages or the main ones, belonged to nobles, courtiers, or middle-class people.

During the Qajar period, "semilunar" arches were used to cover the openings of entrance spaces. In some of these spaces, platforms were built on both sides that could be used for sitting, but sometimes these platforms did not have enough space to sit and were built only to create a composition of form and space. There are also cases that do not have a platform. In some spaces, various patterns were performed on the pillars and other surfaces, especially on the entrance cornice. These entrances were usually about half a meter deep, but their width

was between three and four meters and their height was between three and four and a half meters.

The facades of Eclectic Style houses were mostly made of bricks, and their entrances had parts such as arches, pillars, doorways, doors, portals, vestibules, and corridors. The depth of these entrances was usually about 0.5 meters, their width between three and four meters, and their height between 3 and 4.5 meters (H. Soltanzadeh 1993, 57). Most of the houses had crescent-shaped arches, decorated with bricks or tiles. In some cases, there were two arches, two decorative columns, and two pillars on either side of the arch (Figure 2-55 and Figure 2-58).

Unlike old-style houses, these entrances had a hatch above the doors, which was rectangular or oval and had two functions: to bring the light in during the day and direct it to outside at night (H. Soltanzadeh 1993, 59). In a few cases, there was a small single window on one side of the entrance. The entrances of the houses were either simple or decorated with plaster, bricks, tiles, or a combination of them. These entrances rarely had crescent and pediment designs, but instead, had a tile or marble epigraphy in Nastaliq.

Regarding the entrance and the arch, it should be said that their decorations had a relatively direct relationship with the owner's social status, religious beliefs, and taste. These houses had vestibules and corridors or just one corridor. The vestibules had more varied decorations than before, and the ceilings were usually simple, sometimes covered with wooden beams, plaster, or brick and gypsum applications. The corridor in most houses remained the same as before, but in some cases, with no cover, which has turned it into a passage.

Thus, it can be said that the placement of native elements and decorations along with western designs and motifs and their combination with each other, had placed this type of entrance among the eclectic style, a combination that shows the effects of tradition and modernity at the same time.

c) European style

The earliest important contact between European and Iranian architecture would most probably have taken place around the early decades of the Qajar period (1845-1915) where, after two disastrous wars with Russia, the Iranian elite were suddenly forced to turn their attention to the West. In this regard, it effectively opened avenues of extensive interactions

between Iran and the West, and a number of elites travelled to the West to study. It was after this period that the Iranian elites educated in the West came back with some notions of western classical architecture in mind and thought about constructing similar buildings in their own country (Ebrahimi 2011).

European-style houses, which belonged to the late Qajar period, were extroverted houses (Kiani 2004, 236) with new-style and completely western designs. The exterior of these houses, especially their entrances, was different from previous examples. In most cases, the houses were located openly on the main passages, i.e., wide alleys, streets, and squares, and had prominent window facades, due to the provision of light and view through these passages (H. Soltanzadeh 1993).

The entrance space of European-style houses – especially those on the sides of the street – was built between one of the main facades and on the axis of symmetry. The walls of the houses were made of bricks and sometimes shorter than in previous periods. The entrance zones were reduced to a doorway, a door, a portal, and sometimes a corridor. Other entrance elements such as arches, pillars, and studs, which represented hierarchy, introversion, privacy, and security, were not included in the design. In this way, the entrance was opened into the courtyard or the main zone, with completely direct access.

The use of new-style form compositions, which were often influenced by Russian architecture like, Cultural Centre of Rasht, Post office of Rasht, The Real Estate Registration office, Municipality of Rasht, which each of these building was a model for smaller and personal buildings (montazer 2019). And also, European architecture, foreigners' visits to Iran and Iranians to Europe, and especially the construction of embassies and buildings belonging to Europeans, became common, such as various forms of the pediment, that were decorated simply or with Islamic motifs and tiling.

These ornaments and motifs were mostly used in the entrance and the pillars were often simple and did not have decorations, except in some cases. Sometimes a combination of columns and other decorative elements were used on each side of the entrance.

This type of entrance included decorative elements such as columns, semi-circular arches, and windows, but no platforms, indicating that the social function of the entrance as a place

for people to rest has been ignored. One of the reasons for the elimination of this function, in addition to the changes in behavioural patterns and design, was the existence of passages and streets that were considered urban areas and were not suitable for gatherings. The columns on both sides of the entrance were often simple and without decorations and sometimes decorated with ceramics and bricks.

As mentioned before, windows were elements that most houses have had for a long time, but they gradually became an important element in the exterior, above the entrance (Figure 3-35). Although not only the windows but also the cymatium, baseboards, and plinths were the items used in combination with the entrance.

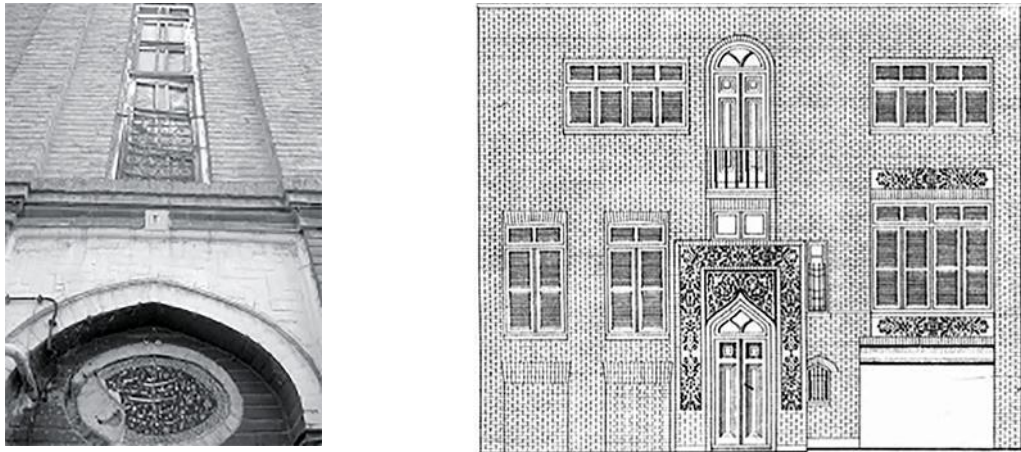


Figure 3-45 Windows that formed overtime on the exterior façade

This type of entrance space can be called European entrance, due to the abandonment of tradition and the dramatic use of Western elements, motifs, and patterns. The construction of these spaces, despite its advantages, weakened the growing trend of entrance architectural design, and thus the evolutionary process of this design stopped and even declined in later periods. The characteristics of old style, Eclectic Style and European-style houses are displayed separately in the (Diagram 3-23).

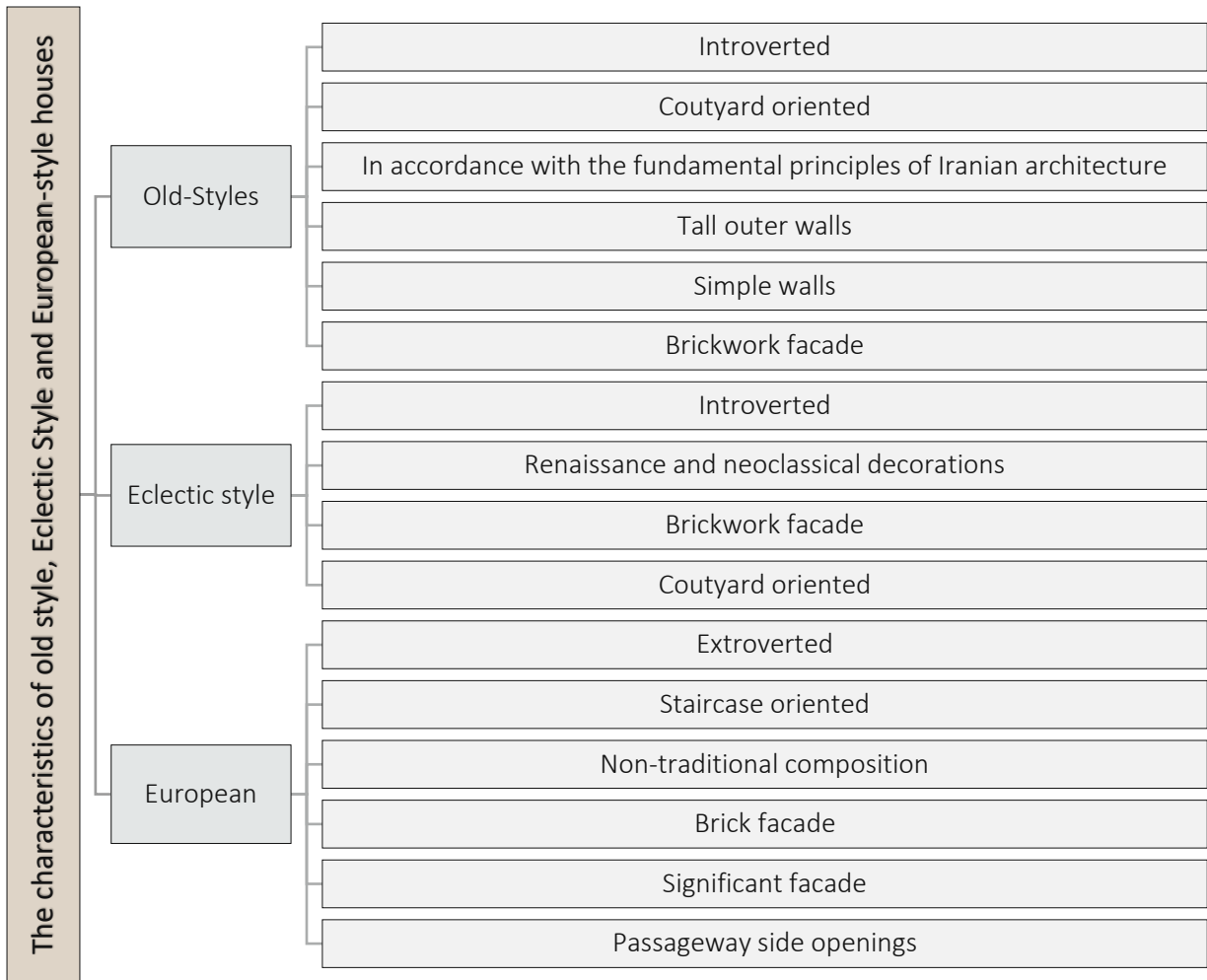


Diagram 3-21 The characteristics of old style, Eclectic Style and European-style houses

Contemporary Architecture

The design of entrances in contemporary architecture of Iran is based on a completely imitative way and influenced by the international style of contemporary architecture, which leads to the formation of entrances without considering the climate and culture of the region. In this type of architecture, the implementation of elements such as columns and pediments had not any functional purpose. The lack of visual unity, ignoring the urban landscape, and poverty of architectural values are other characteristics of contemporary entrances (Ghobadian 2003, 99, 118). The table below introduces the features of entrance architecture in different periods.

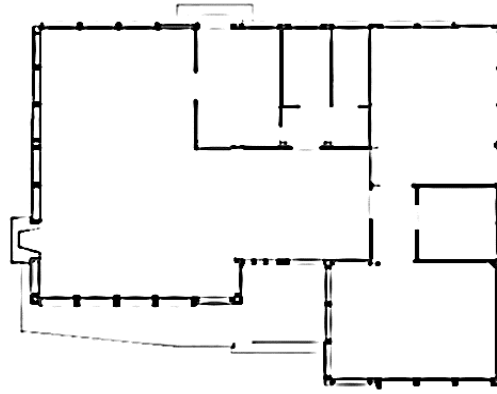


Figure 3-46 A residential complex plan (G. H. Memarian 2009)

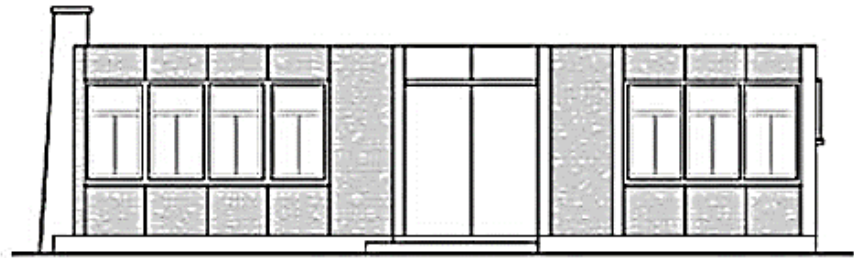


Figure 3-47 A residential complex elevation (G. H. Memarian 2009)

Table 3-5 Entrance architectural features in different periods

Entrance architectural features in different periods	Period	Style	Features
	Ancient	Pre-Persian style	<ul style="list-style-type: none"> - Climate consideration - Decorations - Indirect entry - Nature consideration
		Persian style	<ul style="list-style-type: none"> - Introversion - Higher location of the entrance compared to the ground level. - Invitingly and legibility - Decorations - Ergonomic - Climate consideration - Harmony
		Parthian style	<ul style="list-style-type: none"> - Security consideration - Simple, consisting of vestibule or columns. - Implementation of iwan and arc - Invitingly and legibility - Symmetry - Introversion - Hierarchy
	Islamic	Khorasani style	<ul style="list-style-type: none"> - Introversion - Privacy - Implementation of vestibule - Hierarchy - Ergonomic - Simplicity - Decorations
		Razi style	<ul style="list-style-type: none"> - Specific decorations - Elevation of portal - Implementation of vestibule - Privacy - Hierarchy
Azeri style		<ul style="list-style-type: none"> - Specific decorations - Invitingly and legibility 	

		Isfahani style	First Period	<ul style="list-style-type: none"> - Axis oriented - Implementation of vestibule - Indirect entry - Privacy - Introversion - Setback - Implementation of iwan 		
			Second period	Old-style	<ul style="list-style-type: none"> - Introversion - In accordance with the fundamental principles of Iranian architecture 	
				Eclectic style	<ul style="list-style-type: none"> - Introverted - Renaissance and Neoclassical decorations 	
				European style	<ul style="list-style-type: none"> - Extroverted - New-style composition 	
	Contemporary	-	<ul style="list-style-type: none"> - Influenced by the international style - Implementation of foreign elements just as an imitation 			

3.2.5.2 Features of entrances

Principles

The entrance has a direct relationship with human beings and social activities. It can induce a mental image, and a sense of belonging to a place, along with expressing perceptual and cognitive identities of residents of the house as well as local citizens and passers-by. Entrances of old-style houses have components, features, and qualities that properly play this role in creating a sense of belonging. The emergence of such qualities in architecture is directly related to paths, walls, edges, forms, portal height, decorations, hierarchy, and the type of materials chosen for the entrance of residential houses. The entrances are also influenced by the dominant architectural style of their period, the location of the house, and the socio-economic status of the house owners.

The principles of entrance include hierarchy, privacy, axis, symmetry, access, scale, proportion, position, location, connection, control, politeness, number, facade, and decoration, all of which are described below.

Hierarchy

Hierarchy is one of the most important principles in the formation of old-style Iranian architecture and urban planning. The role of hierarchy in defining the components of a whole set and identifying them is undeniable (Tabibian, Charbgoon and Ablolahimehr 2011). In most old-style buildings, Hierarchy includes the frontage, portal, doorway, vestibule, corridor, and finally the courtyard and other functional spaces around it, like *iwan* or arcades. The observance of hierarchy causes the separation of public and private spaces and emphasizes the role of privacy in the spatial organization (Seyfian and Mahmoudi 2006).

Hierarchy means organizing and combining zones and components based on some of their physical or functional characteristics. One of the functions of the entrance, as mentioned before, is to connect the interior spaces of a complex with spaces outside it. Other functions and activities, such as changing direction, stopping, waiting, entering, dividing, and determining the direction of paths, moving, and entering the interior space, each have components appropriate to their characteristics. The existing hierarchy between these

activities has led to a hierarchy between their components so that the entrance spaces function in the best possible way (Zakeri and Hoseini 2015).

It should be noted that the principle of hierarchy as one of the basic principles governing existence has the greatest impact on the formation of privacy in the body of old-style Iranian architecture and urban planning.

The interference of territories and domains and considering the same physical and spatial characteristics for two domains with different functions reduces the qualitative desirability of space and this is where the prominent role of hierarchy in privacy and creating a space between the two domains (Seyfian and Mahmoudi 2006).

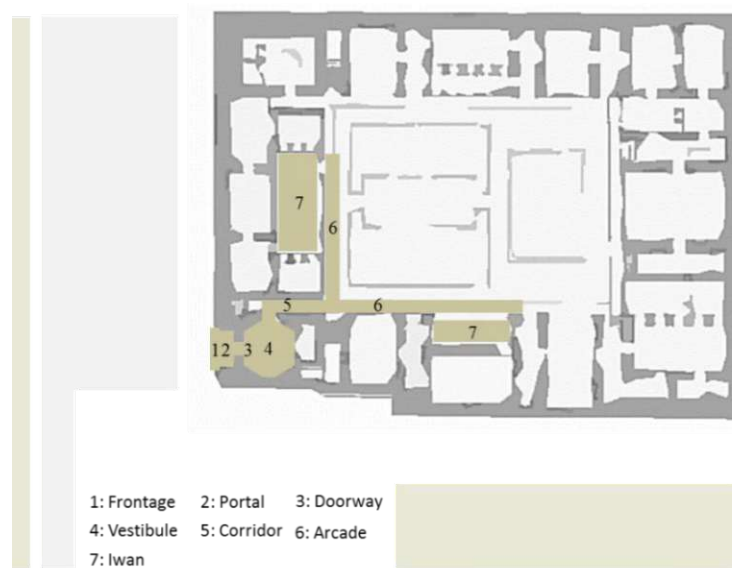


Figure 3-48 Hierarchy (Payamifar, 2020)

Privacy

Privacy is another important principle that has been used in old-style architecture. The discussion of privacy and introversion in the entrance architecture is important because it connects the external and internal space and usually only the external appearance.

Examination of privacy in case studies shows that the entry was through the courtyard. Although the entrance was a covered path, but it was not directed into the main spaces. The

entrance path first passes through the courtyard and then spreads to other spaces. Of course, in some cases, this issue has not been observed, such as the side entrance of Forough Al-Molk's house, from which one can enter the guest room. Also, in most houses, privacy is controlled by the movement path. The rotation that occurs when entering the courtyard from the vestibule, in addition to separating the space inside and outside, creates privacy and restricts the view into the house (Golboo and Hojat 2015).

Therefore, it can be said that the meaning of privacy in architecture and urban planning is to embody the space in such a way that it becomes private from both physical and mental aspects. Privacy in the physical aspect is more focused on the principles that create security, while in the mental aspect, it has the features that bring respect and value to the architectural space so that one can relax in it (Seyfian and Mahmoudi 2006).

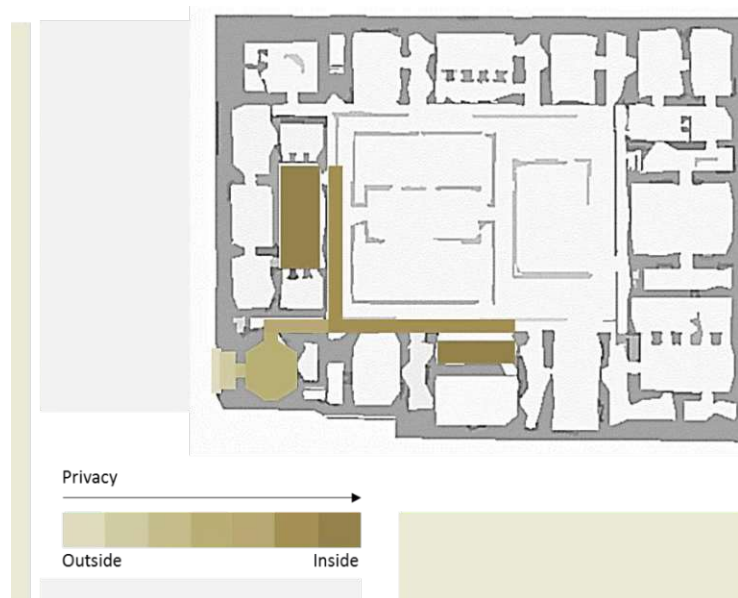


Figure 3-49 Privacy (Payamifar,2020)

Axis

In some buildings where the distance from outside to inside is long, passing from outside to inside, needs paying attention to the main axes in the design and composition of the entrance space (Chelongarian, et al. 2016). These axes include the following: 1. Qibla axis 2. Symmetrical Axis 3. Direct axis and 4. Indirect axis.

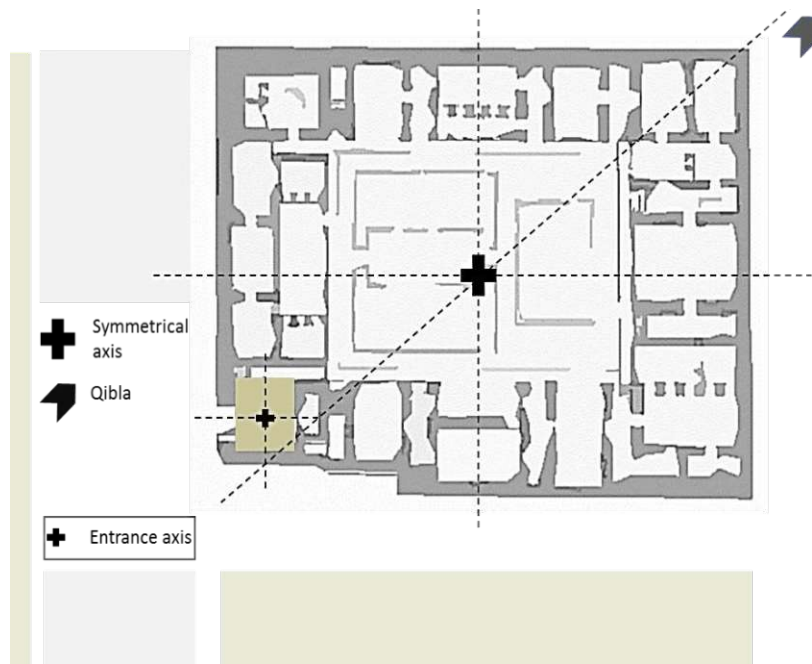


Figure 3-50 Axis (Payamifar,2020)

Symmetry

Symmetry is a principle that was not only used in the buildings but also in the entrance space and even in inscriptions and other facade details (M. Nilforoushan 2008, 16).

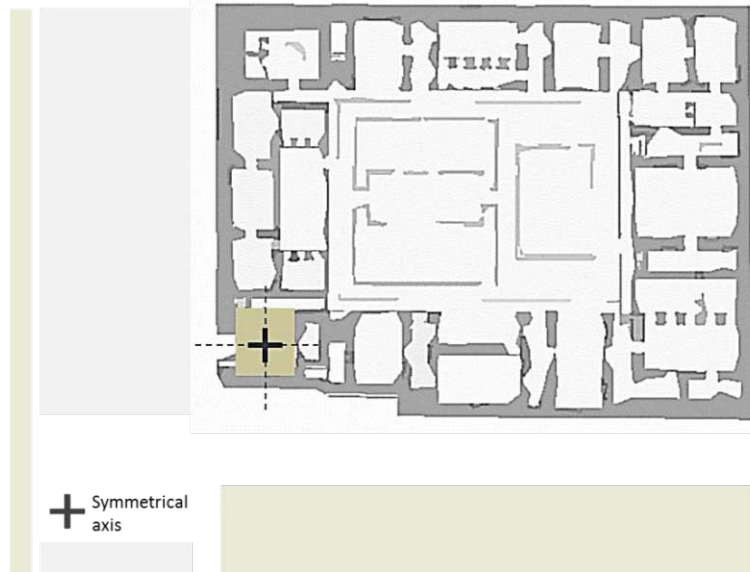


Figure 3-51 Symmetry (Payamifar,2020)

Access

The type of access paths to interior spaces has been designed according to several factors such as the function of each building, social and cultural patterns of entering each space, and climatic conditions. The type of these paths can generally be classified into three categories: 1. Direct 2. Indirect 3. Spiral.

Direct access

In buildings where the quick and easy entry of clients into the building was intended, the access path to the interior spaces was designed as straight as possible (H. Soltanzadeh 1993, 112).

Indirect access

This type of access was considered to make the entry gradual and respectful.

Spiral access

This access method was used to control the interiors, prevent rapid entry, and eliminate the view. This type of path is seen in buildings of introverted and dense textures (Chelongarian, et al. 2016).

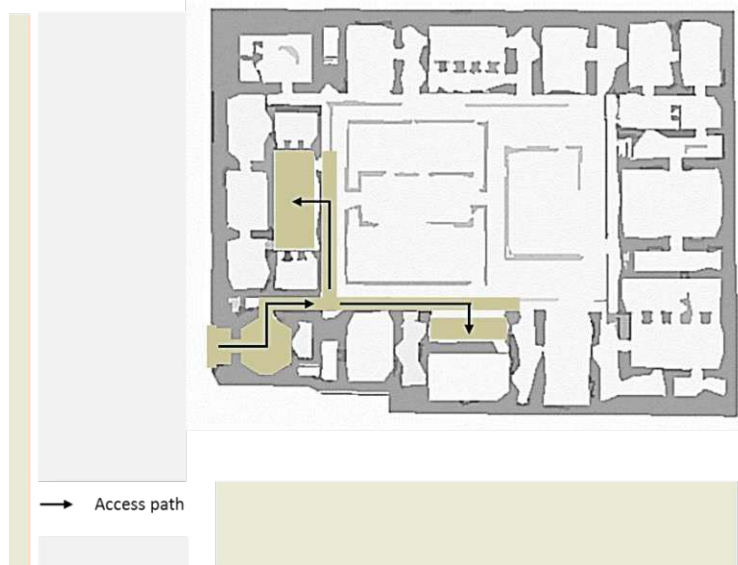


Figure 3-52 Access (Payamifar,2020)

Scale

Most of the buildings such as houses have entrances based on a human scale. The height of entrance space in these buildings is approximately from 5 up 6 m and the height of the entrance door is between 2 and 3 m. Most of these entrances have a frontage and portal which make a suitable space for a few people. Other components dimensions and scales are suitable with their functions as well. For example, the width of corridors is about 1 – 1.20 m, and its height is about 1.80 – 3 m.

