

Reading the Schema of the Contemporary Urban Building Facade of Tehran in the First and Second Pahlavi Eras*

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ABSTRACT

Nowadays, it is necessary to consider the urban image, which follows functional and visual systems, providing a comprehensive overview of the city. Unifying and organizing the façade of the buildings by referring to the valuable contemporary architectural works in the First and Second Pahlavi eras have been raised as a necessity in recent literature. The façade of the building and urban image in Iranian architecture is of particular importance. High-performance architecture theory was used to answer the research questions in the present study. The case study was the precious buildings of the First and Second Pahlavi eras. The research approach was the logical reasoning, and the research method was the descriptive-analytical method in which Gestalt analytical methods were used to analyze the systematic historical patterns in the urban façade. The present study aimed to analyze the perceptual principles ruling the façade and the city by concluding the statistical results and based on the related references and interviews with the experts using the logical reasoning method. The research results were concluded to determine the relationship between the formal proportions and the perception process of the building façade by the viewer in the precious facades of the contemporary architectural heritage of Iran. The study findings show that the selected facades of the heritage of the contemporary architecture create a sense of richness in the audiences so that they could have a profound understanding of the facades when seeing them. According to the comprehensive approach to sustainable architecture and guide of the architecture design, the design richness in the samples was the reason for establishing a relationship and the interaction with the audience so that the building façade is perceived as the native identity by the audience.

Keywords: Contemporary Architecture Heritage, High-performance Architecture Theory, Sustainable Architecture, Contemporary Architecture, Native Identity.

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1. INTRODUCTION

Paying attention to the identity-making role of the building facades and the need for their harmony with the culture and demands of the audience is one of the significant and influential discourses in contemporary architecture. Meta-analysis of the conducted studies in recent years emphasizes the significance and importance of this consideration (Mahdavinejad & Hosseini, 2019), which becomes more important when contemporary architecture is considered a part of the accomplishments of the contemporary area for the next generation (Mahdavinejad, 2016). Hence, reading the schema of the contemporary urban building façade is considered a way to define an outlook for the future of contemporary architecture and urban planning in Iran. Since a part of the building, such as the building facades, are less influential on the efficiency, visual manifestations, and appearance of the building, the organization of the components and elements of the façade becomes important and the focus of the architects, engineers, and researchers of the construction. It is necessary to study the façade of the buildings as a part of the quality-oriented view of the city, which requires identifying the constituent elements of the façade to prevent the development of the building façade patterns without any physical and perceptual background and generate a heterogeneous combination of the urban walls. The absence of these elements has led to the loss of the aesthetics quality of the urban building facades. The current paper aims to evaluate and introduce the Gestalt role in the constituent elements of the building façade and wall. Since the architecture of Iran has had a considerable qualitative and quantitative development in the Pahlavi era, this progress can be seen in the architectural form of the Pahlavi era in terms of form, proportions, materials, technology, and the use of the visual metaphors of the western modern architecture combined with the past architecture of Iran (Kiani, 2007). Cultural, social, economic, and political conditions have led to providing a proper ground for implementing the modern evolutions in Iran, which was not possible in previous years. Thus, these visual changes in the facades of the buildings in Tehran in the stated era are analyzed perceptually and semantically. The present study is required since the mainstreams of the contemporary façade design, especially in the Pahlavi era, were towards the use of the modern foundations of the architecture in producing the formal schema in the design of the building walls. In general, the current research aims to answer how can the systematic historical patterns be applied in the semantic field of gestalt to improve the perceptual quality of the urban façade schema? This research investigated the proportions of the façade in a specific historical era in terms of perception, and used the perceptual-semantic approach to study the perceptual continuity and development of the gestalt patterns in the contemporary era, can contribute to understanding

the bases of generating the semantic and static relations in the walls of the urban space.

2. LITERATURE REVIEW

Given the research background, it can be claimed that the relationship between the visual patterns of the gestalt and the urban facades, especially in the Pahlavi era, has been neglected in the previous studies. Therefore, the current study has novel aspects and seeks to discover the latent and obvious relationships in the selected building facades and their meaningful interrelationships.

A study was conducted by Mehdi Khakzand entitled "Identifying the influential factors on the urban walls with an emphasis on the aesthetics and environmental aspects". The influential factors on the design of the urban walls of Valiasr Street in Qeshm city were identified as the most prominent street of this city by emphasizing the aesthetics aspect (Khakzand, Mohammadi, Jam, & Aghabozorgi, 2014, p. 15).