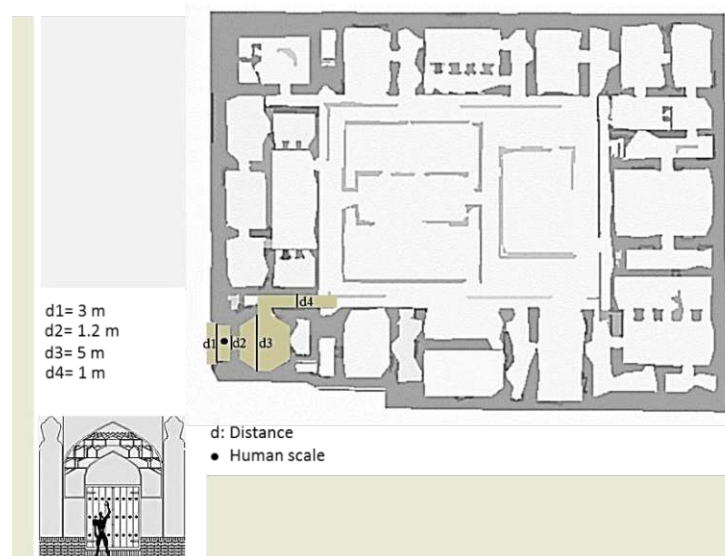


Figure 3-53 Scale (Payamifar,2020)

Proportion

The proportion of the entrance facade is influenced by some factors, such as the building type, function, importance, location, architectural feature, and historical period. The composition forms are:

- Width: The entrance facade in most buildings is wide. In these buildings, usually, one or more decorative arches exist at each side of the portal. In some of them, there are platforms on two sides of the entrance. The height/width ratio in this type of proportion is 1.5/2.5.
- Elevation: Elevated main entrances were formed in Ilkhanate period for the first time and have been implied into many buildings from that period until now. Moreover, this form has been used in some public buildings and even private ones, like houses. The height/width ratio implied in this kind of proportion is 1/2.5.
- Medium: The composition form of entrance space in most of the buildings is neither wide nor elevated and has a square ratio. The form of the portal in some of these entrances is wide and elevated, but the decorative arch has square proportions. In the words, the height/width ratio in this proportion form is 1/1.

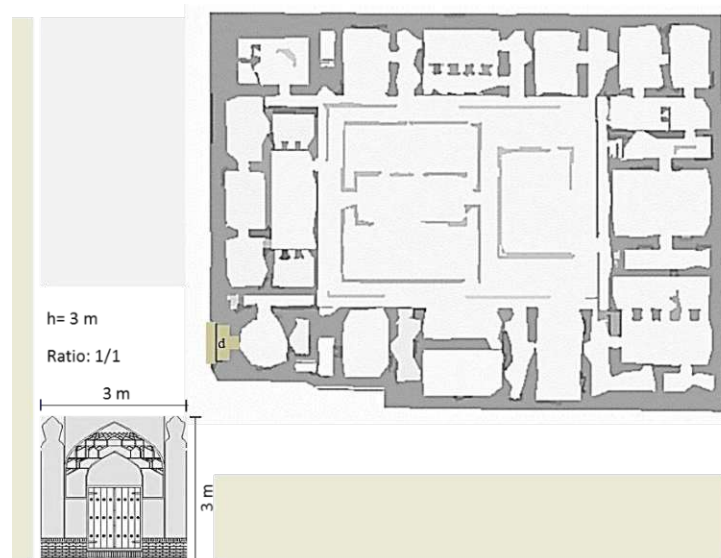


Figure 3-54 Proportion (Payamifar, 2020)

Position

The position of the entrance in relation to the corridor depends on the passageway direction, edge, and level, all of which are explained below.

Position of Entrance in Relation to the Passageway Direction

The position of the entrance, according to the passageway direction, has four types, which are:

Random

Most of the passages in the urban context were formed gradually by the extension of architectural and urban spaces, so, they had not any independent spaces. Buildings were commonly built along the passages and their entrance door were naturally situated along there. More than 90% of entrance spaces show this situation in the old context.

At the cross

The narrow width of most urban passages in the old context caused a few entrance spaces of buildings to take place in the cross of passages or at the turn of them because narrow ways are not suitable to access the building. This often happened in the historical context, while it is more common in new contexts. In this case, the corner was chamfered to make enough space for residents and passers-by.

In new urbanism with a checkered context, architects design the entrance in the cross point to make it visible from each side.

At the ends

Most of the passages in historical cities were dead-ends and the entrance door was usually built at their end. In some dead-ends and vestibules, particularly in residential contexts, the entrance door was placed at the beginning of the alley or vestibule for safety and privacy, and it was closed at night.

Position of entrance in relation to the passageway edge

The position of entrance, according to the passage edge, has three types, which are:

Aligned

Most of the small or medium building's entrances did not have a deep portal and so the entrance door was placed along the edge of the passageway. Usually, the columns at each side of the door were located 10-20 cm in the way. In this kind of design, there were neither any waiting spaces considered, nor any special space to access the building, but it did not cause any problem for residential units, because of the low traffic in the passageway. However, it was not suitable for large public buildings.

Intrusion

Entrances in most of the caravanserais, palaces, and some houses had a medium depth portal and also a shallow or wide frontage in front of it, so the access zone was separated from the passage. The depth of the portal in small buildings was between 1 m and 1.5 m on average and in large buildings between 2 m up to 5 m.

Protrusion

Some of the entrance spaces were built in the passageway zone, but just in rare cases, because this method disorganized the traffic. In a few cases, only the overdoors and columns were built in the zone. The depth of the just in the passageway often was about 0.5 m or a little more in some cases, but in some cases which the building was more important and located along a wide passageway, a part of the entrance was also located within the passageway to make it distinct from its sides.

Position of entrance in relation to the passageway level

The position of entrance, according to the passage level, has three types, which are:

Equal

Most architectural buildings entrances were built at the passageway level or with a little difference. In some rainy climates, the entrance level was higher than the passageway to avoid the leaking of rain into the house. In some urban contexts, the entrance was placed lower than the passageway level, because of urban context properties, geographical parameters, or urban installations. In most entrances, which were located lower than the passageway, the portal was

built at the same level as the passageway and was related to the building with stairs, ramps, or both.

Higher

In a few historical buildings, entrance spaces were built a little more than 1m higher than the passageway level to notify the building. In the Islamic era, stairs were not an important element, particularly in entrance spaces, and they were located somewhere which had no especial views. The stairs application as a practical decorative element in Iranian architecture become common from Qajar era and was borrowed from European architecture.

Lower

Some entrances were built lower than the passageway level, especially in historical cities. In these buildings, access to the entrance door was possible through stairs and ramps. However, houses were merely built in this way because the only reason to put an entrance lower than the passageway was the especial function of the building, which did not apply to houses.

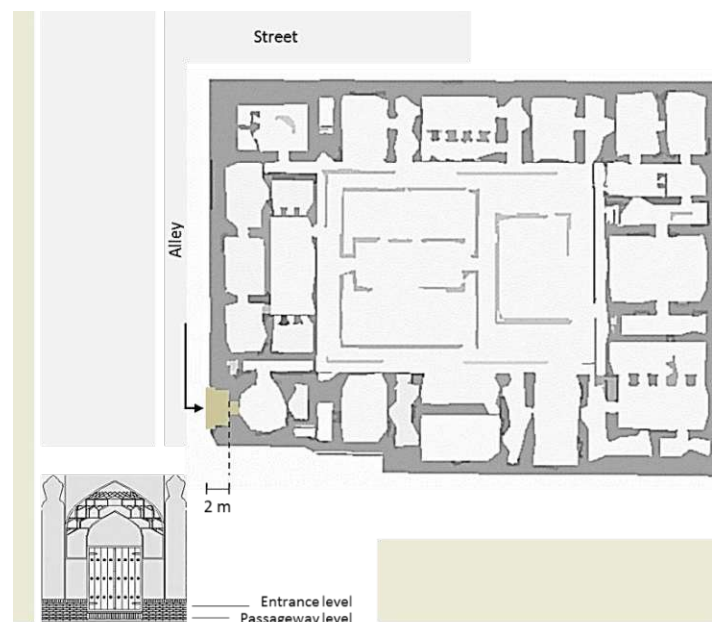


Figure 3-55 Position (Payamifar,2020)

Location

Entrance space location has differences in exterior and interior but is similar in most of the cases. In some buildings, there was no specific relation between the entrance and the surrounding space because the entrance was built based on the passageway, but it was matched to the axial views or other effective parameters. The location of entrance has five situations, which are:

In the corners (near)

Entrances of introverted buildings were mostly located near the yard corner. This situation was considered for interior opened spaces because the central layout was preferred.

In the corners (exact)

Some buildings had one or two entries in the corners of their yard. A few cases had four entries in each corner, such as caravansaries. Locating entrance space in the corner of extraversion buildings was rare in the past, but it has become common in this century.

At the symmetrical axis (single)

Entrance space in some buildings was designed in the centre of the symmetrical axis. This location was mostly used in caravanserais and special houses. Some buildings even had two entrances located on the symmetrical axis of the building, one of which was the main entrance and the other one was secondary.

At the symmetrical axis (double)

Having three or even four entries on two axes, was a situation often used in a few buildings, such as caravanserais, summerhouses, and springhouses, some of which had four entries on both symmetric axes, which means an entry in the middle of each side of the building.

Random

In some small or medium buildings, the entrance location followed the passageway and urban context situation and so was built at any point of the building, without any geometric or architectural approach. This location was not common then, but now it is.



Figure 3-56 Location (Payamifar,2020)

Connection

One of the most important functions of any entrance space is to provide a connection between the inside and outside of a building or complex because the entry and exit of any enclosed or closed building are possible only through the entrance space.

To connect an architectural space with urban spaces, open or semi-enclosed space was often used somewhere in front of the frontage. In other words, the frontage was a connecting space between the building and the urban space, and in this regard, it had a dual nature, that was, on one hand, a part of the entrance and on the other hand, a part of urban space (H. Soltanzadeh 1993, 66, 134)

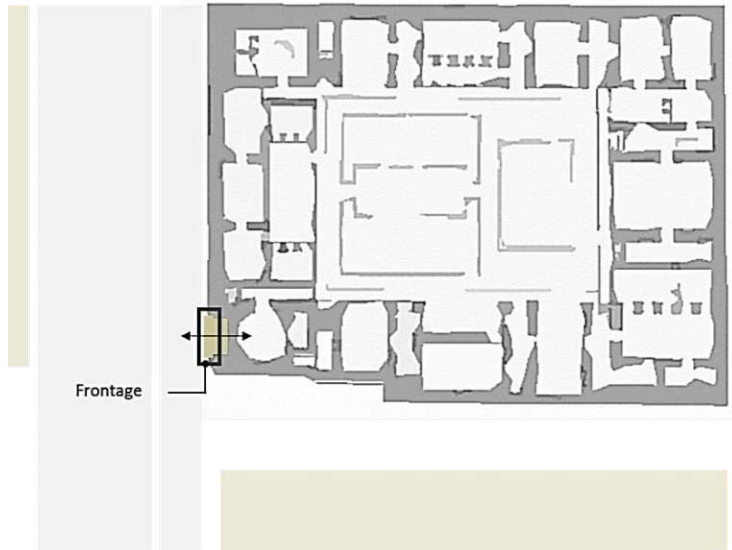


Figure 3-57 Connection (Payamifar,2020)

Control

Creating a connection between an enclosed space and its surroundings should be subject to several functional and social considerations. The entrance of each building can be considered the most important factor in monitoring. In the simplest form, by closing the entrance door, the zones are disconnected and re-connected whenever the owner decides to. Also, in order to ensure maximum privacy and security, the approach of extending the entrance path as much as possible was considered (H. Soltanzadeh 1993, 172).

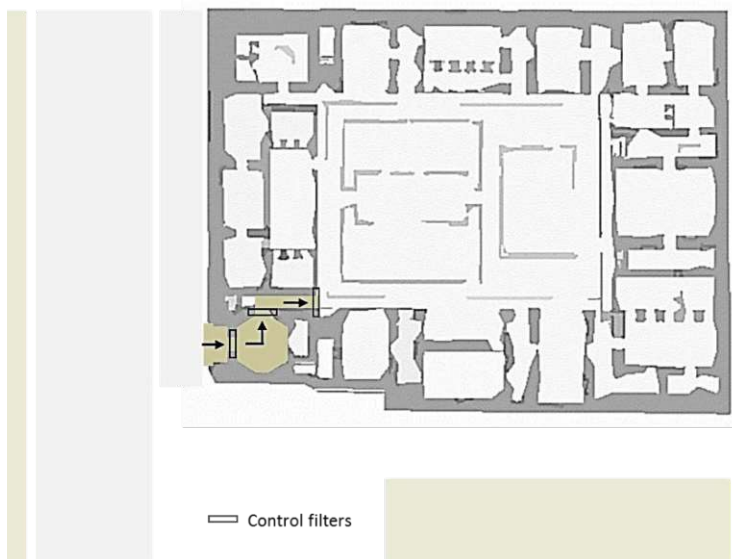


Figure 3-58 Control (Payamifar,2020)

Politeness

The entrance area has always been a good place to welcome and escort guests and newcomers. This tradition is also considered pleasant in terms of religion, and it is recommended to accompany the guest when entering and leaving (H. Soltanzadeh 1993, 176).



Figure 3-59 Politeness (Payamifar,2020)

Number

The number of entrances of each building is variable between one, two, and even more, all of which are described below.

Single Entrance

Most of the historical buildings had one entrance, which was easily monitored. In other words, the number of entrances was considered one to provide security.

Double Entrances

Most of the buildings with two parts – indoor and outdoor – had two separated entrances or two different paths from the vestibule. Also, in some large buildings like caravanserais which were located in the city, two entrances were considered to suit the heavy traffic. In general, these two entrances were considered for some reasons, some of them are:

1. To make possible the access from different paths or points.
2. To make it possible to allocate the space to different functions with separated access paths.

Multiple Entrances

Two or more entrances were used in some large buildings such as caravanserais, due to a large number of incomings. In addition, the extent of these buildings made access difficult for people on surrounding paths, so they played the role of a connection route between mentioned paths. However, small buildings, including houses, did not usually need more than two entrances.



Figure 3-60 Number (Payamifar,2020)

Facade

Entrance spaces in the introverted buildings had two facades. The first view was seen from the outside and the second one, from the inside. Generally, the exterior facade was more important than the interior one. Particular design methods were applied:

Single facade

Most of the buildings that were built in the first centuries AH (600-700 AD), had a portal or a decorated overdoor. Thus, their entrance space only had one facade, which took place on the outside, and from the inside, the facade was not separated from surfaces around with any

architectural works. This method of designing, which was focused on the exterior facade, not only was used in the first centuries AH but also had been implied in the next periods.

Double facade

In some large well-designed buildings, both views of the entrance space mattered and so were separated from adjacent surfaces. The entrance of some buildings that were built after the Ilkhanate period, had such features.

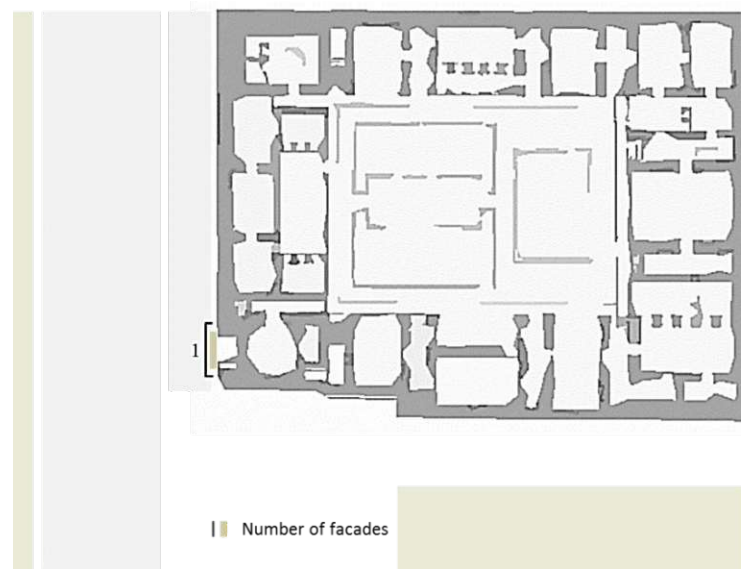


Figure 3-61 Façade (Payamifar,2020)

Decoration

Although decorations are not considered a functional feature of a building, they are important because of their architectural value, and knowing the style and story behind them from an architectural point of view can be a good start to achieve a local approach for modern entrance decorations. The decorations in the historical entrances can be examined in terms of materials, design, colours, and adornments, which will be discussed in detail below.

Decoration materials

Brick

Brick is one of the most important materials which has been used in the construction of facades from many years ago in Iran. Being resistant to cold and rain and other climatic factors was the main reason of covering most of the entrances' facade with bricks. However, the ease

of use and the variety of forms were other reasons. In the primary centuries after Islam up to the middle Seljuk period, brick was the most important material in the decoration of the entrance.

Tile

From the late Seljuk period and especially from the Ilkhanate period, the tile was used in combination with brick for decoration. Gradually from the late Ilkhanate period and specially from Timurid period, tile became the most important element in forming an entrance façade, as far as in some buildings, the surface of the facade was covered with tile.

Mosaic (the art of creating images with assimilation of small pieces of coloured tiles) was the first type of tiles, but after Safavid period, Islamic ceramic (seven colours tile) and clay tile replaced it, due to the waste of time and cost.

With this method, patterns were designed with desired colours on square tile and then passed through the kiln to be fixed. In the primary centuries, there were only blue tiles, but in Qajar period, some sharp colours such as pink, yellow, and red were added.

Stucco

Outer surfaces of entrance facades were rarely covered with stucco, due to the lack of resistance against rain and other climatic factors. In some of the entrance spaces which had portals, some interior surfaces, especially those away from rain, were decorated with stucco. Different methods have been used, such as some delicate patterns with low thickness plaster.

In Qajar period, stucco artworks were affected by the stucco art of Europe and Russia. In this method, the thickness of plaster was much more. Another usual method for decorating the portal in some large or medium buildings was making ornamental patterns with stucco.

Stone

Stone was a good choice for covering plinths and platforms because this material was more suitable for the parts of the facade that were more vulnerable than other parts. The stone used for decorating small building's facade, was ordinary and Low price, but for important buildings, marble and other decorative stones were preferred.

In some regions with access to sources, all parts of the surface of the entrance facade were covered with stone with usual methods, such as Muqarnas. Implementation of geometric and natural decorative shapes made these surfaces even more beautiful.

Colour

Each kind of decoration method added particular colours and textures to the surface of entrance spaces. Brick with its fine texture, soft colours, and shadow contrast in some cases, was one of the most suitable materials to use. The use of other materials in combination with brick in entrance spaces made a beautiful contrast and variety in composition, texture, and colours.

Design

The design of entrance spaces in old-style buildings can be categorized into three types:

1. old-style,
2. semi old-style,
3. new style,

all of which are described below.

Old-style style

In old-style style, there usually was an arch within a rectangular surface or an elliptical arch in a few cases. There also were two columns on both sides of this surface. Above this level, i.e., on the overdoor, there was an inscription with rectangle shape or other shapes in some cases.

Usually, two platforms were placed on both sides of the portal or the entrance door, which were made of brick in residential buildings. Generally, the entrance door had a rectangle frame and the door had two leaves and made of wood, with some ornamental decorations.

Eclectic style

From the Qajar period, due to the contacts and communications with Russia and some European countries, the entrance spaces of some palaces, houses, and government buildings changed. These changes have had a maximum effect on aristocratic buildings and palaces.

Some of the entrance spaces can be called semi-traditional because they had not just some old elements, but also new ones. For example, platforms, which were considered as an old element, were still a part of entrance design in this period, but not with a functional approach, and just as a decorative element with dimensions and proportions that were not suitable for sitting. Among the new ones, semi-circular arches used to cover the roofs can be mentioned, which were barely used in the past periods.

European style

The new style had various forms of pediments and other forms that were popular in Russia and Europe, for example, the use of columns to decorate the facade of some entrance spaces or the change of form which happened in the design of doors, from rectangle to variety of shapes. The semi-circular form was one of the Qajar architectural features. This design was used in overdoors of many buildings, including palaces, houses, and caravanserais.

Ornament

Utilized kinds of traditional decoration with brick and different arabesque and geometrical patterns were other architectural features of historical entrances. Calligraphy was another decoration used in decorating facades. Architectural calligraphy was one of them and sometimes was evaluated as an ornamental motif.

Usually, different types of calligraphy were used in an entrance space. Types of geometrical, arabesque, and calligraphy patterns with different materials such as brick, tile, plaster, stone, and with textures and colours, created an ornament that had some sort of spiritual sense, aside from its beauty. The application of human, animal and practical elements such as weapons became common from the beginning of Qajar era. Coping from western arts however made an exquisite pattern for a short time but in general, weakened the evolution process of decorative patterns in entrance surfaces.

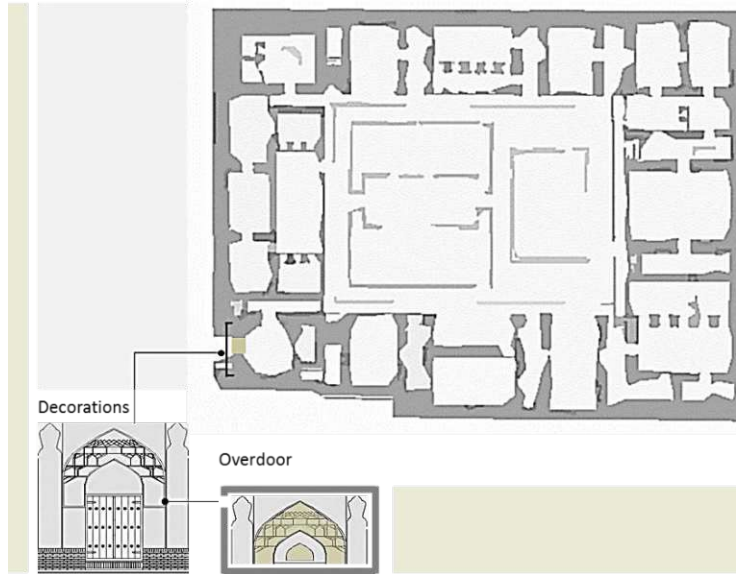


Figure 3-62 Ornament (Payamifar,2020)

The features of old-style entrance principles are summarized in (Table 3-6).

Table 3-6 Entrance principles

Principles		Features
Hierarchy		Organization of the zones
		Division of public and private zones
		Development of privacy, security, and peace
Privacy		Safety
		Peace
		Limitation of the direct visual connection
		Consideration of dignity and value
Axis		Qibla axis
		Symmetrical axis
		Indirect axis.
Symmetry		Parallelism
Access	Direct	As straight as possible
	Indirect	Gradual and respectful
	Spiral	Introverted and tortuous
Scale		Based on a human scale
Proportion	Wide	The height/width ratio is 1.5/2.5.
	Elevated	The height/width ratio is 1/2.5.
	Medium	The height/width ratio is 1/1.
Position	Position of entrance in relation to the passageway direction	Along the passageway direction
		At the turn of the passageway
		At the end of the passageway
		At the beginning of the passageway
	Position of entrance in relation to passageway edge	Along the passageway edge
		Further back from the passageway edge
		In the passageway zone
	Position of entrance space in relation to the passageway level	At the passageway level
		Higher than the passageway level
		Lower than the passageway level

Location		Near to one of the building corners
		Along with one of the symmetrical axes
		Along both symmetrical axes
		In the corners
		At different points
Connection		The entry and exit
Control		Authority of disconnection and reconnection by deciding
		Maximum privacy and security
Politeness		The tradition of welcome and escort
Number	Single entrance	Consideration of easy monitoring and high security
	Double entrance	Consideration of the heavy traffic
	Multiple entrances	Consideration of a large number of incomings
Façade	Single façade	Just on the outside
	Double façade	Both on the outside and inside
Decoration	Material	Materials such as brick, tile, stucco, and stone
	Design	Styles such as old-style, eclectic, and European
	Ornament	Patterns such as geometrical shapes, arabesque, and calligraphy

Zones

Each entrance space consists of one or more zones that each has certain perceptual and functional properties. These zones include frontage, portal, doorway, vestibule, corridor, iwan, and arcade, all of which are explained below.

Frontage

In some buildings, there was a big and wide space in front of the portal, named frontage.

One of the functions of frontage was to make the entrance space important and emphasize the differentiation between entrance and passageway. The frontage space was often designed and decorated with beautiful forms. Unfortunately, during the recent period, some incorrect decisions have destroyed some of these spaces. In some of these frontages that have been changed, the direction has been changed and in other ones, the visibility of passers was limited with planting on both of the paths.



Figure 3-63 Frontage (H. Soltanzadeh 2013)

Portal

Portal is an open and semi-covered space like iwan which was usually located in front of the entrance door and distinguished the access path from the passageway. Stopping and waiting to enter the building happened in this space. Most cases had two platforms next to the walls of the portal, which were used for waiting and gatherings or to take a rest.

The portal was generally designed higher than adjacent surfaces, while its role was to reflect the importance of the building and also was considered as a sign of its position in many buildings, the portal was decorated with tiles and inscriptions about the history of construction and religion.

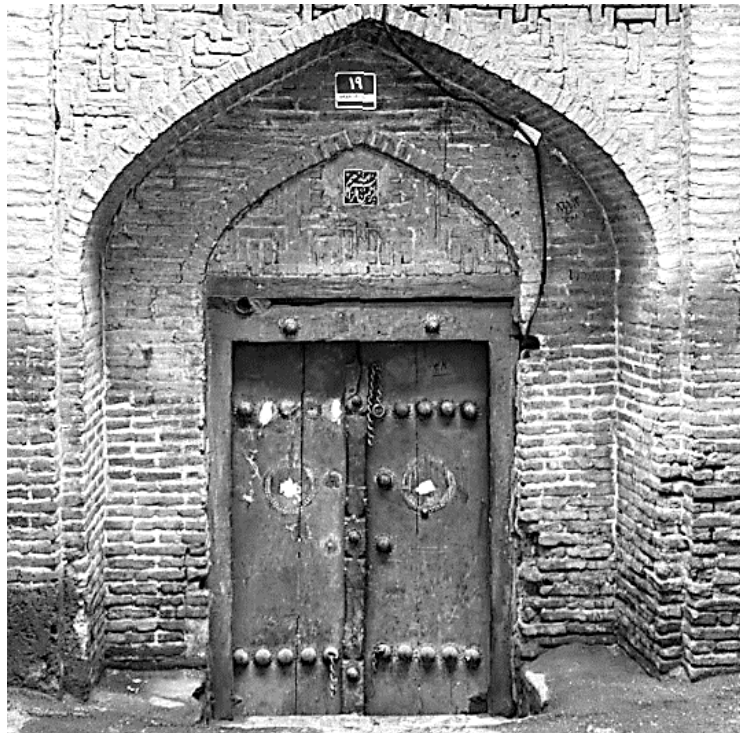


Figure 3-64 Portal

(Archives of the Cultural Heritage Organization 2008)

Doorway

The doorway is a small space where the entrance door is located. In the architectural definition, it is a space with two columns or walls on each side of the door frame. The top part of the doorway has a horizontal or arch shape. The arch was usually made of brick and the horizontal form was made of wood. In most buildings, the depth of doorways is 0.5m, but sometimes this size reaches up to 1.5m. The term “doorway” is sometimes used with other meanings, including “entrance space” in historical texts.

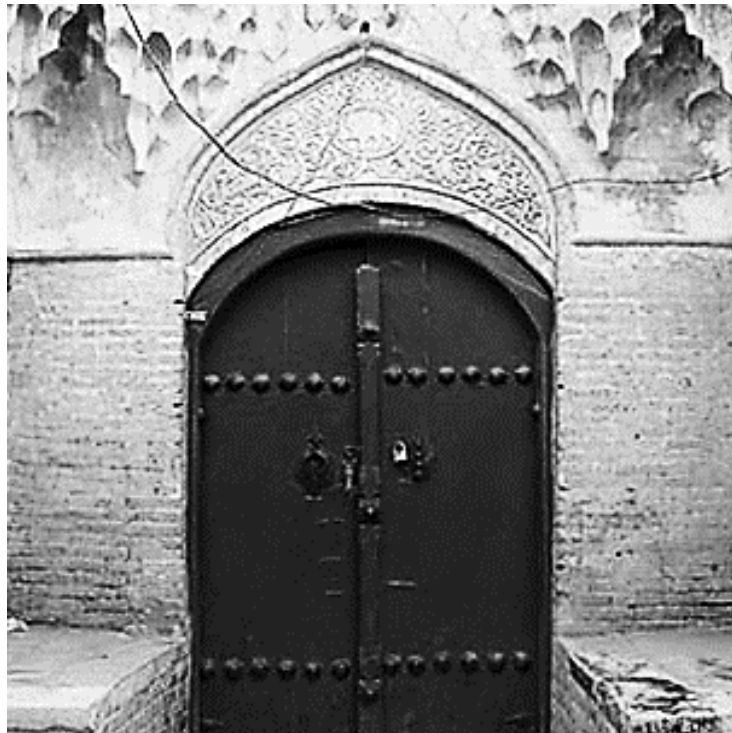


Figure 3-65 Doorway

(Archives of the Cultural Heritage Organization 2008)

Vestibule

A vestibule, which exists in most historical entrance spaces, is a space right after the doorway, used for dividing the path into two or more directions. In some public buildings or houses, there are two or more ways branched from the vestibule, each of which leads to a specific zone, including the open internal space.

In some buildings which have only one way from the vestibule, the vestibule had not the divisional function, but it was used as a space for waiting and also to make the entrance pathway magnificent. The vestibule was used for changing the pathway too. Vestibules have plans with octagonal or rectangular shapes. The vestibule of most homes has a low height, in proportion to the entrance space but the vestibules of the grate and big buildings are high and decorated with tiles, strapwork or other decorations. In big houses, services like staff's residence, store, stable and some other spaces were located beside the vestibule.



Figure 3-66 Vestibule

Corridor

The corridor is the simplest part of the entrance space, the most important role of which is making a connection and access between two locations. In some kinds of buildings like homes, changing the direction of pathway happened in this part, as a response to private issues, as it leads to the courtyard. A corridor is a narrow space in physical terms, but its width is determined proportionally to the function and number of users. Normally the width of a corridor is about 1 m in houses. The length of the corridor is variable and on average between 2 m and 10 m and even more in some cases. Corridor as an architectural space can be considered as a passing zone.



Figure 3-67 Corridor

Iwan

In the process of development and evolution of zones and components of the entrance space, iwan was also considered as part of the entryway. In this type of buildings, the corridor located along with the doorway and portal's axes was attached to the middle of the iwan, adjacent to the yard and so the iwan had a communicational function. Of course, as already noted in the following evolution of entrance design, the function of this space was developed, based on its connection between the vestibule and the courtyard, by the corridors which were located beside the iwan. In this case, iwan was the main space.



Figure 3-68 Iwan

Arcade

arcade is a part of the pathway with series of arches carried by columns or piers. a passageway between arches and a solid wall, a covered walkway to create a desired shade for those who intend to move or stop. The top of some arcades of residential neighbourhoods provided the space for accommodation. In some of the buildings, a part of the pathway built in front of the entrance was covered. The arcade was usually built-in front of entrances which did not have a large frontage.



Figure 3-69 Arcade

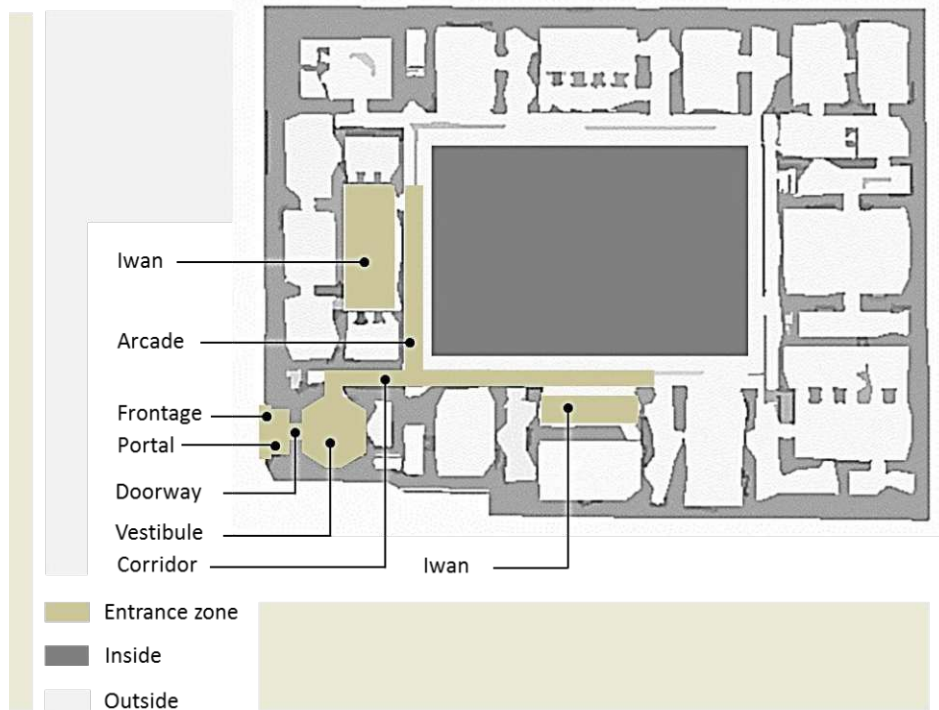


Figure 3-70 Entrance zones of a traditional house – Plan (Payamifar,2020)

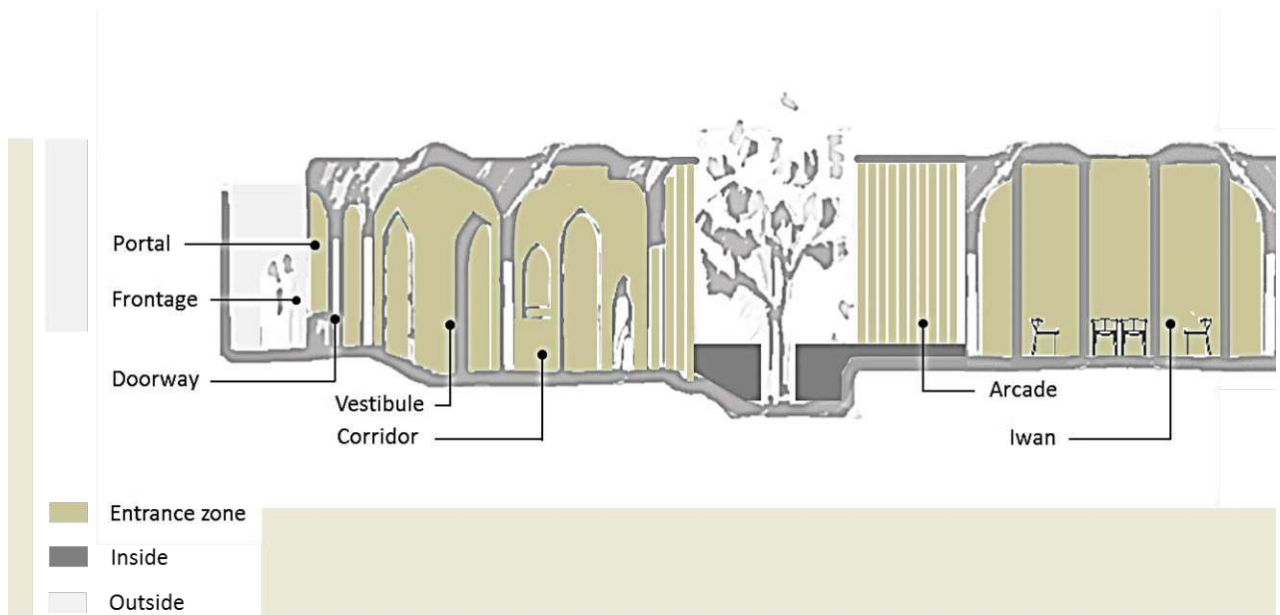


Figure 3-71 Entrance zones of a traditional house – Section (Payamifar,2020)

Components

The constituent components of entrance spaces include door, knocker, threshold, platform, overdoor, minaret, clock, stone through, pond, and chain, all of which are explained separately.

Door

One of the important components of the entrance space is the door, the main function of which is controlling the connection between interior and exterior. The dimension and coordination of the door in each building depend on its function. The doors were usually rectangular and made of wood, but there were also other forms of the door, the history of which dates back to the Qajar period.

In some religions, the entrance doors were important and usually decorated with wood carvings and paintings. However, the doors of residential buildings were designed simply and had no decorations.

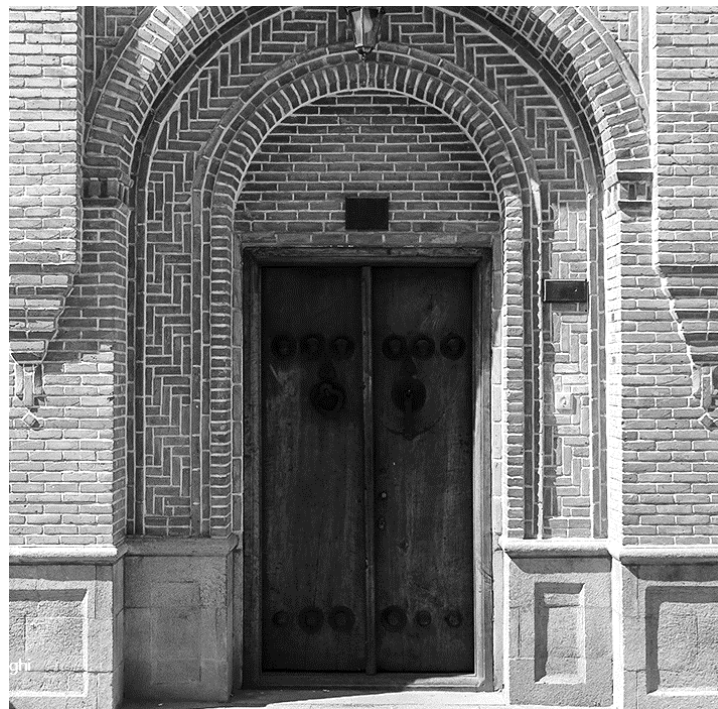


Figure 3-72 Door

Knocker

The function of the knocker on the door was informing. There were two iron knockers on each door, each of which was fixed on one part of the door. One of them was called "Hammer²⁴", which sounded bass, and the other one was named "Ring²⁵", which sounded treble. The hammer was usually installed on the right side of the door, while the ring was placed on the left.

The hammer was used for men and the ring for women, to inform the ones at home about the sexuality of guests and let them prepare themselves. The knocker of some important buildings had a beautiful and impressive design.

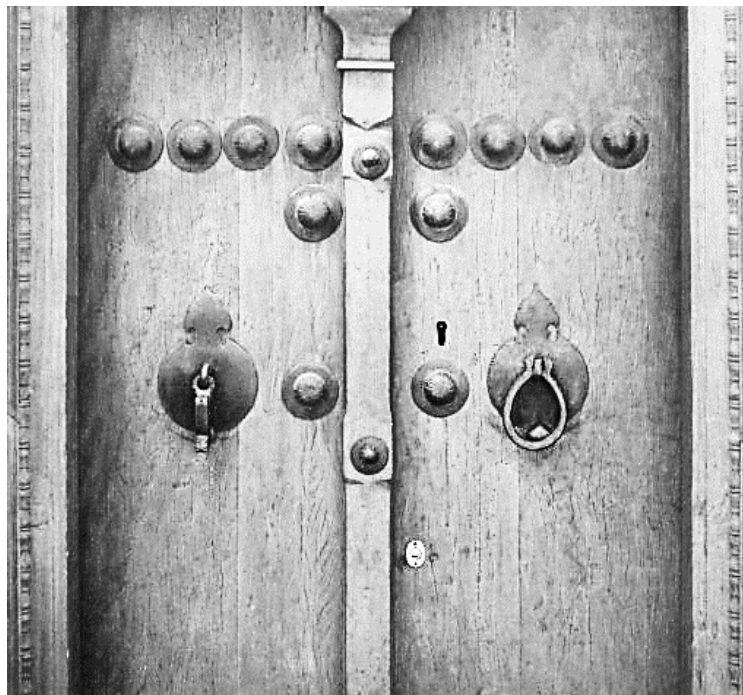


Figure 3-73 Knocker

²⁴ In Persian: /kobe/(كوبه) [ب- / ب-] or /chakosh/چکش

²⁵ In Persian: /halqe/حلقه

Threshold

The lowest part of the door frame was named threshold. In some buildings, the threshold was made a little higher to distinguish between two spaces and make people enter with respect and modesty. In a few cases, the threshold was considered important, and people cared not to step on it, or even more, to kiss it when they entered special buildings.



Figure 3-74 Threshold

Platform

Usually designed as couples on each side of the portal, platforms were used for sitting, waiting and refreshment. It also was a place to rest and talk, especially in residential entrances where this function was more prominent.

Moreover, the vestibules also had the same space with similar functions. The platform was usually made of stone, except for some buildings for which brick was preferred. This element does not exist in contemporary buildings.



Figure 3-75 Platform

Overdoor

The most significant components of entrance aesthetically were overdoors. Overdoor was a part of the entrance space surface, above the door. This surface was decorated in some entrance spaces, especially in grate buildings, and was the most decorative part in each building's exterior façade. The decorations included brickwork, tilework, stucco, etc. Sometimes the architect's name was also written in the inscription of overdoor²⁶.



Figure 3-76 Overdoor

²⁶ A decoration, usually a painting on ceramic, brick work, that is placed above a doorway.

Opening

Another architectural element, which was usually considered above the entrance door in some houses, was the opening. This approach was based on a reason, which was the darkness of vestibules that did not have enough light. In this case, an opening was located above the door as a solution, and a lantern to provide enough light during the night. The entrance openings of private buildings were fenced in order to protect the safety of residents.



Figure 3-77 Opening.

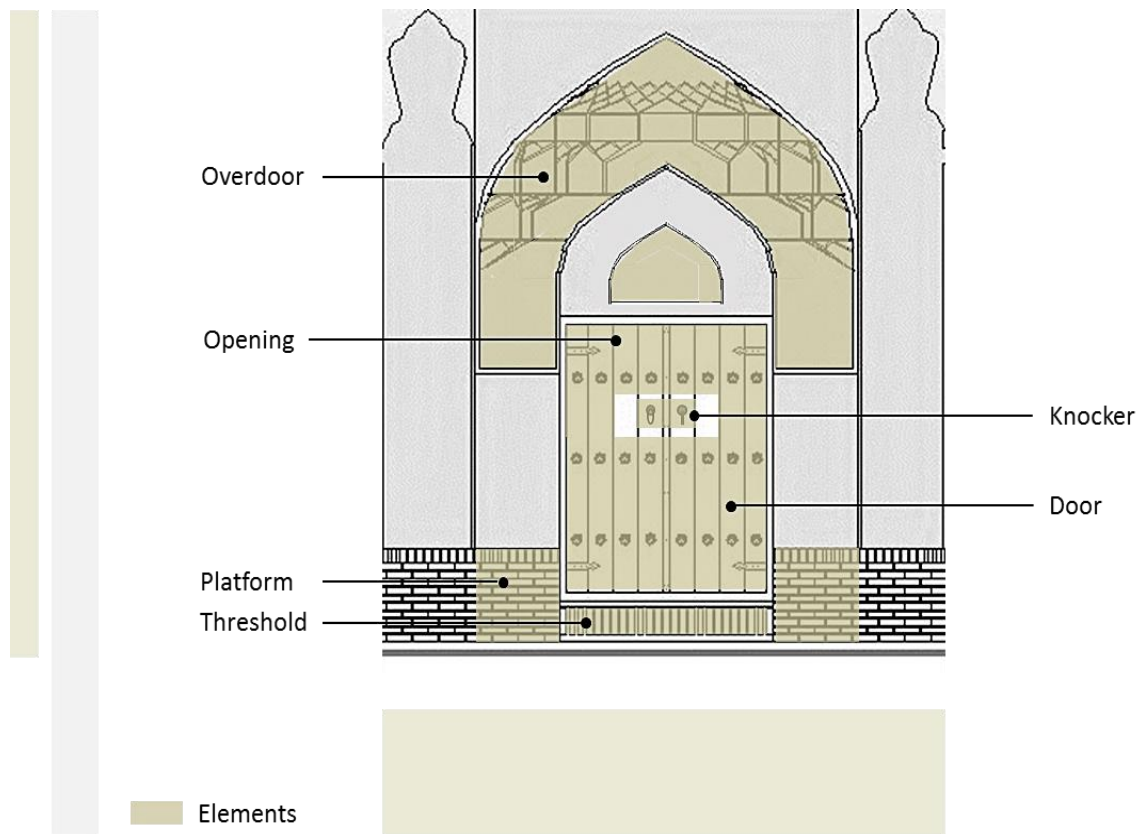


Figure 3-78 Entrance components of a traditional house – Elevation (Payamifar,2020)

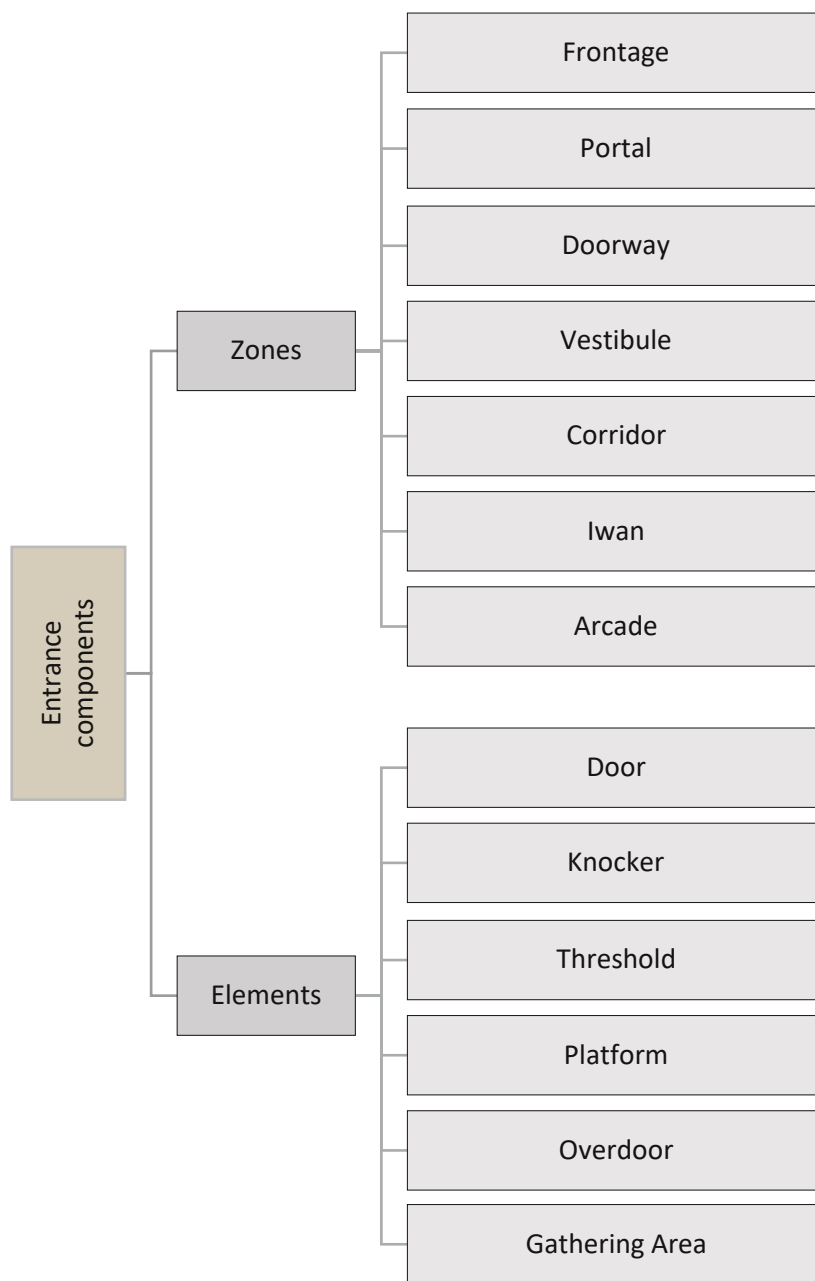


Diagram 3-22 Entrance components

3.3 Summary

The summary of this chapter combines literature behind Persian inputs, by exploring the paths of its features in the history and going through an examining of the cultural factors. To gain a clear view of the existing literature, the investigation was performed through a hierarchical order, considered to lead the flow of information from the whole to the exact interest of the study.

The literature review started with defining the spatial scope of the research, as state divisions, taking a look at the valuable history of Iran, along with its art and cultural background. In order to reduce the research scope gradually, the whole characteristics of Iranian architecture, which are considered as the basic information to achieve a general view, were precisely limited to the residential cases, and by that, the desire to take a closer look at the personal units came true. The consideration of housing history and home principles was also among the study concerns, due to their general specifications reflecting through the entry, which is the aim of this study.

Reviewing the most related sources to the exact entrance topic and categorizing them into two main parts, which are the principles and the components, this chapter simply provided a categorized set of contents at the end, which can take the role as basic knowledge of the research. However, as a reminder, the knowledge barely gives any advice to get a practical result out of the collected contents. In other words, the features, the history behind them, and the principles, all of which are somehow related to the zones and elements, are perfectly described and distinguished, but the literature is incapable of making any functional suggestions to utilize or update the mentioned features in the present. This, as the considered gap, is what this study intends to achieve.

It should be noted that despite providing complete information about the characteristics of historical entrances, the previous research is mostly theoretical and focused on outstanding residential cases. This makes it difficult to identify these characteristics in the architectural history of Shiraz houses, and also in all types of housing units, regardless of the owner's social status. On the other hand, it is not possible to identify features that can be utilized or updated to match the contemporary issues with this general approach, and this is inherently something

beyond the scope of the literature approach. Therefore, researching with a mixed method in this regard is needed to answer the main research purpose of the study, which is to specify the historical patterns of Shiraz residential entrances that have the potential to be reused in contemporary architecture.

The approach intended to suggestions out of this study consist of two methods. To fill the mentioned gap, it is necessary to study the case to identify, validate and verify the general characteristics of entrance in all residential cases of Shiraz. On the other hand, in order to extract the valuable characteristics, one must first identify the needs of contemporary society. Therefore, in the next stage, the research will need a methodology and design in this regard.

Chapter 4

Data Analysis and Results

Data Analysis and Results

1.1 Introduction

As stated in the previous chapters, the purpose of this study was to investigate and extract the features of Shiraz historic residential entrances, which have the potential to transform into contemporary features, as practical suggestions for current architectural issues.

The target, which was to identify and extract the valuable features, was achieved through the implication of selected methodology, i.e. the mixed-method, consisting of both qualitative and quantitative nature. After the primary data collection, which provided the basic information and a review of the background, the combination of two methods - case study and questionnaire – was implied.

The first method, i.e. case study, validated the existence of literature features in the architectural style of Shiraz residential entrances, as an answer to the first sub-question, which demanded to confirm and present these features.

The second one, mentioned as the questionnaire and a follow-up to the previous step, provided an evaluation of current demands about the ideal entrance space of the society, which answered the second sub-question, the subject of which was to separate the valuable features.

The data collected by the above instruments were analyzed, by categorization and interpretation of the case study features through coding and theming, and through the utilization of Excel and SPSS, to provide outputs from the questionnaire results.

This chapter will present the categorized outputs of the collected data in the process, and the results.

4.1 Descriptive Findings

This section provides a narrative summary of the sample characteristics of the houses (for case study) and sample demographics of the participants (for questionnaire). It establishes the number of subjects, along with the sample characteristics, such as social class and historical period for the qualitative method, and gender, age, social class, and type of residence for the

quantitative method. Graphic organizers, such as tables and charts are used to provide further clarification and promote readability in the organization and presentation of the coded data.