In a paper entitled "Century of Gestalt Psychology in Visual Perception: Perceptual Grouping and Figure-Ground Organization," Wagemans have studied the classic and modern gestalt relationships, and then, considered it influential in the relationship between the elements and the form and perception of the depth of the contours and the ownership of the boundaries, and analyzed the perception of the form from the context in the façade (Wagemans & Elder, 2012).

Langhein, in "Perception in Traditional Architecture", believed that a determining ratio based on the gestalt principles rules the structural relations of the building. He studied these geometrical relations in the four-story buildings of Germany (Langhein, 2014).

Fatemeh Mahdavi Shahri, in her dissertation entitled "Design Guidelines for Urban Wall based on the Gestalt Principles", studied Rahnemaei Street of Mashhad, and by using the gestalt principles, identified the guideline to explain the urban design criteria. Then, she stated that by observing these principles, the dynamic wall is created as a regular and efficient whole with an identity (Mahdavi Shahri, 2015).

In a paper entitled "Investigating the Role of Gestalt Psychology in The Quality of the Residential Building Façade", Behnaz Rabeian analyzed Gestalt theory and the effect of its rules on the façade of the historic buildings of Babol City. She believes that observing the gestalt bases in design leads to sustainable urban spaces (Rabeian, Kord Jamshidi, Maghouli, 2016, p. 32).

Mozhgan Hatami tried to consider the relationship between architecture, psychology, and urban design using the application of environmental psychology in architecture and urban design based on the principles and criteria of the design of the residential complexes in her paper. In the end, she also pointed out the perceptual-semantic criteria in the studies of the residential complexes (Hatami, 2016, p. 153).

Shazamani Sichani also, in her paper, studied the plan of Mohtashami House in Isfahan based on the gestalt rules. She considered the gestalt principles with a new approach and investigated the structure of the house by modeling (Shahzamani Sichani & Ghasemi Sichani, 2017, p. 47).

In a paper entitled “The role of Kaplan’s Matrix in the Evaluation of the Building Façade”, Sanaz Memari analyzed the role of each variable in Kaplan’s Preference Matrix in the setting of the building façade quantitatively in addition to recognizing the aesthetics and mental experiences. She knew cohesion, complexity, and mysteriousness as the perceptual bases affecting the meaningful façade (Memari & Pazhuhfar, 2017, p. 13).

Mohsen Faizi, in a paper entitled “The Effect of the Gestalt Theory on Urban Planning”, analyzed Naghsh-e Jahan Square. He believed that the composite stimuli are related to the features determining the appearance of the city. These elements are meaningful in the structural relations of Gestalt. He stressed that the visual stimuli are applied to create a meaningful city based on Gestalt theory. To this end, comparing Lynch’s theory and Gestalt, the qualities of the urban environment, especially in the case study -Naghsh-e Jahan Square- were identified (Faizi, Shahbazi, & Heidari, 2017, p. 675).

Laupheimer knew the urban façade as a procedure on the neural system of the city. He analyzed the visual relationship of this network in a paper entitled “Neural Networks for the Classification of Building Use from Street-View Imagery”. In this paper, an approach was presented to classify the images of the building façade into five different tools. It is the perceptual-abstract presentation of the location of the negative and positive spaces created in the building façade. In addition to this classification, these factors were introduced in a system analyzed in the so-called activation maps (Laupheimer, Tutxauer, Haala, & Spicker, 2018, p. 177).

Shahrazad Javanmanesh, in a paper entitled “Analysis of Public Buildings Architectural Composition in Ankara”, identified the façade of the building by qualitative analysis methods. She also studied several buildings of Ankara between 1923-2014 using Gestalt approaches and evaluated the building facades of this period by the concepts presented by Arnheim and Henry Sanoff in addition to using the gestalt theory (Javanmanesh, 2018, p. 99).

The current research is a novel study due to studying the building facades of the Pahlavi era in terms of qualitative analysis of the perceptual-visual relations of Gestalt on the one hand, and qualitative analysis based on the evaluation of the obvious and latent layers in the

perception of the visual relations, on the other hand.