4.1.1 Case Study

In this section, the aim is to provide a background of the case study houses, in terms of variables, such as social class and historical period. Therefore, before analyzing the characteristics of interest in the research, the descriptive results of houses, obtained by qualitative analysis of specifications and coding are discussed. The results of the analyzes performed on the studied samples are presented in the following tables and also charts are used to show the distribution of the mentioned factors in the selected sample.

The topics that are descriptively analyzed in this section are:

- Social class
- Historical period

4.1.1.1 Social class

Table 4-2)

and (Diagram

4-1 Social class

distribution of

the houses under study) provide information about the social class of the samples.

As can be seen in Table and Chart 4-1, out of a total of 10 houses selected for the case study, which their information is available, N cases (N%) are from the upper class, N cases (N%) are from the middle class, and N cases (N%) are from the lower class. (Table 4-1 Social class distribution of the houses under study

Table 4-1 Social class distribution of the houses under study

Social class	Frequency	Percentage frequency
Upper class	5	50
Middle class	3	30
Lower class	2	20
Total	10	100

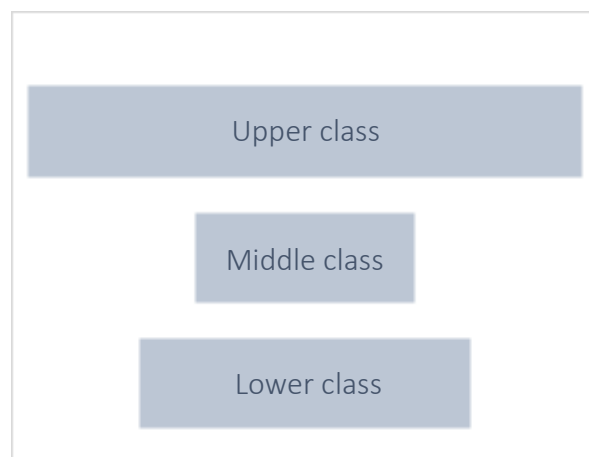


Diagram 4-1 Social class distribution of the houses under study

As described in the table and diagram above, the distribution of the social class is determined separately. The results simply show that ...

4.1.1.2 Historical Period

Out of 10 houses selected for the case study, 5 cases (50%) belong to the Qajar period, 2 cases (20%) to the Pahlavi period, and 3 cases (30%) to both periods with a combined style. The table and chart below provide information about the mentioned historical periods of these houses.

Table 4-3 Historical period distribution of the houses under study

Historical period	Frequency	Percentage frequency
Qajar	5	50
Pahlavi	2	20
Combined	3	30
Total	10	100

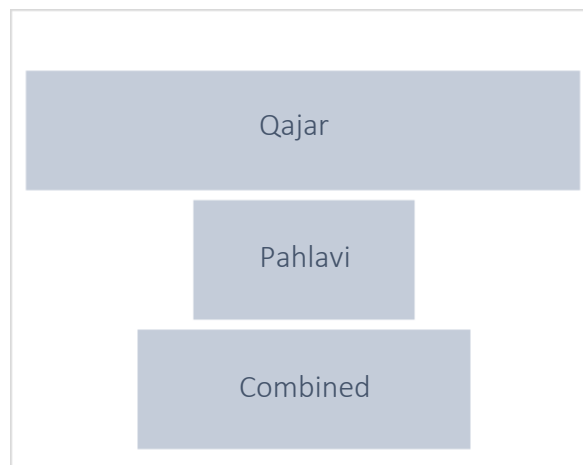


Diagram 4-2 Historical period distribution of the houses under study

Based on the information of the above table and diagram, it can be said that half of the houses belong to the Qajar period, which includes a higher percentage than other situations.

4.1.2 Questionnaire

This section deals with the background of the questionnaire participants, from the viewpoint of variables, like gender, age, social class, and type of residence. To analyze the special characteristics, as the targets of study, first, the descriptive results related to the participants, obtained by quantitative analysis of Excel have to be reviewed. These results are presented with tables and histograms, to discuss the distribution of factors.

The topics that are descriptively analyzed in this section are:

- Gender
- Age
- Social class
- Type of residence

4.1.2.1 Gender

As listed in Table and Diagram 4-4, out of 30 people who answered this questionnaire, 17 (56.66%) were male and 13 (43.33%) were female. This information is presented in (Table 4-5) and (Diagram 4-4).

Table 4-5 Gender distribution of the survey participants

Gender	Frequency	Percentage frequency
Male	17	56.66
Female	13	43.33
Total	30	100

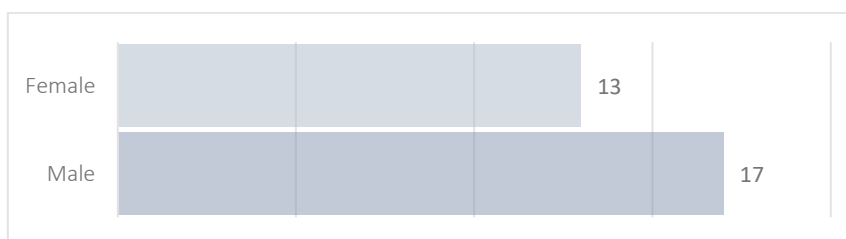


Diagram 4-4 Gender distribution of the survey participants

As can be seen, the distribution of gender is expressed in the table and chart, specified separately for males and females, which simply shows that the population of male samples is larger than that of females.

4.1.2.2 Age

Out of 30 people who answered the questions, 2 people (6.66%) are 20 to 30 years old, 9 people (30%) between 30 to 40 years old, 14 people (46.66%) 40 to 50 years old and 5 people (16.66%) more than 50 years old. **(Fehler! Verweisquelle konnte nicht gefunden werden.)** and (Diagram 4-5 Diagram 4-5 Age distribution of the survey participants) provide information on the age of the samples.

Table 4-6 Age distribution of the survey participants

Age	Frequency	Percentage frequency
20 - 30	2	6.66
30 - 40	9	30
40 - 50	14	46.66
More than 50	5	16.66
Total	30	100

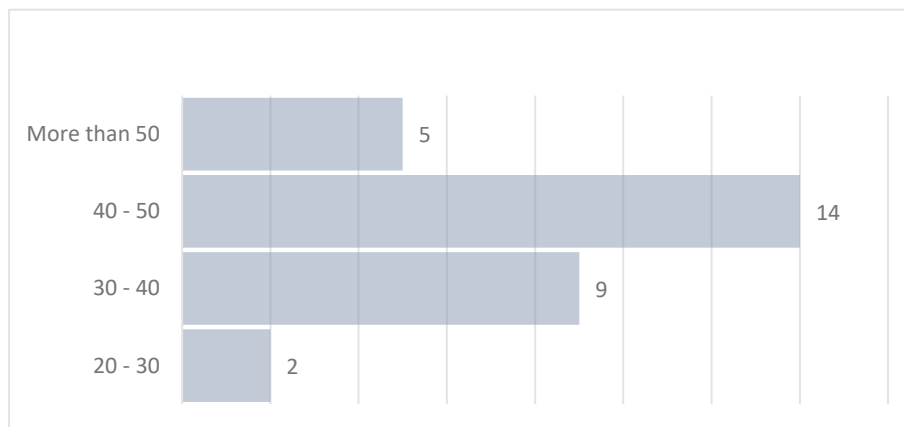


Diagram 4-5 Age distribution of the survey participants

As shown in the table and chart above, the age distribution of the participant of this survey indicates that most of the people surveyed are 30 to 40 years old.

4.1.2.3 Social Class

The next topic relates to the social class of the participants, showing that 8 people (6.66%) belong to the upper class, 17 people to the middle class (30%), and 5 people (46.66%) to the lower class, the data of which is provided in the (Table 4-7) and (Diagram 4-6).

Table 4-7 Social class distribution of the survey participants

Social class	Frequency	Percentage frequency
Upper class	8	26.66
Middle class	17	56.66
Lower class	5	16.66
Total	30	100

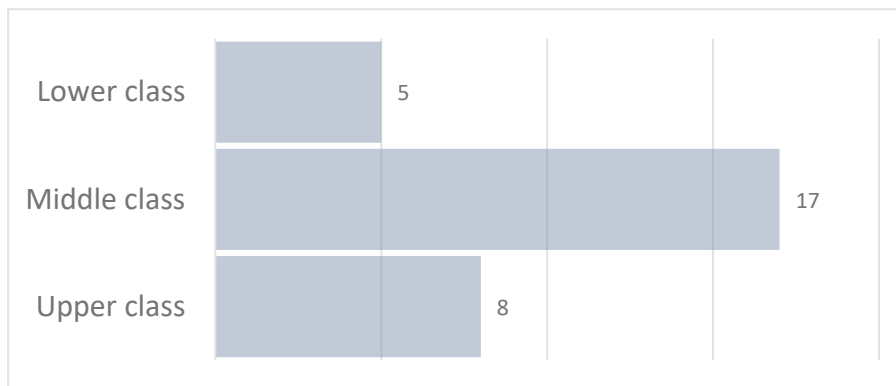


Diagram 4-6 Social class distribution of the survey participants

According to the table and chart, the distribution of participants of social class shows that most of the people surveyed take place in the middle class.

4.1.2.4 Type of Residence

The data collected on the field of residence type of participants shows that 8 people (6.66%) belong to the upper class, 17 people to the middle class (30%), and 5 people (46.66%) to the lower class, the data of which is provided in (Table 4-8) and (Diagram 4-7).

Table 4-8 Type of residence distribution of the survey participants

Type of residence	Frequency	Percentage frequency
Apartment	18	60
House	12	40
Total	30	100

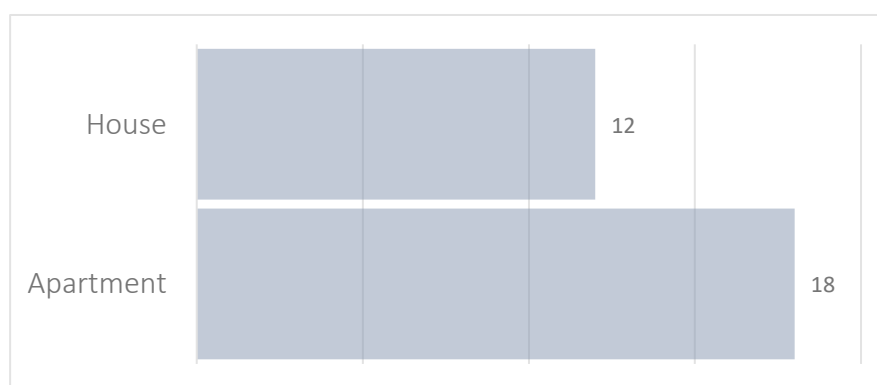


Diagram 4-7 Type of residence distribution of the survey participants

It can be deduced from the table and chart above that the population of apartment residents is more than those who live in houses.

4.2 Data Analysis Procedures

This section presents a description of the process that was used to analyze the data. As this research was guided by research questions, data analysis procedures were framed relative to each research question. The data were also organized by Excel and SPSS, or themes and codes as deemed appropriate according to the nature of the methodology.

4.2.1 Verification

The usability of research measurements is dependent on their validity and reliability, the confirmation of which is presented below.

4.2.1.1 Validity

As to verify the validity of each research methodology based on the same title from the previous chapter, different attempts have been made, which are described below.

Case Study

Based on the statements of the previous chapter, there is no specific test to validate of the case study method, but there are some ways to improve it, such as the use of multiple sources of evidence by Riege (2003). As the sample case studies were selected based on cultural heritage documents, their competence to provide required data is verified. As a detailed explanation, the samples were selected with consideration of their coincidence with the spatial and temporal scope of the study, i.e. Shiraz in Qajar and Pahlavi periods. As to make sure the cases reflect prominent features of Shiraz houses in this specific time zone, the sampling was also based on houses from all social classes. In the end, the efficiency of sample selection was confirmed by cultural heritage experts.

Questionnaire

As mentioned in the previous chapter, to verify the validity of the questionnaire, the content validity analysis was used. Doing so, firstly, the validity of library resources was improved as much as possible by selecting relevant questions to entrance design, from an authoritative book named "Home, Culture, Nature" by M. R. Haeri Mazandarani, as the origin of the questions. On the other hand, to ensure this validity, the questionnaire was also approved by

several experts including Sara Firoozi, Mohammad Soltani and Zahra Mahzoun of cultural heritage in shiraz.

4.2.1.2 Reliability

The reliability of the instruments utilized in this mixed-method study has to be verified separately for each of the methods considered, presented in the following.

Case Study

To confirm the reliability of case studies, and regarding the absence of any suitable measurements to achieve it, efforts have been made to assure congruence between research issues and features of case study design, based on the suggested techniques by Riege (2003). To do so, the stated problem of this study, which focuses on the absence of practical suggestions in the field of entrance design problems, was considered in the sampling, such that the cases act as reliable sources for inspiration.

Questionnaire

The reliability of the questionnaire was approved by Cronbach's alpha administration test. This test calculates the reliability of structures not absolutely, but according to the correlation of their structures with each other. Cronbach's alpha values can be interpreted based on the following format:

Table 4-9 Cronbach's alpha Values

Value	Status
> 0.9	Excellent
> 0.8	Good
> 0.7	Acceptable
> 0.6	Questionable
> 0.5	Weak

Table 4-10 Structure reliability test

Structure	Value
Principles	0.955
Zones	0.910
Components	0.755

As can be seen in (Table 4-10), (Table 4-9) Cronbach's alpha values for all structures are higher than the significance value of 0.7, which indicates the acceptable reliability of the research methodology.

4.2.2 Analysis Process

The framework of the data analysis process is relative to the research questions. The qualitative data was organized by coding procedures while getting results out of the quantitative data needs Excel and SPSS processes. The details of these two approaches are explained below.

4.2.2.1 Case Study

As this method is considered qualitative by nature, the analysis procedures are based on coding, tailored to the analytical approach. According to the case study analytical approach, which is thematic, the collected data went through a coding process, including the development of these codes into categories, and finally the development of mentioned categories into themes, in the following order:

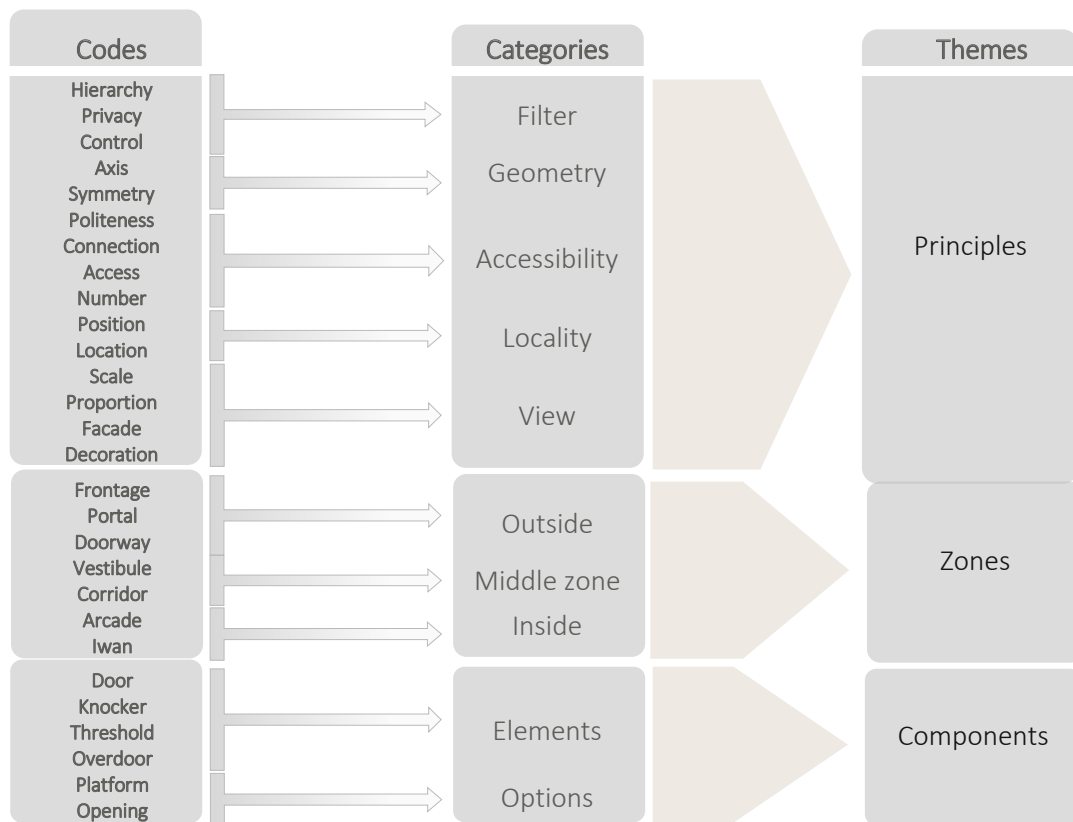


Diagram 4-8 Coding pattern

The above analytical approach is aligned with the first sub-question of the study, as it follows the features of interest, determined in the question, investigating, and categorizing them by nature and specifications.

4.2.2.2 Questionnaire

The other data analysis approach considered for this study is the statistical procedures, which are provided as SPSS and Excel results, per research questions. These statistical procedures are presented in the table below:

Given that the data have gone through this analysis from the answer to the second question of the research, the results were also presented according to the question, as to determinate the selected features of interest, based on participants perception.

Table 4-11 Statistical outputs

		Total accurate answers	27	24	25	27	27	19	18	27	28	22	27	26	26	26	27	12	28	23	22	21	27	24	30	26	0	23	2	26						
Disagree	C	10	3	0	25	25	16	14	0	0	8	4	8	8	2	4	4	3	17	1	16	0	4	0	0	26	3	18	0							
No idea	B	3	6	5	3	3	11	12	3	2	8	3	4	4	4	3	18	2	7	8	9	3	6	0	4	4	4	10	4							
Agree	A	17	21	25	2	2	3	4	27	28	14	23	18	18	24	23	8	25	6	21	5	27	20	30	26	0	23	2	26							
	M	17	Hierarchy		Symmetry		Proportion		Location		Connection		Politeness		Facade		Frontage		Doorway		Corridor		Arcade		Door		Knocker		Threshold		Platform		Overdoor		Opening	
	F	13	Privacy		Access		Scale		Position		Control		Number		Decoratation		Portal		Vestibule		Iwan		Arcade		Door		Knocker		Threshold		Platform		Overdoor		Opening	
	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3	4	5	6	7	1	2	3	4	5	6							
1	m	A	A	A	C	C	C	C	A	A	B	A	A	C	A	A	A	A	A	C	A	C	A	A	A	C	A	C	A							
2	f	A	A	A	C	C	B	C	A	A	B	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	C	A	C	A						
3	m	C	B	A	B	B	B	B	B	B	A	B	B	C	A	B	C	C	C	A	C	A	C	A	A	A	B	C	B	A						
4	f	A	A	B	C	C	C	C	A	A	A	A	A	A	A	A	B	A	B	A	B	A	C	A	B	C	B	C	B	A						
5	m	A	B	A	C	C	B	B	B	B	B	B	A	C	B	B	B	A	A	A	A	A	A	A	A	A	C	A	C	A						
6	f	C	A	B	C	C	C	A	A	A	B	A	C	B	B	A	B	B	C	B	C	B	C	A	A	C	A	B	A	A						
7	m	A	A	A	B	B	B	B	A	A	C	A	A	A	A	A	B	A	B	A	B	A	B	A	A	C	A	C	A	A						
8	m	B	A	A	C	C	C	C	A	A	B	A	B	B	A	A	C	A	C	B	C	A	C	A	A	C	A	C	A	A						
9	f	C	B	A	C	C	B	B	A	A	A	A	B	A	A	A	B	A	A	A	A	A	B	A	A	C	A	A	A	A						
10	m	A	B	A	A	A	C	B	A	A	A	B	A	A	A	B	B	A	C	A	C	A	B	A	A	C	A	B	A	A						
11	f	C	A	B	C	C	B	C	A	A	A	A	C	A	A	A	B	A	C	B	C	A	A	A	A	C	A	C	A	A						
12	m	A	A	A	C	C	C	A	A	A	C	A	A	C	A	A	B	A	B	A	B	A	B	A	A	A	C	A	C	A	A					
13	f	C	A	A	C	C	C	B	A	A	A	A	C	C	A	A	B	B	C	B	C	B	B	A	A	C	C	B	A	A						
14	m	A	C	A	C	C	C	C	A	A	C	C	A	A	A	C	A	A	C	A	C	A	A	A	A	C	A	C	A	A						
15	m	C	A	A	C	C	A	A	A	A	C	A	C	A	A	A	B	A	C	B	C	B	A	A	A	A	C	A	C	A	A					
16	f	C	A	A	C	C	C	C	A	A	B	A	C	A	A	A	A	A	B	A	B	A	A	A	A	C	A	B	A	A						
17	m	A	C	A	C	C	C	C	A	A	A	C	A	A	A	C	B	A	C	B	C	A	A	A	A	A	C	A	C	A	A					
18	f	A	A	A	C	C	B	C	A	A	A	A	A	A	A	A	B	A	B	A	B	A	B	A	B	B	B	B	B	B						
19	m	C	A	A	C	C	C	C	A	A	A	A	C	C	A	A	C	C	C	B	C	A	A	A	B	C	B	C	B	A						
20	f	A	A	A	C	C	C	B	A	A	C	A	A	A	B	A	A	A	A	A	A	A	A	A	A	C	A	C	A	A						
21	m	C	A	A	C	C	A	B	A	A	A	A	C	A	A	A	B	A	B	A	B	A	B	A	A	B	A	B	A	A						
22	m	A	A	B	C	C	C	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	C	A	A					
23	f	A	A	A	C	C	C	C	A	A	C	A	A	C	A	A	B	A	C	A	C	A	C	A	A	C	A	C	A	A						
24	m	A	C	B	C	C	B	B	A	A	B	C	A	A	A	C	B	A	C	A	C	A	A	A	A	C	A	A	A	A						
25	f	A	A	A	C	C	B	B	A	A	A	A	A	A	A	A	B	A	C	B	C	A	A	A	A	C	A	B	A	A						
26	m	A	A	A	C	C	C	C	A	A	C	A	A	C	A	A	A	A	B	A	B	A	B	A	B	C	B	C	B	A						
27	f	B	A	A	A	A	A	C	B	A	A	A	A	B	A	A	B	A	C	A	B	A	A	A	A	B	A	B	A	A						
28	m	B	B	A	B	B	B	B	A	A	B	A	B	A	B	A	C	C	C	C	C	C	A	A	A	C	A	C	A	A						
29	m	A	B	A	C	C	B	B	A	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A	C	A	B	A	A						
30	f	C	A	A	C	C	C	C	A	A	A	A	C	B	C	A	B	A	C	A	C	A	A	A	A	C	C	C	C	A						

4.3 Results

This section presents a summary and analysis of the data in a manner that relates to the research questions, including two parts dedicated to each methodology.

4.3.1 Case Study

The results of the case study method, which forms the qualitative phase of this research, was organized by theme, to answer the first sub-question, by discovering the architectural features of Shiraz residential entrances, belonged to Qajar and Pahlavi period. These results are presented with tables and figures. The samples of this case study are 10 historical houses from all social classes, belonging to the mentioned periods, some of which are related to both. The results section will be provided in two sections:

General characteristics, which presents the basic information of samples, such as their name, social class, historical period, address, and location.

Architectural analysis is divided into architectural documents, such as plan, section and perspective, and table of features. The samples locations are available in the appendix.

Hierarchy	Zone names in order of placement	Frontage	√ or ×	
Privacy	Privacy rate from 1 to 10	Portal	√ or ×	
Axis	Axes names	Doorway	√ or ×	
Symmetry	Symmetrical axes	Zones	Vestibule	√ or ×
Access	Access type (direct - indirect - spiral)		Corridor	√ or ×
Scale	Entrance scale ratio		Arcade	√ or ×
Proportion	Door proportions (wide – high - medium)		Iwan	√ or ×
Position	Position of entrance in relation to the passageway:			
	- (random – at the cross – at the ends)			
	- (aligned – latter – further)			
Location	- (equal – higher – lower)			
	- In the corners (near)	Components	Door	√ or ×
	- In the corners (exact)		Knocker	√ or ×
	- At the symmetrical axis (single)		Threshold	√ or ×
- At the symmetrical axis (double)	Platform		√ or ×	
Connection	Connection with the urban environment	Overdoor	√ or ×	
Control	Monitoring filters	Opening	√ or ×	
Number	Number of entrances			
Façade	- Single facade			
	- Double facade			
Decoration	Decorations			

Table 4-12 Sample Features

4.3.1.1 Case I

(Appendix-Figure 1)

I. General Characteristics

House name	Social class	Historical period
Mohammadzadeh	Middle class	Pahlavi
Address: Teymouri Street, Seyyed Zulfiqar Passage, Alley next to Seyyed Zulfiqar Mosque.		

II. Architectural Analysis

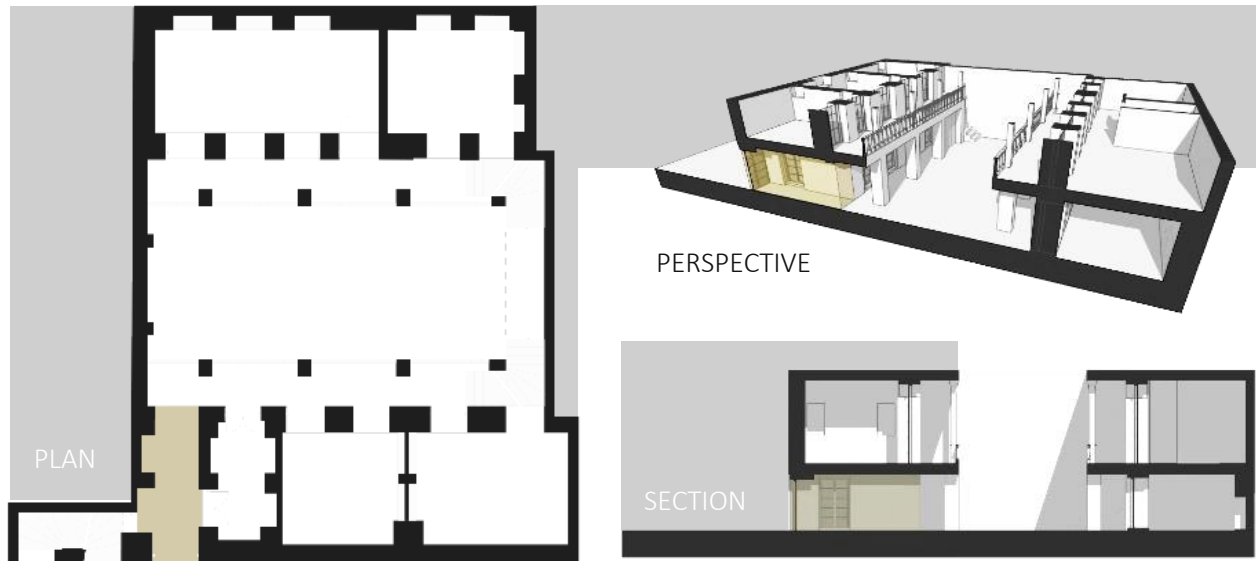


Figure 4-1 Case I (Payamifar,2020)

Table 4-13 Case I Features

Principles	Hierarchy	Corridor – Arcade – Iwan	Zones	Frontage	×
	Privacy	2/10		Zones	Portal
Axis	Longitudinal axis in the middle	Doorway	×		
Symmetry	Longitudinal symmetry	Vestibule	×		
Access	Direct (yard) – Indirect (balcony)	Corridor	√		
Scale	1:3	Arcade	√		
Proportion	Medium	Iwan	√		
Position	Random – Equal – Lower (both)	Components	Door		√
Location	In the corners (near)		Knocker	×	
Connection	-		Threshold	×	
Control	1 filter		Platform	×	
Number	2 entries		Overdoor	×	
Façade	-		Opening	√	
Decoration	-				

4.3.1.2 Case II

(Appendix-Figure 2)

I. General Characteristics

House name	Social class	Historical period
Moqaddas	Upper class	Qajar – Pahlavi
Address: Gowd-e-Araban Neighbourhood, Lotfali Khan Zand Street, in front of Roozbahan Street.		

II. Architectural Analyze

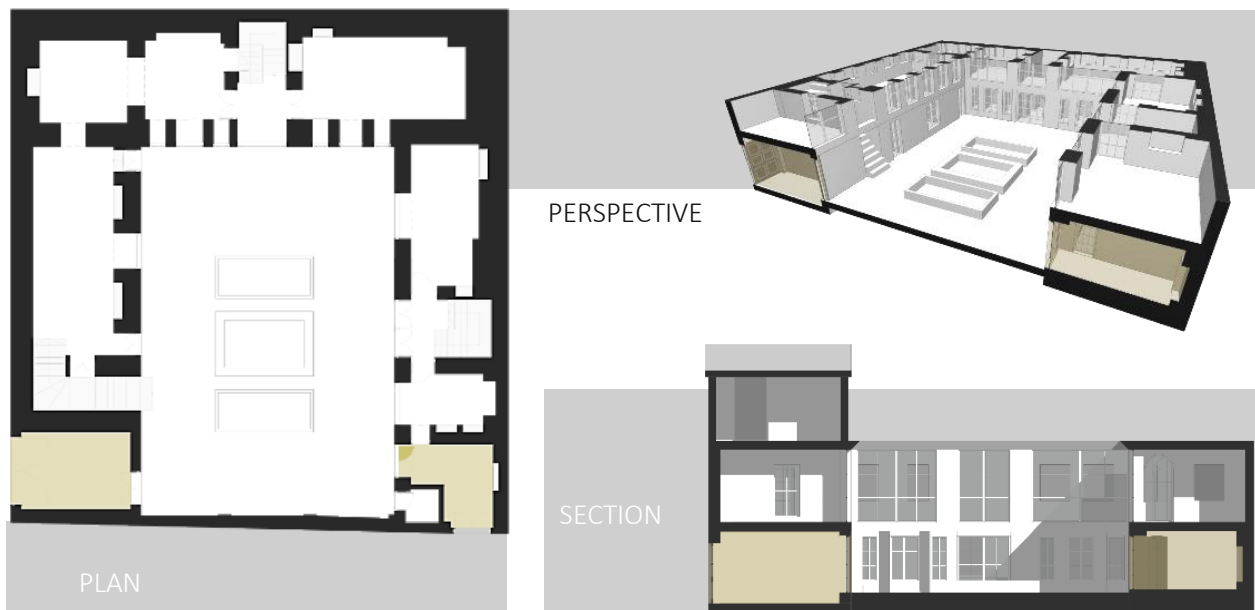


Figure 4-2 Case II (Payamifar,2020)

Table 4-14 Case II Features

Principles	Hierarchy	Corridor	Zones	Frontage	×
	Privacy	3/10		Portal	×
Axis	-	Doorway	×		
Symmetry	-	Vestibule	×		
Access	Direct	Corridor	√		
Scale	1:1	Arcade	×		
Proportion	Wide	Iwan	×		
Position	At the cross – Aligned – Equal (both)	Components	Door	√	
Location	In the corners (near)		Knocker	×	
Connection	-	Threshold	×		
Control	1 filter	Platform	×		
Number	2 entries	Overdoor	√ - ×		
Facade	Single facade	Opening	√ - ×		
Decoration	Rubble stone				

4.3.1.3 Case III

I. General Characteristics

House name	Social class	Historical period
Pesaran	Upper class	Qajar
Address: Ishaq Beyg Neighbourhood, Lotfali Khan Zand street		

Architectural Analyze

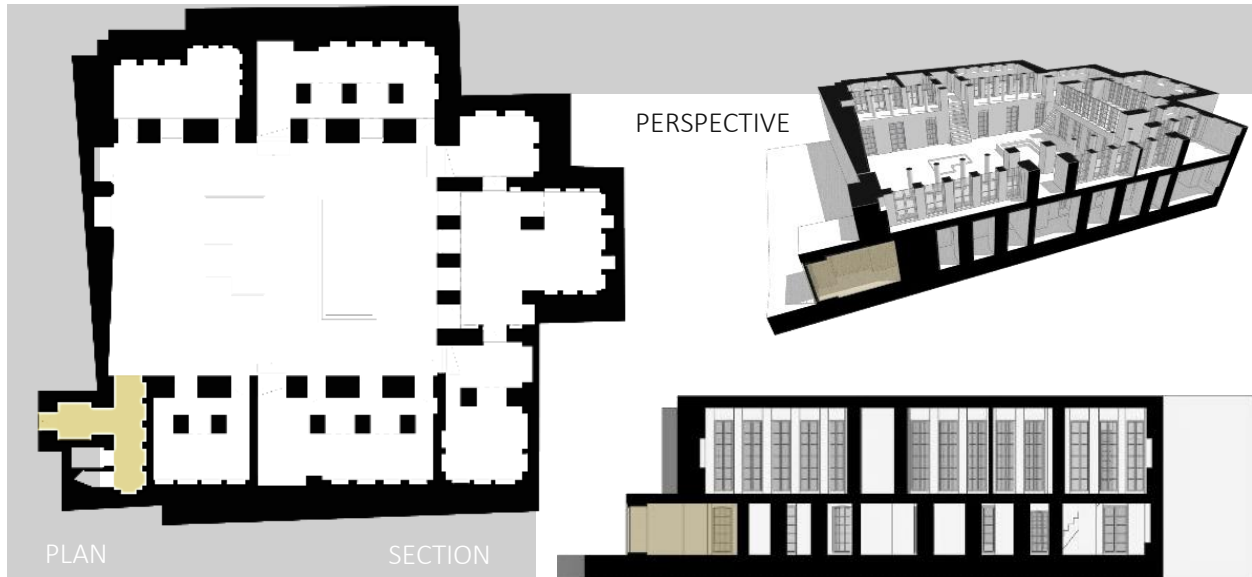


Figure 4-3 Case III (Payamifar,2020)

Table 4-15 Case III Features

Principles	Hierarchy	Vestibule – Corridor	Zones	Frontage	×
	Privacy	4/10			Portal
Axis	-		Doorway	✓	
Symmetry	Longitudinal symmetry		Vestibule	✓	
Access	Indirect		Corridor	✓	
Scale	1:3		Arcade	✓	
Proportion	Elevated		Iwan	✓	
Position	At the cross – Aligned – Lower		Door	✓	
Location	In the corners (nears)		Knocker	✓	
Connection	-		Threshold	×	
Control	2 filters		Platform	×	
Number	1		Overdoor	✓	
Façade	Two facades		Opening	×	
Decoration	Stone – Brick work				

4.3.1.4 Case IV

(Appendix-Figure 3)

I. General Characteristics

House name	Social class	Historical period
Pishevvari	Upper class	Qajar
Address: Lab-e-Ab neighbourhood, Chavosha Alley.		

II. Architectural Analyze

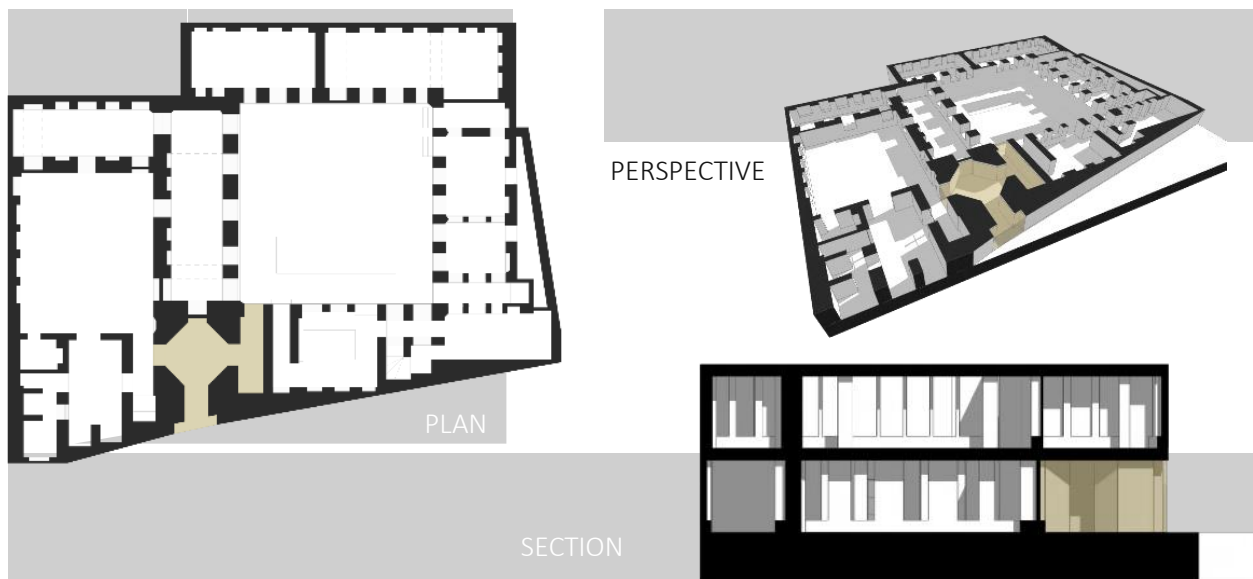


Figure 4-4 Case IV (Payamifar,2020)

Table 4-16 Case IV Features

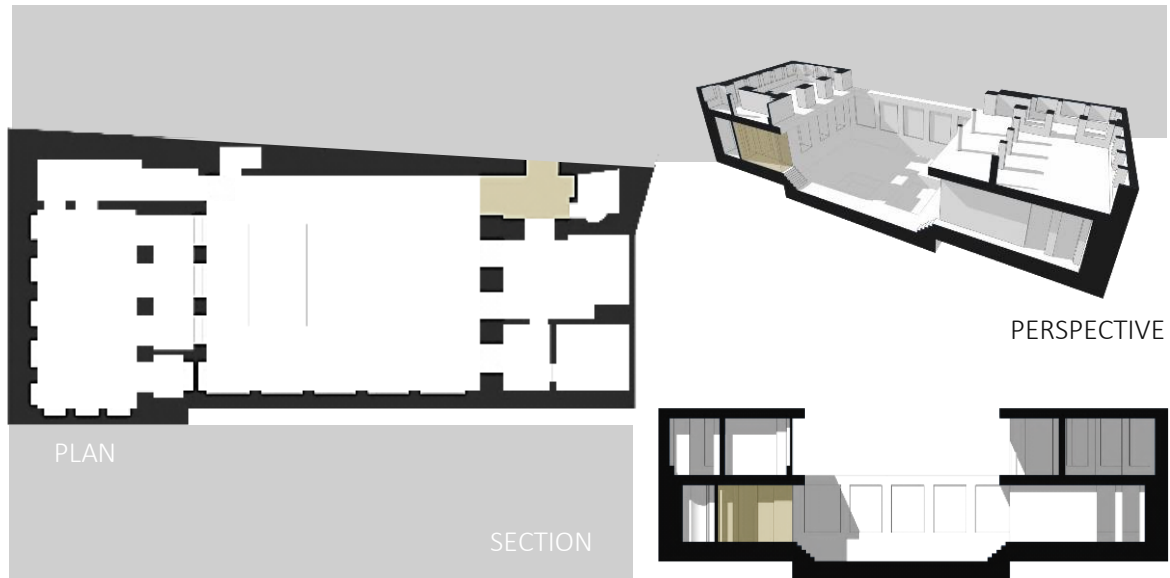
Principles	Hierarchy	Corridor – Vestibule – Corridor – Iwan	Zones	Frontage	×
	Privacy	6/10		Portal	√
Axis	Transverse axis	Zones	Doorway	×	
Symmetry	-		Vestibule	√	
Access	Indirect		Corridor	√	
Scale	1:2		Arcade	×	
Proportion	Medium		Iwan	×	
Position	Random – Aligned – Equal		Components	Door	√
Location	At symmetrical axis (single)			Knocker	√
Connection	-	Threshold		×	
Control	3 filters	Platform		√	
Number	1 entry	Overdoor		√	
Façade	Two facade	Opening		×	
Decoration	Stone - Brickwork				

4.3.1.5 Case V

(Appendix-Figure 4)

I. General Characteristics

House name	Social class	Historical period
Poostfroush	Lower class	Qajar
Address: Sar-e-Bagh Neighbourhood, Alley behind Shohada Mosque.		



II. Architectural Analyze

Figure 4-5 Case V (Payamifar,2020)

Table 4-17 Case V Features

Principles	Hierarchy	Corridor	Zones	Frontage	×
	Privacy	3/10			Portal
Axis	-		Doorway	×	
Symmetry	Longitudinal symmetry		Vestibule	×	
Access	Indirect		Corridor	√	
Scale	Medium		Arcade	×	
Proportion	1:3		Iwan	√	
Position	Random – Aligned – Equal				
Location	In the corners (near)		Door	×	
Connection	-		Knocker	×	
Control	1 filter		Threshold	√	
Number	1 entry		Platform	×	
Façade	Single façade		Overdoor	√	
Decoration	-		Opening	√	

4.3.1.6 Case VI

(Appendix-Figure 5)

I. General Characteristics

House name	Social class	Historical period
Rasouli	Middle class	Qajar
Address: Behind Atiq Grand Mosque, Mokhtari Alley.		

II. Architectural Analyze

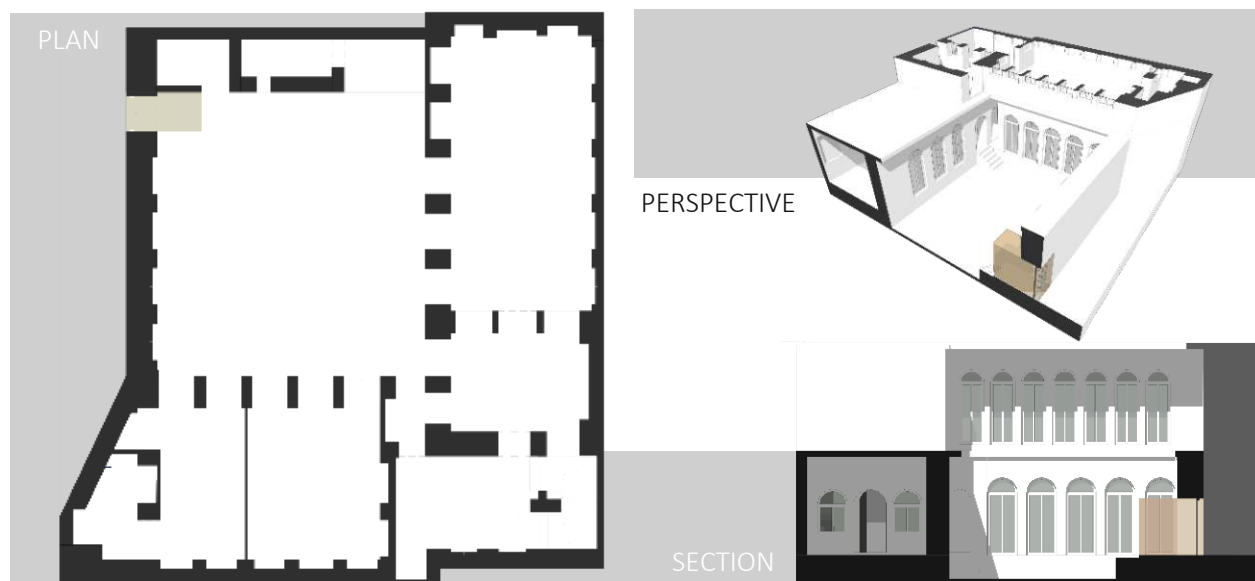


Figure 4-6 Case VI (Payamifar,2020)

Table 4-18 Case VI Features

Principles	Hierarchy	Arcade	Zones	Frontage	×
	Privacy	2/10			Portal
Axis	-		Doorway	×	
Symmetry	-		Vestibule	×	
Access	Direct		Corridor	×	
Scale	1:3		Arcade	√	
Proportion	Medium		Iwan	×	
Position	Random – Aligned – Lower				
Location	In the corners (near)				
Connection	-		Components	Door	√
Control	-			Knocker	×
Number	1 entry			Threshold	×
Façade	-			Platform	×
Decoration	-			Overdoor	√
				Opening	×

4.3.1.7 Case VII

(Appendix-Figure 6)

I. General Characteristics

House name	Social class	Historical period
Razmjou	Middle class	Pahlavi
Address: Gowd-e-Araban Neighbourhood, Lotfali Khan Zand Street, Triakchi Alley.		

II. Architectural Analyze

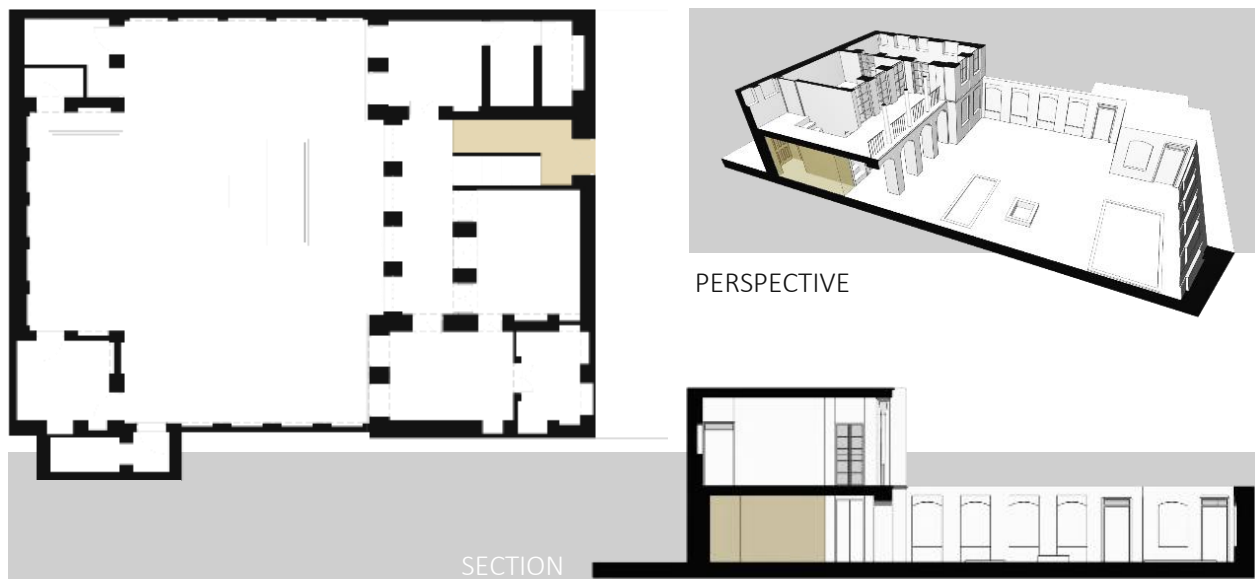


Figure 4-7 Case VII (Payamifar,2020)

Table 4-19 Case VII Features

Principles	Hierarchy	Corridor – Arcade – Iwan	Zones	Frontage	×
	Privacy	3/10		Zones	Portal
Axis	-	Doorway	×		
Symmetry	Longitudinal symmetry	Vestibule	×		
Access	Direct	Corridor	√		
Scale	1:3	Arcade	√		
Proportion	Medium	Iwan	√		
Position	Random – Aligned – Equal	Components	Door		√
Location	In the corners (near)		Knocker	√	
Connection	-		Threshold	×	
Control	1 filter		Platform	×	
Number	1 entry		Overdoor	√	
Façade	Single façade		Opening	×	
Decoration	-				

4.3.1.8 Case VIII

(Appendix-Figure 7)

I. General Characteristics

House name	Social class	Historical period
Sarraf	Lower class	Qajar – Pahlavi
Address: Ahmadi Street, Khanghah Ahmadi Alley.		

II. Architectural Analyze

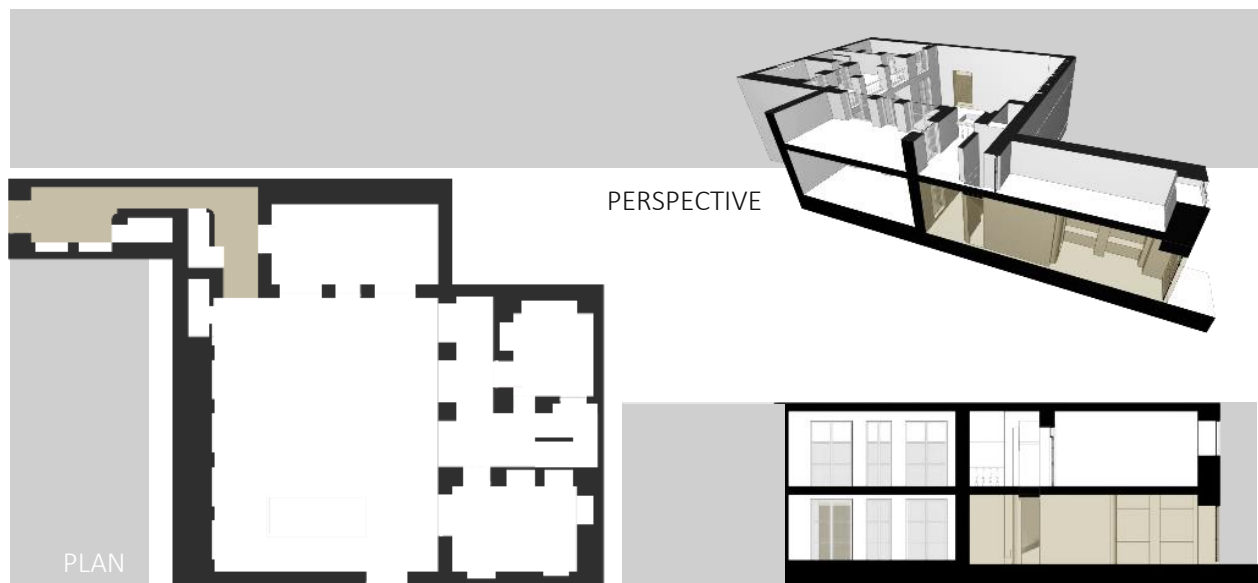


Figure 4-8 Case VIII (Payamifar,2020)

Table 4-20 Case VIII Features

Principles	Hierarchy	Corridor	Zones	Frontage	✓
	Privacy	5/10			Portal
Axis	-		Doorway	×	
Symmetry	-		Vestibule	×	
Access	Spiral		Corridor	×	
Scale	1:3		Arcade	×	
Proportion	Medium		Iwan	✓	
Position	At the ends – Aligned – Higher				
Location	In the corners (near)			Door	×
Connection	-		Components	Knocker	×
Control	1 filter			Threshold	×
Number	1 entry			Platform	✓
Façade	-			Overdoor	×
Decoration	-			Opening	×

4.3.1.9 Case IX

(Appendix-Figure 8)

I. General Characteristics

House name	Social class	Historical period
Shahnaz	Upper class	Qajar – Pahlavi
Address: Teymouri Street, Seyed Zulfiqar Passage, Behind the gym.		