3. RESEARCH METHOD

The current research was a qualitative-quantitative study by nature. Since this study aimed to perform a statistical analysis between the variables in the pattern of the facades, it was considered quantitative research. However, given the presented conceptual model and its qualitative nature in perception, this study was qualitative research. The present research applied the analytical method as well as the historical-interpretive method in terms of purpose. Also, this paper used logical reasoning by presenting the visual evidence in its organization. The main research approach was the design-based approach (Mahdavinejad, 2020) to the urban facades. It emphasized more on the audience’s perception (Esmailian, Etesam, & Mahdavinejad, 2021), and what was perceived by the audience is analyzed as the audience’s perception of the architectural work (Rasoulzadeh & Moshari, 2021).

This research was performed using the Fuzzy Delphi method. The Delphi method in this research included a questionnaire, experts’ opinions, controlled feedback, and analysis and conclusion of the results. The questionnaire consisting of the physical, semantic, and perceptual characteristics of the prominent facades of the Pahlavi period was given to the experts. The questionnaire was filled by two groups of participants to find the expected and related answers to the current terms. 35 experts, including academic experts in architecture, urbanism, and behavioral sciences, and the Delphi method were employed to find the answers. Also, 60 citizens were selected to find the answers by establishing a relationship with ordinary citizens. The scoring was conducted using a five-point Likert scale, which has higher accuracy and more valid results. According to the research subject, the independent variable was the perceptual elements of Gestalt that evaluating the effectiveness of their changes on the dependent variable, which was patterns of the urban facades, was considered in the present study. According to the findings of the perception studies, one of the most significant factors affecting the individuals’ perceptions is the sensitivity in the level of individuals’ perception of the visual relations. Thus, this factor was considered the mediating variable of the independent variable, and the criteria and indicators for its assessment were based on the conducted studies. The assessment of the independent variable (urban façade) was performed using the qualitative components, including sign and symbol, memory, mental image, and environmental association.

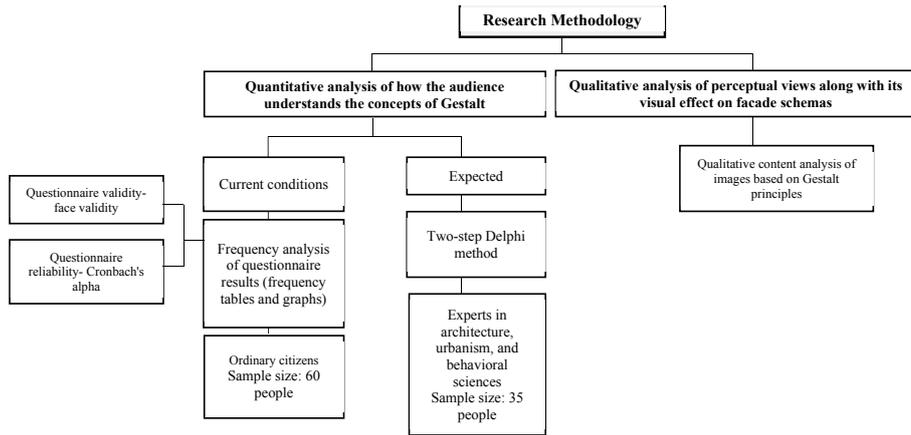


Fig. 1. Research Methodology

4. RESEARCH FOUNDATIONS

The role of the building facades and their harmony with the audience's culture and demands is a challenge that architects and scholars face to achieve excellent architecture. Achieving a high-performance architecture can be considered an attempt to regenerate the cultural identity and improve the building façade in the contemporary era. In other words, this meta-analysis that studies the reading the schema of the contemporary urban building façade in Tehran is influential simultaneously on the efficiency and the visual manifestations of the building. The systematic reading of the urban façade is to define the visual schemas ruling the recognition and perception of the facades on the skin of the building, which forms the contemporary urban image.

4.1. The Concept of Schema in Urban Façade

Schema is a graph applied by the graphic symbols to plan the elements of the structure, and it is often not required to include the details in the schema, and sometimes the unrealistic details are used for better understanding and perception. The mental image of the city is a valuable schema in the individual's mind of the urban landscape. The components, such as personal, social, inner, and value elements, play a determining role in creating the mental image, which is the organized image of the city. An individual's mental image can be identified based on two aspects.

A) The relationships, memory, expectations, and desires that provides the relationship between the individual and landscape as a perceptual-semantic complex.