II. Architectural Analyze

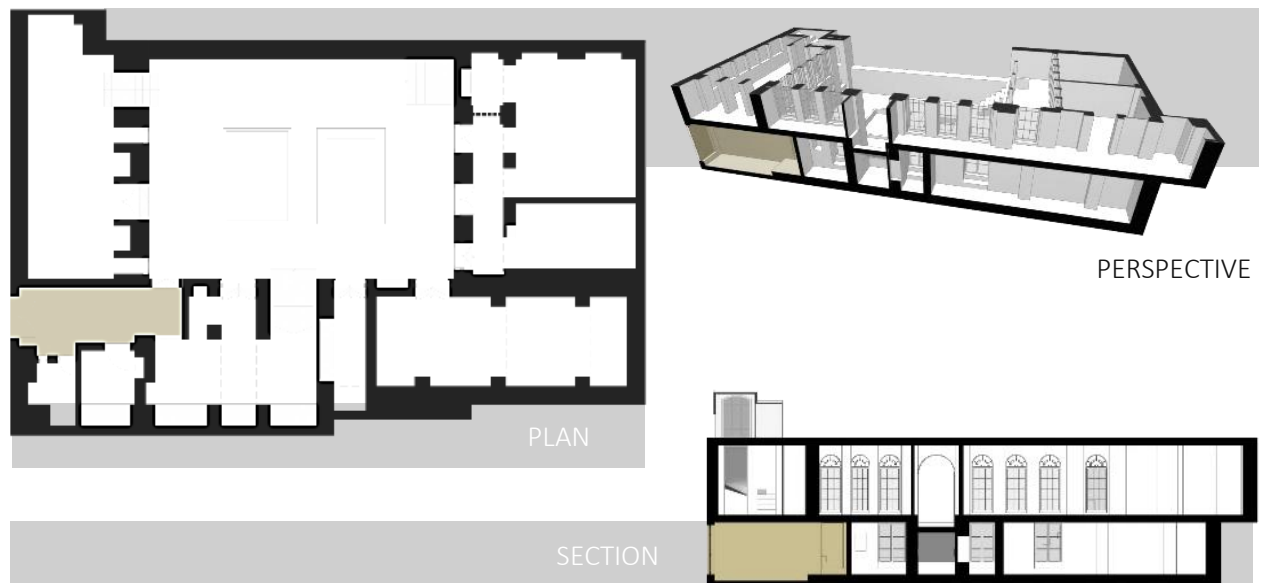


Figure 4-9 Case IX (Payamifar,2020)

Table 4-21 Case IX Features

Principles	Hierarchy	Corridor	Zones	Frontage	×
	Privacy	4/10			Portal
Axis	-		Doorway	×	
Symmetry	-		Vestibule	×	
Access	Indirect		Corridor	√	
Scale	1:3		Arcade	×	
Proportion	Medium		Iwan	×	
Position	Random – Aligned – Lower				
Location	In the corners (near)		Door	√	
Connection	-		Knocker	×	
Control	1 filter		Threshold	×	
Number	1 entry		Platform	×	
Façade	Single façade		Overdoor	√	
Decoration	-		Opening	√	

4.3.1.10 Case X

III. General Characteristics

House name	Social class	Historical period
Zarmehr	Upper class	Qajar
Address: North Ahmadi Street, Kadkhoda Alley.		

IV. Architectural Analyze

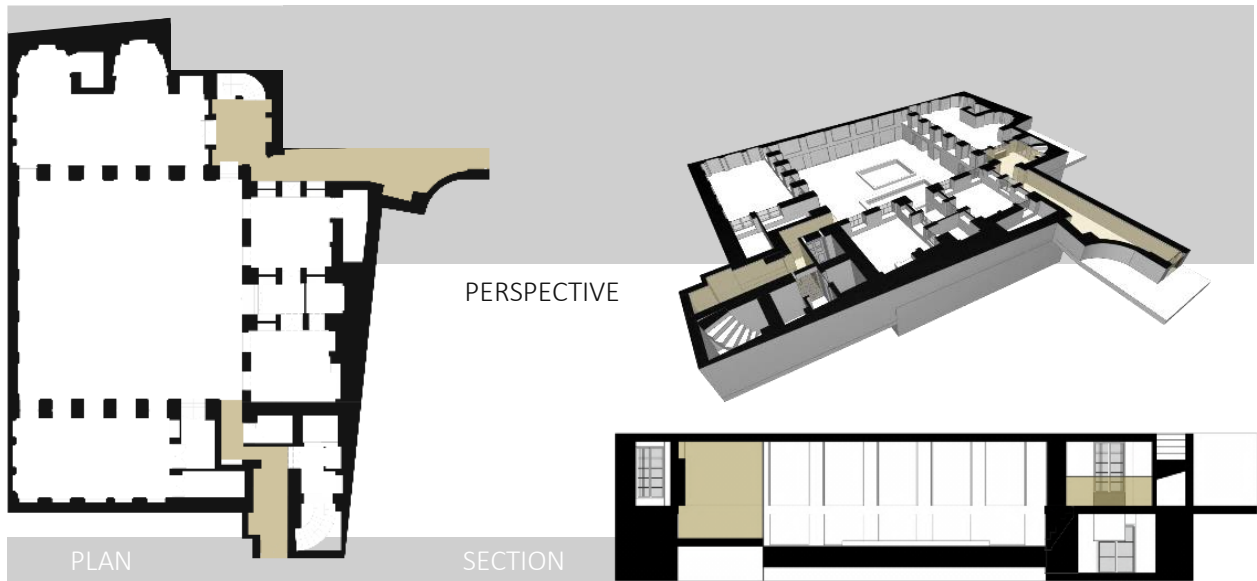


Figure 4-10 Case X (Payamifar, 2020)

Table 4-22 Case X Features

Principles	Hierarchy	Corridor	Zones	Frontage	×
	Privacy	4/10		Portal	×
	Axis	Transverse axis		Doorway	✓
	Symmetry	Transverse symmetry		Vestibule	×
	Access	Indirect		Corridor	✓
	Scale	1:3		Arcade	×
	Proportion	Medium		Iwan	×
	Position	At the cross – Aligned – Lower (both)	Components	Door	✓
	Location	In the corners (near)		Knocker	×
	Connection	-		Threshold	×
	Control	1 filter		Platform	×
	Number	2 entries		Overdoor	✓
	Façade	Single façade		Opening	✓
	Decoration	Brickwork			

4.3.2 Questionnaire

The quantitative data, which belong to the results of the questionnaire, were organized by criteria to answer the second sub-question of the study. Findings are presented using section titles. Results of each criteria statistical test are presented with tables and charts.

The samples of this questionnaire are 30 participants, the descriptive characteristics of which were presented before. The results section will be provided in three tables, including charts, to present the answers related to questions of each criterion. The questionnaire is available in the appendix.

Table 4-23 Statistical results

	Principles	Agree	No idea	Disagree	Agree %	Disagree %	Agree	No idea	Disagree	Status
1	Hierarchy	17	3	10	63%	37%				v
2	Privacy	21	6	3	87.5%	12.5%				v
3	Axis	25	5	0	100%	0%				v
4	Symmetry	2	3	25	7.4%	92.6%				x
5	Access	2	3	25	7.4%	92.6%				x
6	Scale	3	11	16	15.8%	84.2%				x
7	Proportion	4	12	14	22.2%	77.8%				x
8	Position	27	3	0	100%	0%				v
9	Location	28	2	0	100%	0%				v
10	Connection	14	8	8	63.6%	36.4%				v
11	Control	23	3	4	85.2%	14.8%				v
12	Politeness	18	4	8	69.2%	30.8%				v
13	Number	18	4	8	69.2%	30.8%				v
14	Facade	24	4	2	92.3%	7.7%				v
15	Decoration	23	3	4	85.2%	14.8%				v

	Zones	Agree	No idea	Disagree	Agree %	Disagree %	Agree	No idea	Disagree	Status
1	Frontage	8	18	4	66.7%	33.3%				v
2	Portal	25	2	3	89.3%	10.7%				v
3	Doorway	6	7	17	26.1%	73.9%				x
4	Vestibule	21	8	1	95.5%	4.5%				v
5	Corridor	5	9	16	23.8%	76.2%				x
6	Iwan	27	3	0	100%	0%				v
7	Arcade	20	6	4	83.3%	16.7%				v

	Components	Agree	No idea	Disagree	Agree %	Disagree %	Agree	No idea	Disagree	Status
1	Door	30	0	0	100%	0%				v
2	Knocker	26	4	0	100%	0%				v
3	Threshold	0	4	26	0%	100%				x
4	Platform	23	4	3	88.5%	11.5%				v
5	Overdoor	2	10	18	10%	90%				x
6	Opening	26	4	0	100%	0%				v

4.4 Summary

This chapter presented the categorized outputs of the collected data by case study and questionnaire, and their results.

Targets of this study:

- I. Investigating the architectural features of Shiraz residential entrances.
- II. Extracting the valuable features.

As to provide answers for the sub-questions, the following approach was considered:

According to the nature of this study, which consisted of both qualitative and quantitative choices, the data analysis procedures were also considered in the format of hybrid analysis, including:

- A thematic analytical approach to provide results, based on the data collected from the case study method. This approach was achieved through the coding and theming process of the data and categorizing them into different groups. (target I)
- A statistic analytical approach to present the outputs of utilized software, as the results of the questionnaire data. This analysis was based on the statistical process of Excel and SPSS, categorizing the questions and answers based on the characteristics of each criterion. (target II)

The analysis of case study data through coding validated the existence of literature architectural features in Shiraz residential entrances, which provided the answer to the first sub-question by presenting the validated features. Going through this process, house descriptions and architectural analysis results were both presented in a qualitative format, using tables, figures, and diagrams. The summarized review of these analyses is presented further.

The analysis of questionnaire data through the processes of Excel and SPSS provided an evaluation of demands in the field of ideal entrance space from the perception of contemporary society, which answered the second sub-question, by separating the valuable features. As to present the results of this process, participants descriptions and statistical analysis results were put into the quantitative format, with the use of tables and charts.

The concise summary of research findings is presented in the following:

Here are the qualitative method findings, i.e. the architectural features of Shiraz residential entrances:



Figure 4-15 Principles patterns (Payamifar,2020)

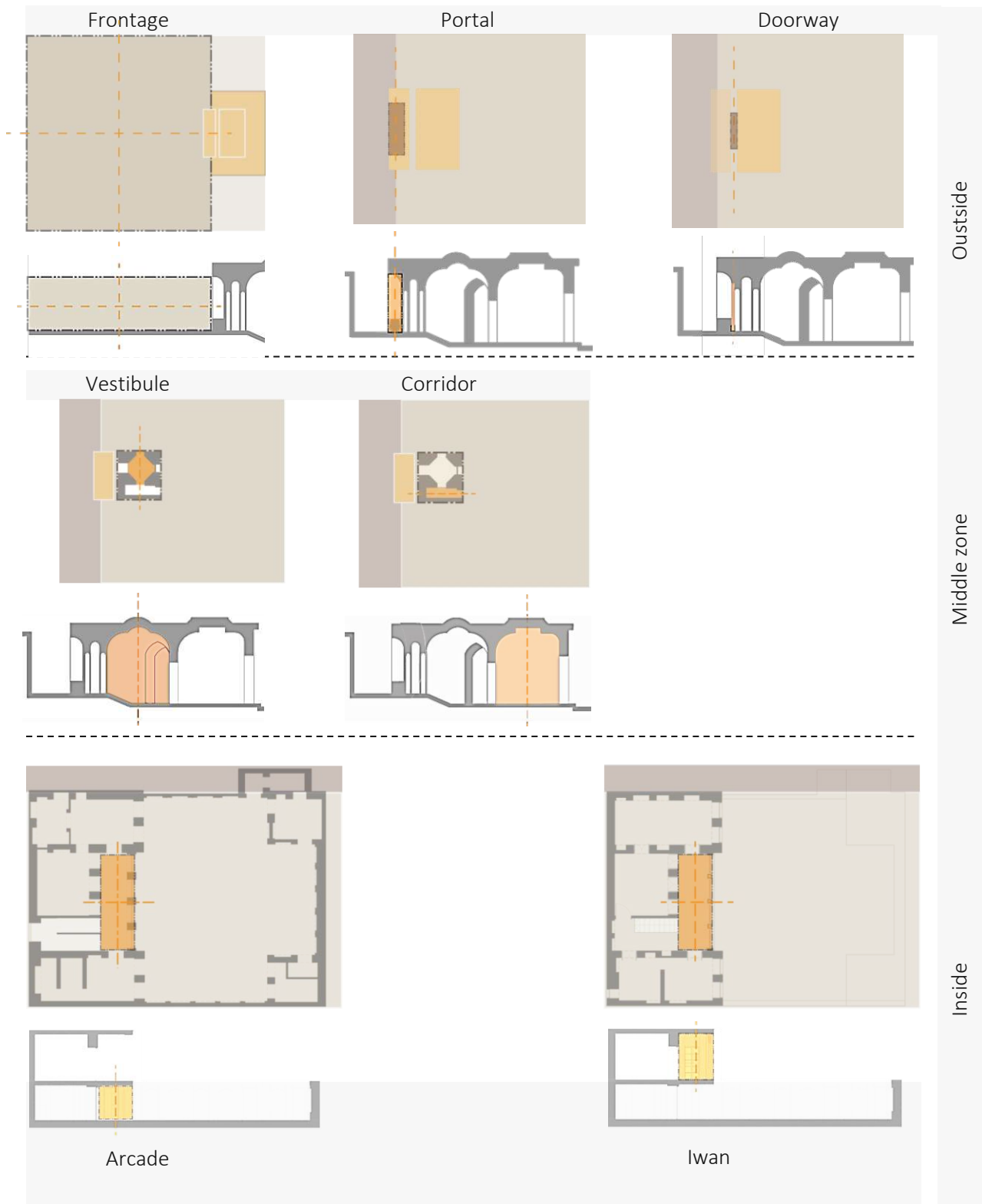


Figure 4-16 Zones patterns (Payamifar,2020)

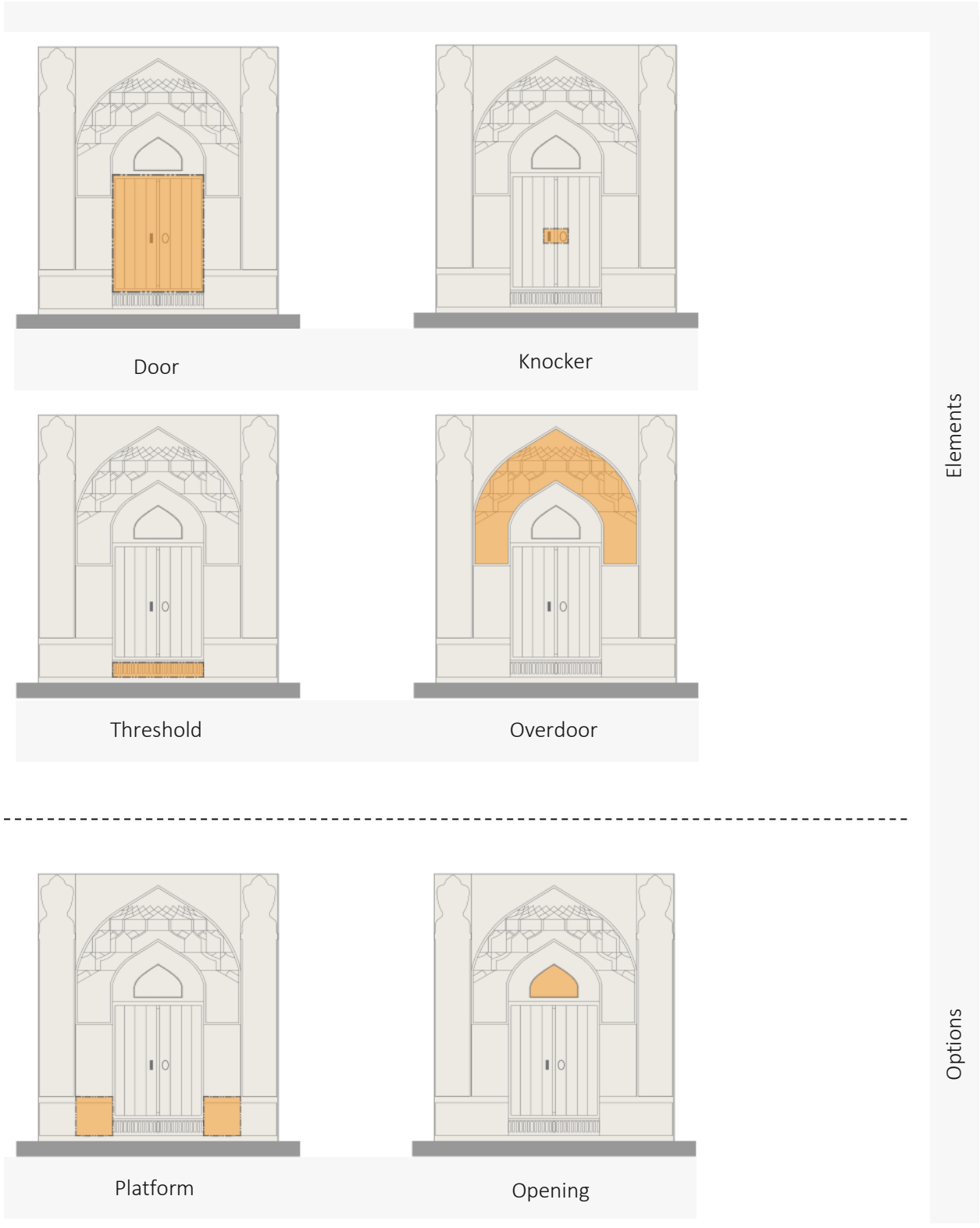


Figure 4-17 Components patterns (Payamifar,2020)

Here are the quantitative method findings, i.e. the valuable features of Shiraz residential entrances, based on participants ratings:

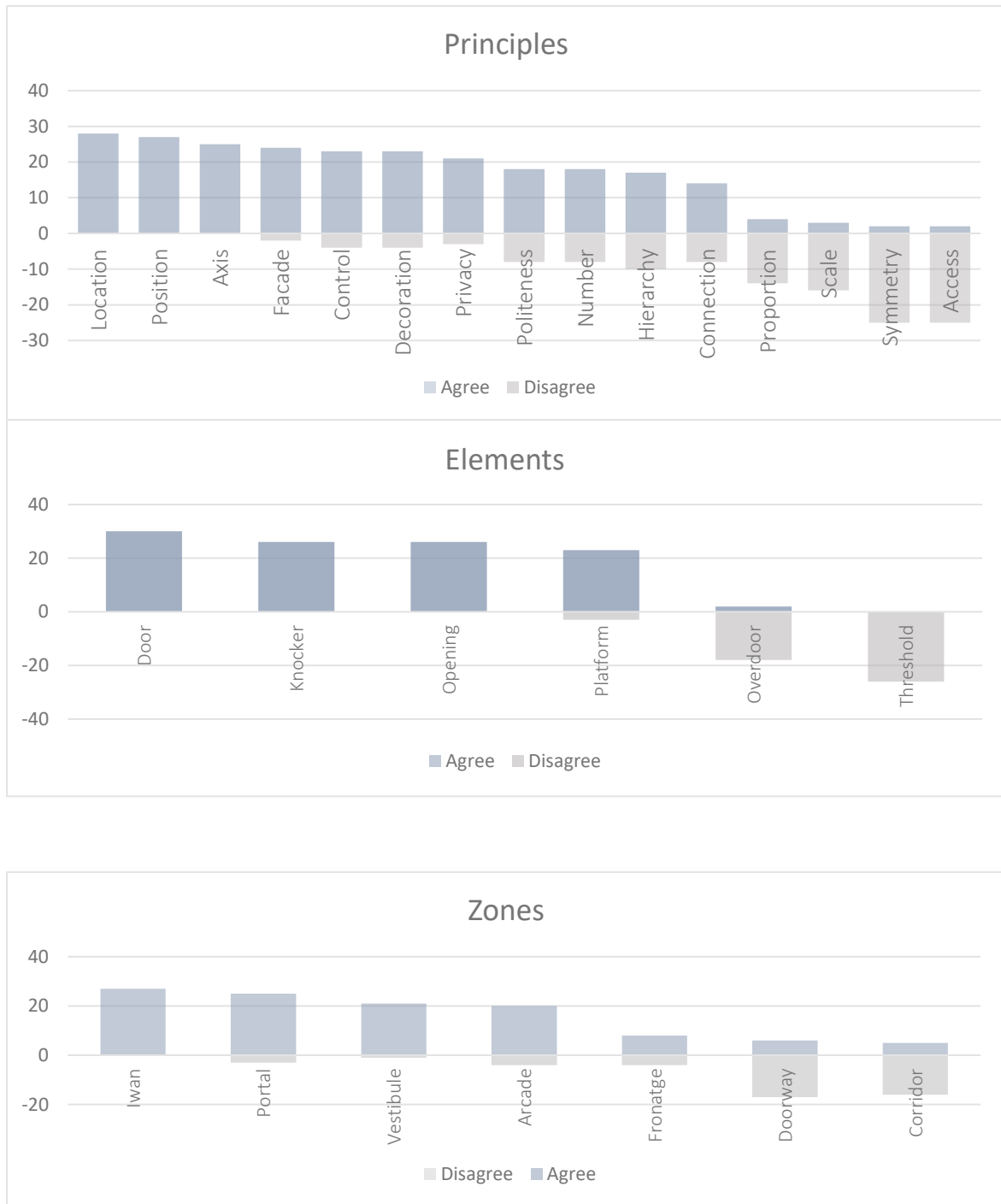


Diagram 4-9, 4-10, 4-11 Features rating

The implications of the data and data analysis relative to the research questions will be discussed in the next chapter.

Chapter 5

Summary, Conclusions, and Recommendations

Summary, Conclusion, and Recommendations

5.1 Introduction and summary of the study

As stated in the previous chapters, the purpose of this study was to investigate and extract the features of Shiraz historic residential entrances, which have the potential to transform into contemporary features, as practical suggestions for current architectural issues. The target, which was to identify and extract the valuable features, was achieved through the implication of selected methodology, i.e. the mixed-method, consisting of both qualitative and quantitative nature. After the primary data collection, which provided the basic information and a review of the background, the combination of two methods - case study and questionnaire was implied. The negligence of the cultural aspect in contemporary architecture has eliminated the quality and comfort of residential environments, especially the entrance space. To retrieve this loss and solve the current issues, this study suggests the redefinition of valuable historical patterns, which has not been done yet. These suggestions may have implications in the functional fields of architecture, by promoting the comfort and quality of residential environments, as well as protecting Iranian identity and culture. This study can also the considered gap in the literature, between historical entrances features and their potentiality as contemporary implications.

As to provide the acquired contribution, this mixed-method study was guided through these steps:

- Collecting general information about the background of the research topic from reliable library sources and cultural heritage documents.
- Performing the case study method to validate and present the features of residential entrances in the context of historical houses in Shiraz.
- Extracting the valuable features, based on the current social perceptions of the ideal entrance space, going through distribution and collection of questionnaires between contemporary inhabitants of Shiraz.

This chapter will present a summary of the specific findings of the study, along with conclusions, organized by research questions and in order to present all conclusions made

based on the data analysis and findings, referring to the literature and the significance of the study. It also provides implications derived from the study and recommendations for future research and practice.

5.2 Research Findings

The following results were obtained by performing the analysis procedures and explanations of the previous chapters. According to the findings, the valuable features of Shiraz residential entrances are presented below:

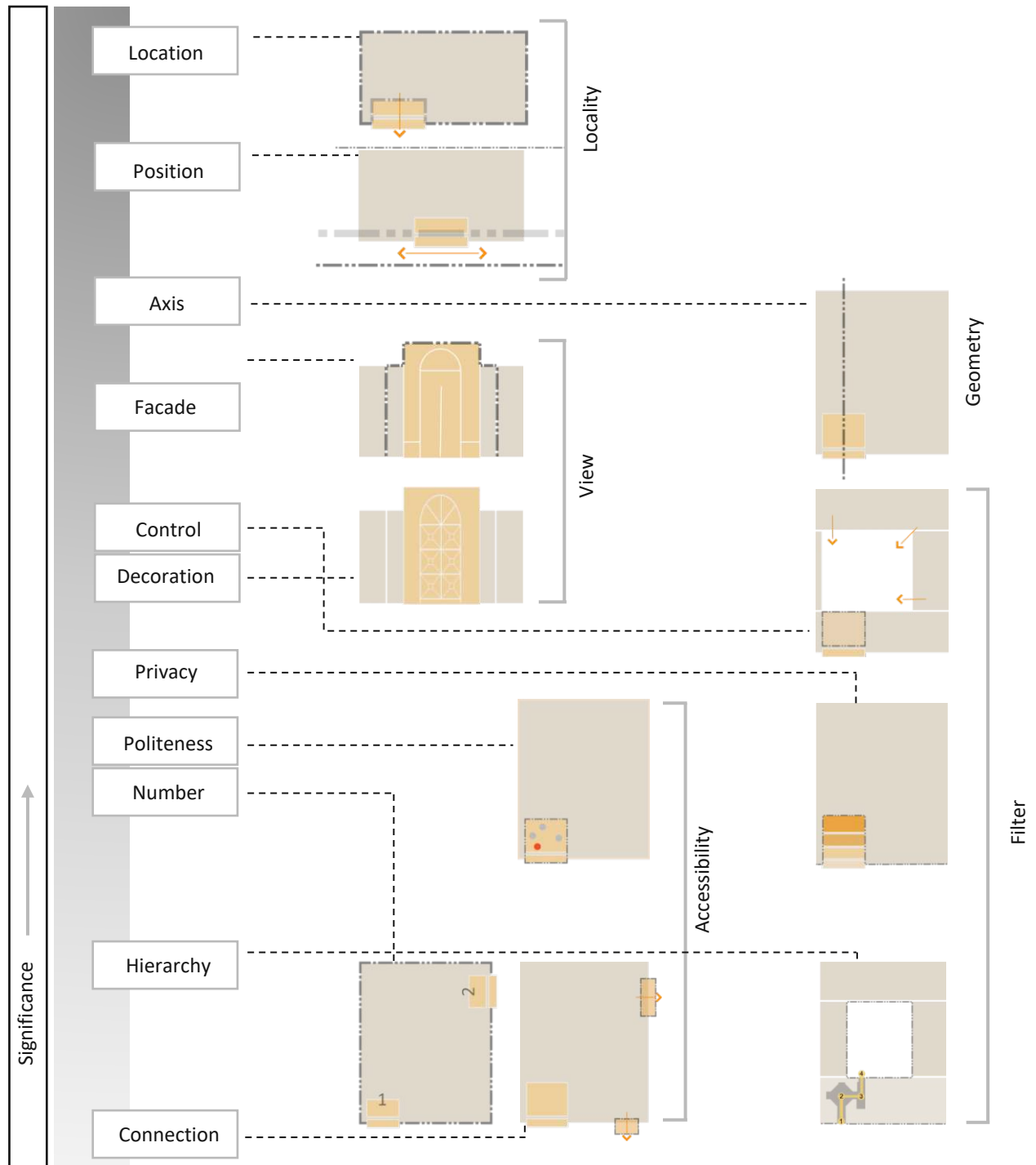


Figure 5-5 Principles suggestions (Payamifar,2020)

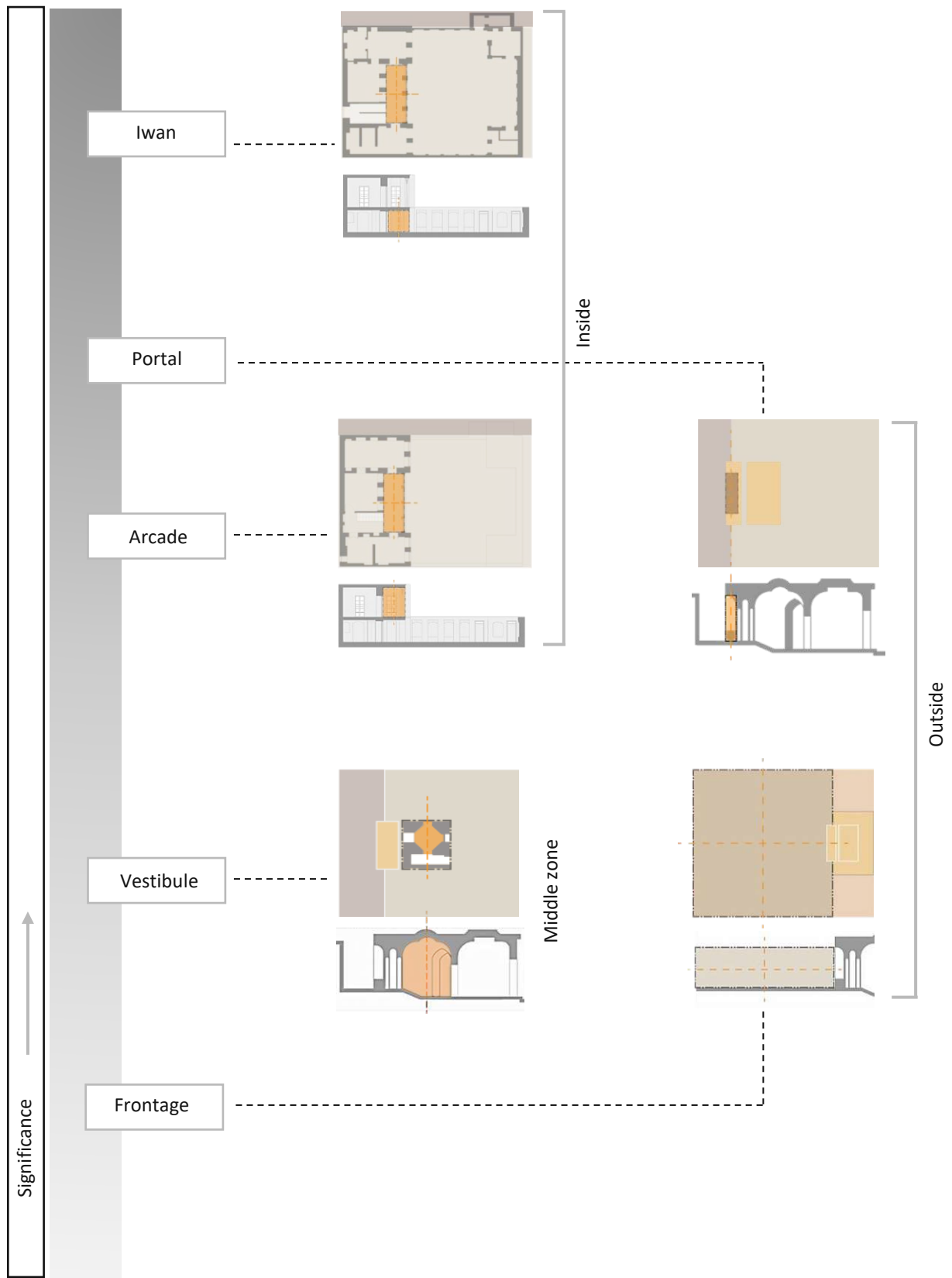


Figure 5-10 Zones suggestions (Payamifar,2020)

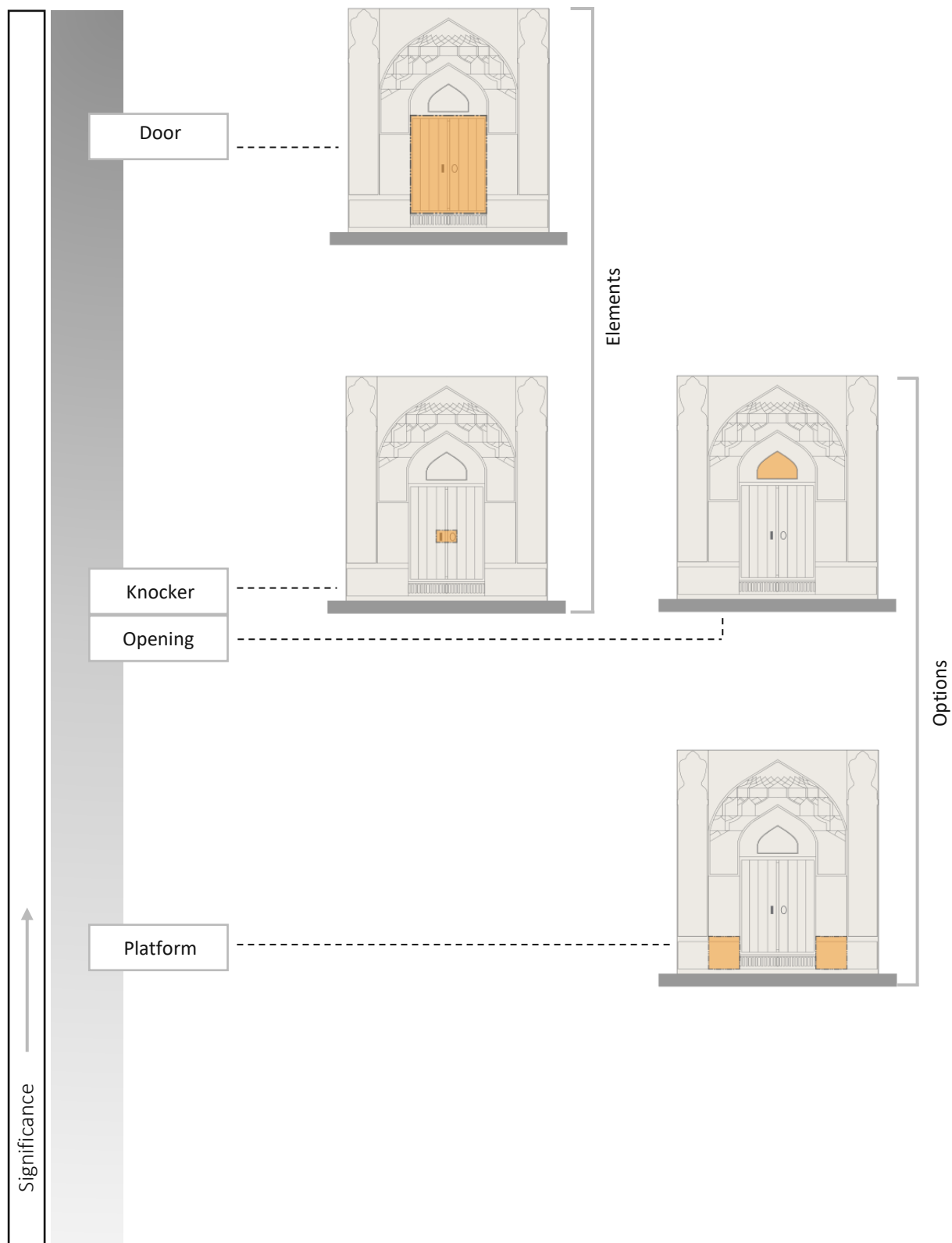


Figure 5-15 Components suggestions (Payamifar,2020)

5.3 Conclusions

Considering the importance of the cultural aspect as a prominent factor in the field of housing architectural design and its role in the evolution process of entrances, the present study investigated the characteristics of Shiraz residential entrances and their adaptation potentialities to match the current issues. According to the information collected from the case study and questionnaire, the transformative features were concluded. The results of this study confirm the generalizability of Iranian entrance characteristics to the considered spatial scope in the specific period of interest and suggest the features below:

Principles	
Locality	
Location	Paying attention to the location of the door in relation to the interior
Position	Focus on determining the position of the front door relative to the urban space
Geometry	
Axis	Considering the qibla axis and the North direction in locating the entrance
View	
Facade	Distinguishing the entrance from other parts and highlighting its character
Decoration	The beauty of materials, colours, design, and ornaments of the entrance space
Filter	
Control	Monitoring the traffic and security of the entrance zone
Privacy	Observance of privacy in the entrance zone
Hierarchy	Defining the entrance path crossing through several spaces
Accessibility	
Politeness	Providing enough space at the entrance for temporary small gatherings
Number	Considering multiple entrances and side accesses
Connection	Creating a connection between urban space and residential environment
Zones	
Inside	
Iwan	Considering a semi-open environment for family gatherings
Arcade	Forming a shaded path for comfort when sitting or moving in the entrance area
Middle zone	
Vestibule	Providing a space for waiting, as well as breaking the entrance path into parts
Outside	
Portal	Considering a retraction at the entrance door to distinguish it from the passage
Frontage	Defining a pre-space to separate the entrance from the surrounding space
Components	
Elements	
Door	Considering security monitoring system in the entrance design
Knocker	Installing alarm equipment on the entrance door
Options	
Opening	Creating skylight or other openings in the entrance zone to provide lighting
Platform	Providing a space for sitting and waiting with furniture

Table 5-5 Suggestions and considerations

5.4 Implications

The present study implies the consideration of architectural patterns in the field of housing entrance architectural design, by presenting the neglected potentials. This implication provides the possibility of expanding the existing knowledge in the field of recognizing redefinable patterns of residential entrances in contemporary architecture, along with presenting practical suggestions to applying these patterns, as a solution for current issues. Therefore,

- From the conceptual point of view, the results of this investigation may improve the expansion of the literature realm and also report the perceptions of the contemporary society by filling the gap between identifying historical input patterns and their capability as contemporary solution.
- This study may also have implications in the practical fields, with suggestions to restore the eliminated comfort to residential buildings. Considering the sociological aspects, the results of this study may promote the quality of residential environments, along with protecting the Iranian culture.

5.5 Recommendations

The quality of the residential environment in response to the perception of society includes many factors beyond the scope of this research, which have not been sufficiently considered over the past decades.

The research that has been undertaken for this thesis has highlighted some topics on which further research would be beneficial. Several gaps were highlighted in the literature review and whilst some of these were addressed by the present study, others remain. In particular, as mentioned before, the literature lacks multi-aspectual, exclusive, and function-oriented studies in the field of architectural ancient patterns.

There are a number of additional areas for further research that have been highlighted by the studies undertaken for this thesis. These include the further investigation of the architectural characteristics of residential entrance spaces in other geographical areas, analysis of these features from a climatological point of view, and implementing the undertaken methodology to recognize the mentioned features in other residential zones or public buildings.

There are also several areas for further development and practical approaches for the work undertaken in this thesis, which can be addressed by presenting problem-solving patterns for contemporary issues, to complete the functional mission of this research.

APPENDIX

APPENDIX – A

The case study samples location.



APPENDIX – B

The questionnaires

This study aims to identify the needs related to "Recreation of Entrance Sociocultural role in contemporary houses based on old-style Iranian patterns." We hope that with your cooperation and assistance, the target above will be achieved. Therefore, you are asked to answer the questions honestly with some time and attention. It should be noted that the information in the questionnaire will be used only for research purposes and there is no need to write your name. Thank you in advance for your sincere cooperation.

Your answers will affect the outcome of the research, so please answer the questions carefully and without orientation.

Gender	Female <input type="checkbox"/>	Male <input type="checkbox"/>
---------------	------------------------------------	----------------------------------

Age	20 to 30 years <input type="checkbox"/>	30 to 40 years <input type="checkbox"/>	40 to 50 years <input type="checkbox"/>	More than 50 <input type="checkbox"/>
------------	--	--	--	--

Social class	High <input type="checkbox"/>	Medium <input type="checkbox"/>	Low <input type="checkbox"/>
---------------------	----------------------------------	------------------------------------	---------------------------------

Type of residence	House <input type="checkbox"/>	Apartment <input type="checkbox"/>
--------------------------	-----------------------------------	---------------------------------------

Questions		Answers		
Serie	Please rate the following indicators based on your opinion.	I disagree	I have no idea	I agree
1	Principles			
	Hierarchy			
1	Defining the entrance path crossing through several spaces			
	Privacy			
2	Observance of privacy in the entrance zone			
	Axis			
3	Considering the qibla axis and the North direction in locating the entrance			
	Symmetry			
4	Symmetry of the entrance in relation to the walls around			
	Access			
5	Providing direct access through the entrance zone			
	Scale			
6	Proportionality consideration of the entrance scale in relation to the human scale			
	Proportion			
7	Paying attention to the proportion of entrance dimensions in relation to the whole building			
	Position			
8	Focus on determining the position of the front door relative to the urban space			
	Location			
9	Paying attention to the location of door in relation to the interior			
	Connection			
10	Creating connection between urban space and residential environment			
	Control			
11	Monitoring the traffic and security of the entrance zone			
	Politeness			
12	Providing enough space at the entrance for temporary small gatherings			
	Number			
13	Considering multiple entrances and side accesses			
	Facade			
14	Distinguishing the entrance from other parts and highlighting its character			
	Decoration			
15	Beauty of materials, colours, design and ornaments of the entrance space			

Questions		Answers		
Serie 2	Please rate the following indicators based on your opinion.	I disagree	I have no idea	I agree
Part 1	Zones			
	Frontage			
1	Defining a pre-space to separate the entrance from the surrounding space			
	Portal			
2	Considering a retraction at the entrance door to distinguish it from the passage			
	Doorway			
3	Designing the doorway specifically and emphasizing its functional importance			
	Vestibule			
4	Providing a space for waiting, as well as breaking the entrance path into parts			
	Corridor			
5	Creating a hallway to change the entrance path and provide privacy			
	Iwan			
6	Considering a semi-open environment for family gatherings			
	Arcade			
7	Forming a shaded path for comfort when sitting or moving in the entrance area			

Questions		Answers		
Serie 2	Please rate the following indicators based on your opinion.	I disagree	I have no idea	I agree
Part 2	Components			
	Door			
1	Considering security monitoring system in the entrance design			
	Knocker			
2	Installing alarm equipment on the entrance door			
	Threshold			
3	Placing a divider at the bottom of the door frame to separate the zones			
	Platform			
4	Providing a space for sitting and waiting with furniture			
	Overdoor			
5	Design and decoration of the upper part of the entrance door			
	Opening			
6	Creating skylight or other openings in the entrance zone to provide lighting			



Appendix-Figure 1 Case I (Mohammadzadeh)



Appendix-Figure 2 Case II (Mogaddas)





Appendix-Figure 3 Case IV (Pishevari)



Appendix-Figure 4 Case V (Poostforoosh)



Appendix-Figure 5 Case VI (Rasouli)



Appendix-Figure 6 Case VII (Razmjou)



Appendix-Figure 7 Case VIII (Sarraf)



Appendix-Figure 8 Case IX (Shahnaz)

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Bibliography

- Abolghasemi, Latif. 2004. *History of Architecture*. Tehran: University of Tehran Press (UTP).
- Abrahamian, Ervand . 1999. *ایران بین دو انقلاب [Iran between two revolutions]*. Tehran: ney publication.
- Adam, Sharr. 2010. *کلبه هایدگر [Heidegger's Hut]*. Translated by Iraj Ghanooni. Tehran: Nashr Sales.
- Afsar, Karamatullah. 1995. *تاریخ بافت قدیمی شیراز [The History of the Ancient Texture of Shiraz]*. Tehran: National Works Association.
- Afshar-Naderi, Kamran. 1995. "The Collaboration of Dissimilar in Iranian Architecture." *Abadi Quarterly* 19: 68-75.
- Ahmadi, Leila, Neda Zareie, and Vahdane Fouladi. 2015. " بررسی سیر تحول خانه های سنتی از درونگرا در دوره قاجار [Investigating the evolution of traditional houses from introverts in the Qajar period to extroverts in the Pahlavi period in Shiraz]." Tehran: CIVILICA.
- Akbari, Tahereh. 2007. "فرهنگ و باورها بر سردر ورودیهای خانه ها" *Culture of the Iranian people: (7-8): 69-87.*
- Alalhesabi, Mehran, and Naiemeh Korrani. 2013. "Effective Factors in Housing Transformation from the Past to the Future." *HOUSING AND RURAL ENVIRONMENT* 19 To 36.
- al-Balkhi, Ibn. 1996. *Fars Nameh*. Shiraz: Foundation for Fars Studies.
- Alitajer, Saeid , and Ghazaleh Molavi Nojoumi. 2016. "Privacy at home: Analysis of behavioral patterns in the spatial configuration of traditional and modern houses." *Collection of Frontiers of Architectural Research* 341-352.
- Alitajer, Saeid , and Ghazaleh Molavi Nojoumi. 2016. "Privacy at home: Analysis of behavioral patterns in the spatial configuration of traditional and modern houses in the city of Hamedan based on the notion of space syntax." *Frontiers of Architectural Research* 341-352.
- Altman, Irwin , and Martin M. Chemers. 1980. *Culture and Environment*. Cambridge: Cambridge University press.
- Altman, Irwin. 1975. *The Environment and Social Behavior: Privacy, Personal Space, Territory, and Crowding*. Monterey, California: Brooks/Cole Publishing Company.
- Amiriparyan, Peyman . 2015. "Analyzing the Homogenous Nature of Central Courtyard structure in Formation of Iranian Traditional Houses." *Procedia - Social and Behavioral Sciences* (Elsevier) 905-915.
- Andalib, Alireza , and Alireza Abdolazadefard. 2013. "Analysis A Development Framework for Urban Heritage Conservation Versus Development Trends in Shiraz, Iran." *International Journal of Architecture and Urban Development* 17-22.
- Arberry, A.J. 1974. *[Shiraz. Persian City of Saints and Poets]* *کتاب شیراز مهد شعر و عرفان*. Tehran: بنگاه ترجمه و نشر کتاب [Book translation and publishing company].
- Ardalan, Nader, and Laleh Bakhtyar. 2011. *نقش سنت در معماری ایرانی [Sense of Unity: The Role of Tradition in Iranian Architecture]*. Tehran: Elm-e Memar Publication.

- Ardeshiri, Mahyar, and Gholamhosein Memarian. 2010. *هویت شهری شیراز [Shiraz urban identity]*. Shiraz: Navid Shiraz.
- Arjmand, Mahmoud, and Somayah Khani. 2012. "THE ROLE OF PRIVACY IN THE ARCHITECTURE OF IRANIAN HOUSE." *JOURNAL OF STUDIES ON IRANIAN ISLAMIC CITY* 7: 27-38.
- Arthur, Paul , and Romedi Passini. 1992. *Wayfinding : people, signs, and architecture*. New York: McGraw-Hill Book Co.
- Ashaghi, Mehri, Parviz Bayat, and Mojtaba Forouzandeh. 2014. " بررسی و نقش انعطاف پذیری درمسکن سنتی [Investigating the role of flexibility in traditional Iranian-Islamic housing]." *9th Symposium on Advances in Science and Technology*. Mashhad: Khavaran Institute of Higher Education. 1-9.
- Ayvazyan, Simon. 1997. *نگاهی به مبانی معماری از فرم تا مکان [Take a look at the basics of architecture from form to place]*. Tehran: University of Tehran Press (UTP).
- A'zami , A, S.H. Yasrebi, and A Salehipoor. 2005. "Climatic responsive architecture in hot and dry regions of Iran." *Passive and Low Energy Cooling for the Built Environment*. Santorini, Greece. 613-617.
- Bagader, Mohammed . 2017. "Climate adaptability in the hejazi traditional architecture." *International Journal of Heritage Architecture Studies Repairs and Maintenance* 683-693.
- Baradaran Tavakoli, Davood , Maryam Tafrishi, and Ehsan Abbaspour. 2017. "Criteria and Factors Affecting Sustainable Housing Design in Iran." *Journal of Sustainable Development* 194-203.
- Bavar, Cyrus. 2009. *نگاهی به پیدایش معماری نو در ایران [A look at the emergence of new architecture in Iran]*. Tehran: Faza.
- Bazrgar, Mohammad reza . 2003. *شهرسازی و ساخت اصلی شهر [Urban planning and the main construction of the city]*. Shiraz: Kooshamehr.
- Bemania, Mohammadreza , Hamidreza Saremi, Mehran Ahmadnejad, and Hamid Rezai GHadi. 2015. "Visual Privacy Patterns Recognition in Extroverted Houses." *Current World Environment* 510-522. doi:<http://dx.doi.org/10.12944/CWE.10.Special-Issue1.64>.
- Bemania, Mohammadreza , Hamidreza Saremi, Mehran Ahmadnejad, and Hamid rezai Ghadi. 2016. "THE EFFECT OF NATURE ON SOCIAL INTERACTIONS IN URBAN." *Journal of Fundamental and Applied Sciences* 65-75.
- Black, Ken. 2010. *Business Statistics: Contemporary Decision Making*. John Wiley & Sons.
- Borhanifar, Sahar , Mohammad ebrahim Mazhari, Vida Taghvaei, Behzad Vasiq, and Reza Ashrafzadeh. 2020. "Investigating the Components affecting Sociability in Residential Complexes using privacy-preserving approach." *Motaleate Shahri*, 91-106.
- Broadcasting, Islamic Republic of Iran. 2007. "Culture and beliefs on the overdoor of houses." *Iranian Folklore Quarterly* 70-87.
- Cameron, George G. 1948. *Persepolis treasury tablets*. Chicago: University of Chicago Press.
- Chardin, Jean. 1993. *The Travels of Sir John Chardin*. Tehran: Toos.
- . 1994. *سفرنامه شاردن [Chardin Travelogue]*. Tehran: Toos.

- Chardin, John. 1993. *The Travels of Sir John Chardin*. Tehran: Toos.
- Chelongarian, Ramin, Nezam Askari, Farkhondeh Vasefian, and Neda Kolahdouzan. 2016. " بررسی الگوهای معماری ورودی در خانه های سنتی ایرانی و ارائه راهبرد در بقای ورودی [Investigating the architectural patterns of the entrance in traditional Iranian houses and presenting a strategy in the survival of the entrance of contemporary houses]." *MODERN RESEARCH IN CIVIL ENGINEERING, ARCHITECTURAL, AND URBAN DEVELOPMENT*. Istanbul: Civilica. doi:CONFUCIAN02_126.
- Cooper, Clare. 215. *House As a Mirror of Self*. Masdar city: International Congress on Sustainability in Architecture and Urbanism.
- Dehbandi, Ramin , Alireza Einifar, and Helaleh Cheragh Makani. 2017. "A COMPARATIVE STUDY OF ENTRANCE IN TRADITIONAL AND CONTEMPORARY HOUSES OF IRAN." *JOURNAL OF ISLAMIC ARCHITECTURE* 154-162.
- Diba, Darab. 1999. "Inspiration and interpretation of the basic concepts of Iranian architecture." *Journal of Architecture and Culture* 100–105.
- Dudovskiy, John . 2018. *The Ultimate Guide to Writing a Dissertation in Business Studies*. USA: BRM.
- Ebrahimi, Mohmmad Hassan. 2011. "An Architectural Tale of the Two Cities." *International Journal Of Architecture and Urban Development* 25-68.
- Edwards, Brian, Magda Sibley, Mohammad Hakmi, and Peter Land. 2006. *Courtyard Housing Past, Present and Future*. New York: Taylor & Francis.
- Einifar, alireza , and A Aghalatif. 2011. "Concept of territory in residential complexes; Comparative study of two residential complexes in level and height in Tehran,." *Memari-va-shahrsazi* 17-28.
- El-Said, Issam , Ayşe Parman, Tarek El-Bouri, Keith Critchlow, and Salmá Samar Damlūjī. 1993. *Islamic art and architecture : the system of geometric design*. English: Garnet Publishing.
- El-Shorbag, Abdel-moniem . 2014. "Traditional Islamic-Arab House: Vocabulary And Syntax." *International Journal of Civil & Environmental Engineering IJCEE-IJENS* 1-7.
- Emami, Ali. 2015. *Principles in the concept of home*. October 13. <http://emami817ali.blogfa.com/post/16/>.
- Erarslan, Alev . 2020. "Typological Variations of The Courtyard House with Iwan Tradition. A Comparative Analysis of Examples in Syria, Egypt, Iraq And Iran." In *Advances in Scientific Research: Engineering and Architecture*, by Ilia Christov, Viliyan Krystev, Recep Efe and Abd Alla Gad, 407-444. Sofiya: ST. KLIMENT OHRIDSKI UNIVERSITY PRESS.
- Esfahani, Fatemeh Banaei, and Hamidreza Beigzadeh Shahraki. 2014. " گذار از درونگرایی به برونگرایی در خانه های فاجاری و پهلوی اول یزد " *1st International Congress on New Horizons in Architecture and Planning*. Tehran: CIVILICA.
- Estaji, Hassan . 2014. "Flexible Spatial Configuration in Traditional Houses." *International Journal of Contemporary Architecture* 26-35.
- Fahimizadeh, Hosein. 2005. "تحولات کالبدی بافت قدیم شیراز [Physical changes in the old texture of Shiraz]." *Iran Construction Engineering Organization (IRCEO)* 59.