B) The three-dimensional information received from the landscape, which forms the image (schemas) (Lynch, 1994).

The organized schemas in the individual's mind are the reflection of the environmental elements. The social-cultural differences lead to forming mental images with various structures (Harvie, 2014). John Lang, in his book entitled "Creating Architectural Theory",

addressed the relationship between the human and the surrounding environment. He identifies the human's perception of the surrounding environment and individual's perceptions of the environmental structure and believes that creating a mental schema in the interaction between the individual and environment leads to forming the human activities and behavior in the urban environment (Hatami, 2015).

The mental schemas are directly formed by the real activities and the social and personal experiences of every individual (Ghasemzadeh, 2006, p. 58; Garnder, 2013, p. 102; Vygostky, 2004, p. 13). However, considering that the mind has a conservative mechanism, the schemas might gradually be resistant to the change and prevent receiving the inconsistent information with the previous perceptions, consequently, recalling the information from memory be biased. Thus, the mind is often obstacle changes by the schemas originated from the inner cultural habits and creates inertia.

According to Nasr, the schema is a part of the perception system, which controls the activity of seeing and the type of the received information. The schema changes over time due to the experience. Thus, the schema of the facades in the studied periods was valued in a way to classify the type of the perceived information by the mind.

4.2. The Influential Components in the Schema of Façade

The façade and its role in the urban landscape roots in several components. These components, the visual and functional factors, form fundamental changes in the urban environment. Nasr believes that these fundamental changes emerge at various levels; from an artistic perspective (color and proportions), design perspective (body, rhythm, and opened and closed spaces), and from the geometrical perspective (length, width, height, and volume of the façade). There is a common attribute in all these changes and evolutions called the aesthetics and general urban proportion. In the architecture of the Pahlavi era, the change in the façade was more manifested by imposing the

extraversion to introversion due to the interaction between the traditional belief and the western perspective. Deilmann introduces four functional

elements, which investigates the role of the façade structurally (Pakzad, 2013, p. 17).

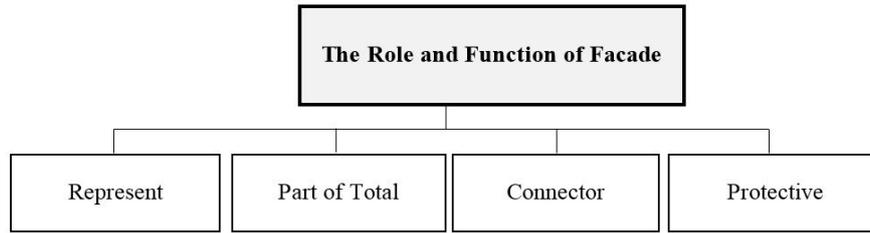


Fig. 2. The Role and Function of the Facade from Deilmann’s Perspective and the Studied Function in the Current Research
 (Pakzad, 2013, p. 17)

Deilmann et al. studied four functions expected from the façade: 1. Protective, 2. Connector, 3. Part of the total, and 4. Represent (Ibid, p. 18). Among the above functions, the representative function of the facade to express a picture of what has existed and still exists, is the subject of this research. In a total view, a façade represents the political, social, and economic conditions of the community in specific periods. Thus, facadism

can be studied in terms of sociology and architecture. The façade in the state buildings also represents the political tendencies of the rulers. Furthermore, the rectangular façade with the golden proportions of the Iranian architecture is of the common facades in this regard. The “represent” function of the façade was formed under the influence of three phases in Iran:

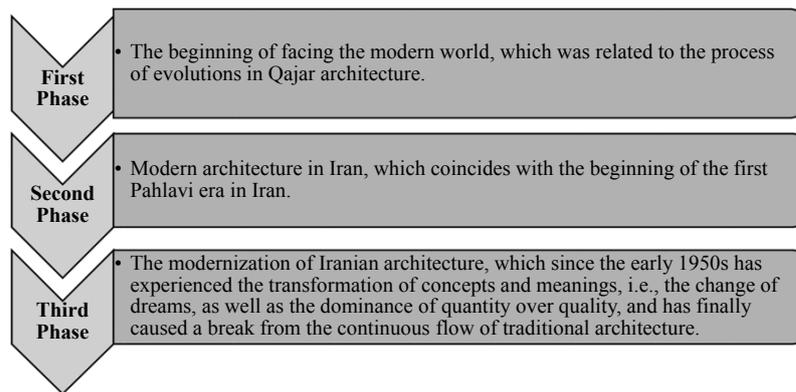


Fig. 3. The Influential Periods on the Formation of Represent Function of Façade

Regarding the theoretical and practical effects in the architecture, the influential challenges in the cultural relations became physical and objective, which had more profound effects on the superficial manifestations of the building, especially in the façade.

Another aspect, which can be seen in the façade of the Pahlavi era mansions is the use of the syntagmatic rules of the elements and serial relations. The regulations, such as repetition, symmetry, framing, and syntagmatic, and creating the visual order are applied in the façade, if the symmetry is not fully observed due to the restrictions or the function of the space, other forms of symmetry can be established in the design, which can be called the symmetry yet asymmetry. Unlike the traditional architecture, symmetry was not continued at the more detailed levels of the façade, and a general view of the symmetry can be seen. Repetition is another rule, which prevents the façade from uniformity. In the Old Iranian architecture, the distinction in the context is seen when the purpose is to

provide a context for the emergence of the emphases, distinctions, and diversities (Navaei & Hajighasemi, 2011, p. 78).

4.3. Perceptual Process in Gestalt and Prägnanz

Movement in the space and architecture transfers the possibility of creation, recognition, and perception of the architectural space to the human. A new mindset is created in the human being’s mind by observing an object in the first phase without any recognition. The individual combines the current mindset with the previous experiences to achieve a new and special feeling about that subject. In other words, objectivity leads to subjectivity, and subjectivity leads to feeling. Perception is an active and purposive process to gain information about the surrounding environment. Perception is a point in which recognition and reality collide (Lang, 2007, p. 121). In philosophy, perception has two major parts, including “sensory perception

(receiving from superficial senses) and “rational perception (inner perception), which is obtained in the supplementary of the sensory perception (Ghakhouri,

1994, p. 479). Type of perceptions has often been increased to four types in some theories, as presented in Figure 4.

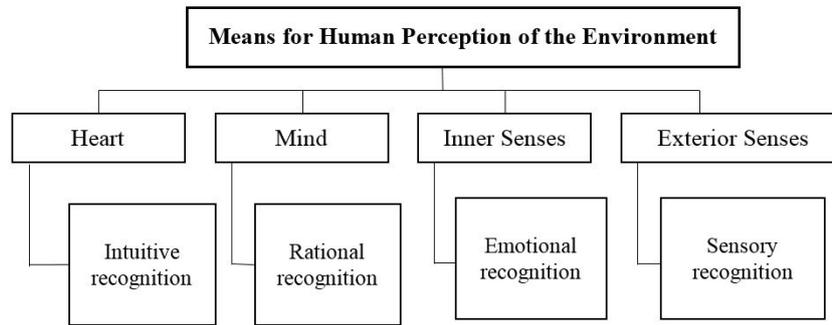


Fig. 4. The Types of Human Perceptions
(Mahmoudinejad & Sadeghi, 2009)

Gestalt theory, as a type of perceptual theory, considers the basis of perception transferring the spontaneous structure of the sensory data to the brain. Gestalt is a German word and means an organization or an idea, and in English, it means the form or a pattern, format or the format structure.

Max Wertheimer, Kurt Koffka, and Wolfgang Köhler were the pioneers of Gestalt school in the early 1910s. They know every psychological phenomenon as an irresolvable whole. Gestaltists believe that although psychological experiences are caused by sensory attributes, they are different from the nature of these elements. Gestalt psychology points out the interactive relationships between the form, object, and context, in which the object is, and the perceptual processes. Furthermore, gestalt is a partialist reaction, studying the mental and perceptual processes by breaking them into mental contents and elements (Rezazadeh, 2008, p. 32). In this regard, the findings are considered the experiences, leading to more self-awareness of the artist in the visual perception in creating the work, which was emphasized by the gestaltists. Such an effect is associated with prognosis, leading to impressing the audience by the artist, which eventually results in numerous infatuations in accepting the works. This aspect is the reason for discussion in the present study.