- Farjami, Elnaz , and Soheil Ghaderi. 2016. "Investigation of Spatial Configuration in Houses of Shiraz, Iran." *Design Communication European Conference*. Istanbul: Ozyegin University. 134-143.
- Farshchi, Hamid Reza . 2016. "Manifestation of Culture in Traditional Architecture of Iranian House Based on Old Houses in Kashan." *Modern Applied Science* (Canadian Center of Science and Education) 185-193.
- Fasaie, Hasan. 2013. *فارسنامه ناصری*. Tehran: Amirkabir Publisher.
- Fisher, W. B. 1968. *The Cambridge History of Iran*. Cambridge: Cambridge University Press.
- Friberg, Tora . 1992. "Reviewed Work: Living in a Man-Made World: Gender Assumptions in Modern Housing Design." *JSTOR* (Taylor & Francis, Ltd.) 230-231.
- Ghaed Sharafi, Mohammad, Mahsa Falah Niya, and Hossein Yousefi. 2014. "گونه شناسی ورودی خانه های " دوره‌ی قاجار و پهلوی اول در شهر شیراز *National Conference of Contemporary Iranian Architecture and Urbanism*. Tabriz.
- Ghobadian, Vahid . 2003. *مبانی و مفاهیم در معماری معاصر در غرب [Definitions and concepts in the west contemporary architecture]*. Tehran: Office of Cultural Research.
- Gifford, Robert. 2002. *Environmental psychology: Principles and practice*. Colville WA: Optimal books.
- Golboo, Maryam , and Isa Hojat. 2015. "ارزیابی چگونگی ورودی خانه های شیراز در تامین حریم امن خانه" [Evaluation of how the entrances, in Shiraz houses in order to ensure the privacy of it.]. *The National Conference on Iranian - Islamic Architecture and Urbanism*. Rasht.
- Green, Thomas A. 1997. *Folklore: an encyclopedia of Beliefs, customs, tales, music and Art*. English: ABC-CLIO.
- Habibi M, Masaelli S. 2007. *Sarane karbarihaye shahri*. Tehran: National Land and Housing Organization.
- Haeeri, Mohammad Reza. 1997. "Designing the contemporary house and the architectural principles of traditional houses." *Abadi* 6 (23): 18–28.
- Haji Najad, Ali, Mojtaba Rafiean, and Hossein Zamani. 2011. " بررسی و رتبه بندی عوامل مؤثر بر میزان رضایت مندی شهروندان از کیفیت محیط زندگی." *Research in Human Geography* 129-143.
- Hall, Edward T. . 1966. *THE HIDDEN DIMENSION*. New York: Doubleday.
- Hanachi, Pirooz, and Somaieh Fadaei Nezhad. 2010. "Urban Physical And Social Transformation In Heritage Districts." *URBAN TRANSFORMATION: CONTROVERSIES, CONTRASTS and CHALLENGES*. Istanbul, Turkey: 14th IPHS conference. 12-15.
- Heidegger. 2010. *heidegger's hut*. Tehran: Nashr Sales.
- Heydari, Ali Akbar, and Eisa Ghasemian. 2019. "تحلیل نمودپذیری مفهوم فناعت در الگوی خانه های سنتی" [Analysis of the concept of contentment in the model of traditional houses]. *Journal of Researches in Islamic Architecture* 87-108.
- Hobsbawm, Eric, and Terence Ranger. 1983. *The Invention of Tradition*. Cambridge: Cambridge University Press.

- Hosseini, Bahareh , and Atefe Zand Karimi. 2012. "A BREIF SURVEY ON THE PRINCIPLES OF IRANIAN ISLAMIC ARCHITECTURE." *Archi-Cultural Translations through the Silk Road* . Nishinomiya: Mukogawa Women's University Press . 318-323.
- Irani, Mazdak , Peter Armstrong, and Amir Rastegar. 2017. "Evolution of Residential Building in Iran based on Organization of space." *Asian Culture and History* (Canadian Center of Science and Education) 46-59.
- Iranmahboub, Jaleel, and Asghar Mirfardi. 1998. " بررسی تاثیر متقابل فرایند افزایش جمعیت و شهرنشینی در ایران [Investigating the interaction between population growth and urbanization in Iran]." *population* (45 - 46): 103-135.
- Jafarbegloo, Maryam . 2018. "How modernization encounter tradition: Iranian housing development in the Second Pahlavi period in Tehran (1940-1970)." *YBL JOURNAL OF BUILT ENVIRONMENT* 114-129.
- Jafarbegloo, Maryam . 2018. "How modernization encounter tradition: Iranian housing development in the second Pahlavi period in tehran(1940-1970)." *YBL JOURNAL OF BUILT ENVIRONMENT* 114-129.
- Jenkins-Madina, Marilyn , Richard Ettinghausen, and Oleg Grabar. 2001. *Islamic Art and Architecture 650-1250*. Brend: Yale University Press.
- Johnson, Bridget. 2020. *The Difference Between 'Iranian' and 'Persian'*. 02 17. <https://www.thoughtco.com/is-it-iranian-or-persian-3555178#citation-1>.
- Joshua J, Mark. 2020. "Ancient Persian Art and Architecture." *World History Encyclopedia*. January 22. https://www.worldhistory.org/Ancient_Persian_Art_and_Architecture/.
- Julaihi , Wahid, and Fatemeh Khozaei. 2008. "Privacy in Iranian traditional houses." *Human habitat and enviromental change*. Penang: University Sains Malaysia.
- Karimi, Bahman. 1946. *راهنمای آثار تاریخی شیراز [Guide of the historical monuments of Shiraz]*.
- Karimian, Masoumeh . 2009. " ارسی، رقص نور با ساز چوب و شیشه ." *Iran newspaper, Culture and Art*.
- Kazemi Zahrani, Zahra , and Seyedeh Marziah Tabaeian. 2016. "The Comparative Study of Privacy in Designing Qajar Dynasty." *Journal of Design and Built Environment Special Issue* 53-63.
- Kazemi Zahrani, Zahra , and Seyedeh Marziah Tabaeian. 2016. "The Comparative Study of Privacy in Designing Qajar Dynasty Isfahan`s Houses and Malaysia`s Traditional Houses." *Journal of Design and Built Environment Special Issue* 53-63.
- Kerstin, Dörhöfer. 2003. "Symbols of Gender in Architecture and Urban Design." *City and gender, international discourse on gender, urbanism and architecture*. Opladen: Leske + Budrich. 83-104.
- Khaki, Gholamreza. 2004. *روش تحقیق با رویکردی به پایان‌نامه‌نویسی [Research method with an approach to dissertation]*. Tehran: Baztab.
- . 2015. *روش های تحقیق در علوم تربیتی و رفتار [Research methods in educational sciences and behavior]*. Tehran: Baztab.

- Kheirabadi, Masoud . 2000. "Iranian Cities." *American Journal of Islam and Society* (Syracuse University Press) 89.
- Khozaei, Fatemeh. 2008. "VISUAL PRIVACY AND RESIDENTIAL FACADES IN TRADITIONAL AND MODERN HOUSES,," *5th Great Asian Streets Symposium: A Public Forum of Asian Urban Design*. PENANG: UNIVERSITY SAINS MALAYSIA.
- Kiani, Mostafa. 2004. *معماری دوره پهلوی اول*. Tehran: The Institute for Iranian Contemporary Historical Studies (IICHS).
- . 2004. *معماری دوره پهلوی اول [Architecture of the first Pahlavi period]*. Tehran: The Institute for Iranian Contemporary Historical Studies (IICHS).
- Lambton, A.K.S. 2009. *Shiraz Second Edition*. Berkeley: University of California UC.
- Lawson, Bryan. 2001. *The Language of Space*. Oxford ; Boston: Architectural Press.
- Lewis, Bernard . 1999. *Iran in History*. Tel Aviv: Mortimer and Raymond Sackler Institute.
- Mahdavinejad, Mohammadjavad, and Mohammad Mashayekhi. 2011. "Principles of the Socio-Cultural Mosque Design Based on Socio-Cultural Approach." *Armanshahr Journal* 53-63.
- Malekzadeh, Reza. 2021. "Arch Iran Med." *Iranian Medicine*, January: 78-83.
- Margulis, Stephen T. . 2003. "Privacy as a Social Issue and Behavioral Concept." *Journal of Social Issues* 243--261.
- Mark, Joshua J. . 2020. "Women in Ancient Persia." *World History Encyclopedia*.
- Masaeli, Sedigheh. 2010. "[Hidden Plan, the Consequence of Religious Beliefs in Traditional Desert House of Iran] نقشه پنهان به مثابه دست آورد باورهای دینی در مسکن سنتی کویری ایران" *HONAR-HA-YE-ZIBA* 27-38.
- . 2010. *نقشه پنهان به مثابه دست آورد باورهای دینی در مسکن سنتی کویری ایران [Hidden map, as an achievement of religious beliefs in traditional Iranian desert housing]*. Tehran: Honar-Ha-Ye-Ziba.
- Masoud, Amir Bani. 2009. *معماری معاصر ایران: تکاپوی بین سنت و مدرنیته [Contemporary Iranian Architecture: The Struggle between Tradition and Modernity]*. Tehran: Honar-e Memari Gharn.
- Mazandarani, Mohammad Reza Haeri. 2009. *خانه، فرهنگ، طبیعت [Home, culture, nature]*. Tehran: UARC.
- Mcdowell, Linda. 2001. "Gender, Identity and Place: Understanding Feminist Geographies." *The University of Chicago Press* 327-328.
- Mehdizadeh Saradj, Fatemeh , Farhad Tehrani, and Nima Valibeig. 2011. "بکارگیری مثلثهای هنجار در محاسبات [Using norm triangles in mathematical calculations And implementation of geometry in the construction and execution of traditional Iranian architecture]." *MAREMAT-E ASAR & BAFT-HAYE TARIKHI-FARHANGI* (ART UNIVERSITY OF ISFAHAN) 15-26.
- Memarian , Gholam Hossein. 1994. *Iranian Residential Architecture*. Tehran: Science and Industry University Publications.
- Memarian, Gh. H. 2009. *آشنایی با معماری مسکونی ایرانی: گونه شناسی درونگرا [Introduction to Persian residential architecture; Introverted typology]*. Tehran: Soroush Danesh Publishing.

- . 2005. *معماری نظری در مبانی سیری*[A look at the theoretical foundations of architecture]. Tehran: Soroush Danesh Publishing.
- . 2001. *شیوه‌های معماری ایران* [Iranian architectural methods]. Tehran: The institute of islamic art studio.
- Memarian, Gholamhosein , Sirwan Azimi, and Mahdi Kaboodi. 2014. "Blue color origin in windows of residential traditional buildings." *Journal of Islamic architecture* 47-56.
- Memarian, Gholamhossein, and Frank Brown. 2006. "The shared characteristics of Iranian and Arab courtyard houses." In *Courtyard Housing: Past, Present and Future*, by Brian Edwards, Magda Sibley, Mohamad Hakmi and Peter Land, 27-40. New York: Taylor & Francis.
- Milani, Abbas. 2004. *lost wisdom-rethinking modernity in Iran*. USA: mage publishers.
- Milani, Farzaneh . 1992. *Veils and Words: The Emerging Voices of Iranian Women Writers*. New York: Syracuse University Press.
- Mirfardi, Asghar , and Jaleel Iranmahboub. 1998. " بررسی تاثیر متقابل فرایند افزایش جمعیت و شهرنشینی در ایران [Investigating the interaction between population growth and urbanization in Iran]." *population* (45 - 46): 103-135.
- Mirzayee, Reza. 2006. *بررسی مصالح بافت و رنگ در طراحی فضاهای توقف و استراحت در دوره معماری و شهرسازی مدرن ایران* [Investigation of texture and color materials in the design of pause and rest spaces in the period of modern Iranian architecture and urban planning]. Tehran: MCTH.
- Mohammad Karim Pirnia, Gholam-Hossein Memarian. 2001. *سبک شناسی معماری ایرانی* [Stylistics of Iranian architecture]. Tehran: Soroush Danesh.
- montazer, behnaz . 2019. "The Effect of 18th and 19th Centuries Russian Neoclassical Architecture on the Architecture of Iranian Administrative-Service Buildings (During Qajar and First Pahlavi Eras)." *Bagh-e Nazar Journal* 85-100.
- Mortazavi, Hassan , Mohammad Reza Bemanian, and Mojtaba Ansari. 2018. "READING OUT THE LIMINAL ARCHITECTURE HIDDEN CONCEPTS AND ITS MANIFESTATION IN TRADITIONAL HOUSES." *Journal Of Organizational Behavior Research* 1-22.
- Mortazavi, Nastaran, Fahimeh Abyaznezhad, and Mahsa Fallah. 2015. " روانشناسی مجتمع های مسکونی از نظر " [Psychology of residential complexes in terms of privacy]." *Civil Engineering Architecture and stable environment*. Tehran: CIVILICA.
- mortazavi, s.masoud. 2004. *مهاجرت روستاییان به شهرها و تاثیرات اقتصادی و سیاسی آن در دوره ی پهلوی دوم*. Tehran: Islamic Revolution Document Center.
- Mortazavi, S.Masoud. 2004. *مهاجرت روستاییان به شهرها و تاثیرات اقتصادی و سیاسی آن در دوره ی پهلوی دوم* [Rural migration to cities and its economic and political effects in the second Pahlavi period]. Tehran: Islamic Revolution Document Center.
- Motahari. 2016. "International Conference on Applied Research in Civil Engineering, Architecture and Urban Management." *The nature of traditional housing*. Tehran: -. 60.
- Mottahari, Morteza. 1973. *Hejab*. Tehran: Sadra.

- Mousavi, Sepideh , Mohsen Tabassi, and Fatemeh Mehdizaheh Seraj. 2020. "Privacy in the houses of eastern parts of Iran, during the transition period withan emphasis on the architecture of housing entrances." *Creative City Design* 102-109.
- Nabavi, Faezeh, and Yahava Ahmad. 2016. "IS THERE ANY GEOMETRICAL GOLDEN RATIO IN TRADITIONAL IRANIAN." *Archnet-IJAR* 143-154.
- Naghizadeh, Mohammad. 2008. *شهر و معماری اسلامی [Islamic city and architecture]*. Tehran: Mani publication.
- Naghizadeh, Mostafa . 2001. "Sustainable Development, Healthy Cities and Iranian culture." *Journal of Scientific housing and rural environment* 91-92.
- Nasr, Tahereh. 2005. *[Architecture & urbanism of shiraz i the pahlavi period] معماری و شهرسازی شیراز در دوره ی پهلوی*. Tehran: Rozaneh-kar.
- Nayeri Fallah, Siyamak , and Akram Khalili. 2015. "Privacy as a cultural value in traditional Iranian housing; Lessons for modern; iranian high density vertical development (HDVD) housing." *International Journal of Architectural Research* 198-215.
- Nayeri Fallah, Siyamak, Akram Khalili, and Mohamad Tajuddin mohd rasdi. 2017. "PRIVACY AS A CULTURAL VALUE IN TRADITIONAL IRANIAN HOUSING." *International Journal of Architectural Research* .
- Nazari, Negin , and Özlem Olgaç. 2021. "COMPARATIVE COMPATIBILITY ASSESSMENT ON REUSED IRANIAN HOUSES FROM QAJAR ERA." *Arquitetura Revista* 30-53.
- Nejad Ebrahimi, Ahad , and Morteza Aliabadi. 2014. "The Role of Mathematics and Geometry in Formation of Persian Architecture." *Asian Culture and History* 220-239.
- Nikkar, Majid. 2005. "Shiraz city center over time." *Jostarhaye Shahrsazi Magazine* 52-67.
- Nilforoushan, Mohammad reza . 2007. *از آغاز تا دوره قاجاریه [Iranian architecture, from the beginning to the Qajar period]*. Esfahan: Ham-Andishan.
- Nilforoushan, Mohammadreza . 2008. *ورودیهای قدیمی اصفهان [Old entrances of Isfahan]*. Isfahan: Adab-e Emrooz.
- Noghrehkar, Abdolmajid. 2008. *درآمدی بر هویت اسلامی در معماری و شهرسازی [Introduction to Islamic identity in architecture and urban planning]*. Tehran: Ministry of Housing and Urban Development.
- Norberg-Schulz, Christian. 2002. *The concept of dwelling: on the way to figurative architecture* . Tehran: Agah.
- Oberling, Pierre . 2014. *FĀRS vii. Ethnography*. May 31. <https://iranicaonline.org/articles/fars-vii>.
- Okhovat, Hanie, Nina Almasifar, and Mohammad Reza Bemanian. 2011. "historical and cultural buildings in iranian vernacular architecture." *ACE (Centre de Política del Sòl i Valoracions - Universitat Politècnica de Catalunya)*.
- Özkan, Süha . 2006. "Foreword—Courtyard: a typology that." In *Courtyard Housing: Past, Present and Future*, by Brain Edwards, Magda Sibley, Mohamad Hakmi and Peter Land, 15-22. New York: Taylor & Francis.
- Pirnia, Mohamad karim. 2008. *معماری ایرانی*. Tehran: roush Danesh Publication.

- . 2008. *معماری ایرانی* [Persian architecture]. Tehran: roush Danesh Publication.
- Pirnia, Mohamad karim, and Gholam hosein Memarian. 2005. *آشنایی با معماری اسلامی ایران* [Introduction to Iranian Islamic architecture]. Tehran: Soroush Danesh Publication.
- Pirnia, Mohammad Karim. 2015. *سبک شناسی معماری ایران* [Stylistics of Iranian Architecture]. Tehran: Soroush Danesh.
- Pope, Arthur Upham . 1971. *Introducing Persian Architecture*. London: Oxford University Press.
- . 1965. *Persian Architecture*. New York: George Braziller.
- Pope, Arthur Upham. 2016. *Arthur Upham Pope and A New Survey of Persian Art*. Koninklijke Brill NV.
- Raeesi, Mohammad Mannan , and Zahra Ansaripour. 2018. " مطالعه تطبیقی حجاب زدایی و حریم زدایی در البسه ". *Journal of Researches in Islamic Architecture* (Journal of Researches in Islamic Architecture) 3-24.
- Rajabi, Parviz. 1977. *معماری ایران در عصر پهلوی* [Iranian architecture in the Pahlavi era]. Tehran: National university.
- Ramezan, Mina, and Javad Neyestani. 2010. " جلوه های سنت و تجدد در فضاهای ورودی خانه های تهران دوره قاجار ". *MEMARI-VA-SHAHRSAZI* 65-75.
- Rapoport, Amos. 1969. *House Form and Culture*. Prentice Hall.
- Razali, Noorul Huda Mohd , and Anuar Talib . 2013. "The Concept of Privacy and the Malay Dwelling Interior Space Planning." *Quality of Life in the Built and Natural Environment*. Langkawi: Universiti Teknologi MARA . 404 – 414 .
- Razavi, Hosein, and Niloofar Ghahghayee. 2017. "سیر تحول هویت در معماری ایرانی" [The evolution of identity in Iranian architecture]. *International Conference on Contemporary Iran in Civil Engineering , Architecture and Urban Development*. Tehran: CIVILICA. 11.
- Riege, Andreas. 2003. "Validity and reliability tests in case study research: A literature review with "hands-on" applications for each research phase." *Qualitative Market Research: An international journal* (Qualitative Market Research: An internationam journal).
- Roberts, Marion . 1991. *Living in a man-made world: Gender assumptions in modern housing design*. London: Routledge.
- Rouzbeh, Masoumeh, Alireza Khezrian, and Sarah Biglari. 2014. "حس وحدت در معماری معاصر ایران". *National Conference on Architecture, Culture and Urban Management*. Kerman: Mehr Andishan Arfa Scientific Research Institute.
- S.Bahammam, Omar. 2006. "The role of privacy in the design of the Saudi Arabian courtyard house." In *Courtyard Housing*, by Brian Edwards, Magda Sibley, Mohamad Hakmi and Peter Land, 102-111. New York: Taylor & Francis.
- Sadoughianzadeh, Minoosh . 2013. "Gender Structure and Spatial Organization: Iranian Traditional Spaces." *SAGE Journals*.
- Saeednia, Ahmad. 2004. *urban space and furniture design*. Tehran: Organization of Municipalities of the country (Iran).

- Saeid Golestani, Isa Hojat, Mehdi Saedvandi. 2018. "A survey on spatial integration and its evolutionary progress in Iranian ancient mosques." *MEMARI-VA-SHAHRSAZI (HONAR-HA-YE-ZIBA)*.
- Sane, Mansour. 2001. *بیداد شیراز (عکسهای شیراز قدیم) [Remember Shiraz (Old Shiraz photos)]*. Shiraz: Ministry of Culture and Islamic Guidance.
- Sareban, Faroogh. 2019. "بررسی نور و رنگ در معماری سنتی ایران [A study of light and color in traditional Iranian architecture]." Tehran: <https://civilica.com/doc/785377/>.
- Saunders, Mark NK , Philip Lewis, Adrian Thornhill, and Alex Bristow. 2009. *Research Methods for Business Students*. Fifth edition vols. Harlow: Pearson Education.
- Saunders, Mark , Philip Lewis, and Adrian Thornhill. 2009. *Research Methods for Business Students*. Pearson Education .
- Seyed sadr, Seyed abolghasem . 2000. *دایره‌المعارف معماری و [Encyclopedia of Architecture and urbanism]* و *شهرسازی*. Tehran: Azadeh.
- Seyfian, Mohammad-Kazem , and Mohammad Reza Mahmoudi. 2006. "محرمیت در معماری سنتی ایران [Confidentiality in the traditional architecture of Iran]." *Hoviat shahr Journal (Hoviat shahr Journal)* 9.
- Shahfi zade, A, and A Ahmadi Disfani. 2014. "The Comparative privacy in rasht and Kashan houses." *International Conference on Sustainable Architecture and urban landscape*. Tehran.
- Shils, Edward . 1983. *Tradition*. Chicago: The university of Chicago press.
- Shojaei, S.A.R , and Zahra khodayari. 2011. "Sustainable Architecture in Arid Regions of Iran." *5th Symposium on Advances in Science and Technology*. Mashhad: KHAVARAN Institute of Higher Education. 1-8.
- Soflaei, Farzaneh. 2003. "پایداری عناصر اقلیمی در معماری سنتی ایران [Stability of climatic elements in traditional Iranian architecture]." Tehran: 3rd Conference on Energy Conservation in Building.
- Soltanzadeh , Hosein. 2010. *هویت در معماری معاصر جهان [Identity in the contemporary architecture of the world]*. Ghazvin: Azad University of ghazvin.
- Soltanzadeh, Hosein. 2013. *فضاهای شهری در بافت‌های تاریخی ایران [Urban spaces in the historical contexts of Iran]*. Tehran: Cultural Research Office.
- . 1993. *فضاهای ورودی در معماری سنتی ایران [Entrance spaces in traditional Iranian architecture]*. Tehran: Municipality of Tehran.
- Soltanzadeh, Hossein. 2005. "From house to apartment." *Architecture and Culture Quarterly* 142–154.
- Soucek, Svat. 2014. *An Historical Geography of Iran*. Originally published in 1984. New Jersey: Princeton University Press.
- Statistical Center of Iran. 1996. *National system of definitions and statistical concepts [سامانه ملی تعاریف و مفاهیم آماری]*. <https://statdef.sci.org.ir/>.
- Sykes, Percy Molesworth. 1921. *A History of Persia*. London: Macmillan and Company.

- Tabibian, Manouchehr, Nasibeh Charbgo, and Ensieh Ablolahimehr. 2011. " بازتاب اصل سلسله مراتب در " [Reflection of the principle of hierarchy in Iranian-Islamic cities]." *Arman Shahr* 63-76.
- Taheri, Jafar. 2013. " بازاندیشی مفهوم سکونت در معماری " [Rethinking the Concept of Housing in Architecture]." *Journal of Iranian Architecture Studies* 5-22.
- Taqi, Mir Muhammad. 1989. *Famous elders of Pars*. Shiraz: Shiraz University.
- Trevor , Marchand. 2008. "Muscles, Morals and Mind: Craft Apprenticeship and the Formation of Person." *British Journal of Educational Studies* 245-271.
- Vakili-Ardebili, Ali , and Abdel Halim Boussabaine. 2006. "Quality Concept in Persian Precedent Architecture: A Lesson in Eco-Building Design." *PLEA2006 - The 23rd Conference on Passive and Low Energy Architecture*,. Geneva, Switzerland.
- Wagner DeCew, Judith , and Edward N. Zalta. 2015. "Privacy." *The Stanford Encyclopedia of Philosophy*. <<https://plato.stanford.edu/archives/spr2018/entries/privacy/>>.
- Yarahmadi, Mahmoud Amir. 2002. *مفهوم سکونت: به سوی معماری تمثیلی* [The concept of dwelling: on the way to figurative architecture]. Translated by Mahmoud Amir Yar-Ahmadi. Tehran: Agah.
- Yousif, Maysa , and Aniza Abdul Aziz. 2021. "AN EVALUATION OF VISUAL PRIVACY LEVEL IN RESIDENTIAL UNIT'S." *Journal of Islamic Architecture* 349-359.
- Yousoufifar, Shahram. 2007. " [Patterns of physical expansion of the city in the Middle Ages of Iranian history]." *Journal of Literature and Humanities* 319.
- Z. Rousta, S.M. Monavari, M. Darvishi, F, Falahati, M. Morovati. 2013. " ارزیابی روند توسعه فیزیکی شهر شیراز و " [Evaluation of the process of physical development of Shiraz and the effect of physiographic conditions on the process of land-use change]." *Geography and Environmental Planning Journal* 183-200.
- Zakeri, Mohammad hosein, and Hamid reza Hoseini. 2015. " بررسی نظام سلسله مراتب ورودی در مدارس تاریخی " [Investigating the system of entrance hierarchy in historical schools of Shiraz]." *Third National Conference on Oil and Gas and Related Industries*. Qazvin: Islamic Azad University of Qazvin. doi:CBEAUI01_120.
- Zareie, Hani. 2010. " [Investigation of stylistic features of residential architecture of Qajar period in Shiraz]." *National Conference of Contemporary Iranian Architecture and Urbanism*. Shiraz: CIVILICA.
- Zein Alabidin, Mahmoud . 2010. "The Courtyard Houses of Syria." In *Courtyard Housing: Past, Present and Future*, by Brian Edwards, Magda Sibley, Mohamad Hakmi and Peter Land, 41-53. New York: Taylor & Francis.