4.3.1. Gestalt Principles

Wertheimer's form theory in 1923 indicates the first principles of gestalt. Accordingly, various gestalts are created based on the intrinsic human desires to classify and depend on seeing the elements that are similar (similarity), the elements that are close to each other (proximity), or the elements that have structural saving (good continuation) (Behrens, 2004). Gestalt presents a nature, based on which the elements are placed next to each other in a particular way (Torrans, 1990). Kepes, in his book entitled “Language of Vision”, points out that gestalt is material, mental, or institutional totality that have specifications and its elements lack those specifications independently (Kepes, 2003, p. 21).

Lang considers three concepts of form, similarity, and spatial form in understanding the gestalt theory. Arnheim (1965) considers forces experienced at visual experience equals the physiological forces of the brain, considering it one of the characteristics of the perceived objects. Schulz also divides three fundamental principles of gestalt formed based on the equality ratio into proximity, closure, and continuity (Schulz, 2008). In landscape architecture, Simon Bell knows the pattern, perception, and process of the gestalt rules as one of the significant means in understanding the institutional characteristics of the environmental patterns and landscape aesthetics (Bell, 2015). Hence, the principles of gestalt have high efficiency and role in the adaptation of the human's mind with the environment. The principles of the gestalt theory are as follows:

- Similarity: In order to prevent the confusion in the input of the complicated visual information, the human being's mind tries to simplify it. Grouping the similar elements in a visual frame is one of the compromise method and structural simplification.
- Proximity: The elements that are close to each other are seen as a cohesive whole or a unit, or a group. The proximity and the location of the elements in the visual structure is of importance. Its four classification are as follows: Close Edge, Touch, Overlap, Combining.
- Continuance: Human being's eye tends to follow the contours in the visual structure as long as the orientation of the elements are not changed and do not cause any obstacle in perception. It can be said that there is a relationship between the driving patterns and the formation of the structural elements in the perception process (Shapourian, 2003, p. 172).
- Closure: according to this principle, the incomplete or imperfect driving patters become complete patterns in the perception process.
- Figure/Ground Relationship: This principle can be considered the most fundamental principle of visual perception in which the legibility of the image is created by the contrast between the figure and the ground. The

relationships between the figure and ground display prominent capabilities in the positive and negative structures and create the unity of the elements, and focus on the audience's attention (Dondis, 1992, p. 62). In this principle, dual identity forms are raised that constantly switch their place because they have common characteristics (Shapourian, 2003, p. 95).

- Common fate: In a visual structure, the elements that are in the same direction, are seen as a whole or a set.
- Inclusiveness: In this principle, the visual structure with smaller gestalt are under the influence of the elements with bigger gestalt. In other words, the elements with bigger gestalt enjoy stronger prägnanz than the elements with smaller gestalt.
- Symmetry: when two elements are symmetric based on an axis, the mind relates them even if they are irrelevant.
- Common Region: According to this principle, elements that come together in a predominantly closed range are perceived as part of a group.
- Element connectedness: according to the element connectedness, the human being's mind considers the connected elements as a whole.

4.3.2. Perception of Prägnanz

Gestalt theory follows the principle of prägnanz. Prägnanz is the association of the human being's mind of a good, strong, and integrated configuration. In other words, the mind's perception and the applied elements in the work affect other weak elements and distinguish the weaker configurations. Regarding the meaning of the visual work, good is not a clear term. It is better to

say emotionally less stimulating or simpler and without any complexity to apply a more accurate definition, all of which are created by a mirroring (Dondis, 1992, p. 67).

5. CONCEPTUAL FRAMEWORK OF RESEARCH

In the study of visual elements in the First and Second Pahlavi periods buildings, the profound effect of modern style along with the originality and effectiveness of Iranian architecture in the appearance of the building can be seen. However, in the middle of the first Pahlavi period onwards, the differences are evident through diversity. In the façade of the first and second Pahlavi periods, most facades were geometrical while they did not enjoy diverse forms. Nevertheless, the architects tried to create familiar images and forms in the mind by proper framing and using updated materials. The artist-architect of this period is attached to ancient Iranian architecture. However, he does not completely adhere to the pattern and tries to create a sense of nostalgia and memorability. Moreover, the architect has tried to generate alternative mental schemas using the old forms of facades. Hence, creating a volumetric game in the facade and benefiting from the porosity and difference of levels in the facade, which causes the image of the building to be recognized and transformed into a specific pattern with the signature of the Pahlavi period. The existence of modern volumes and the emergence of box-like forms with a combination of vertical and horizontal surfaces can be seen in the works of this period.

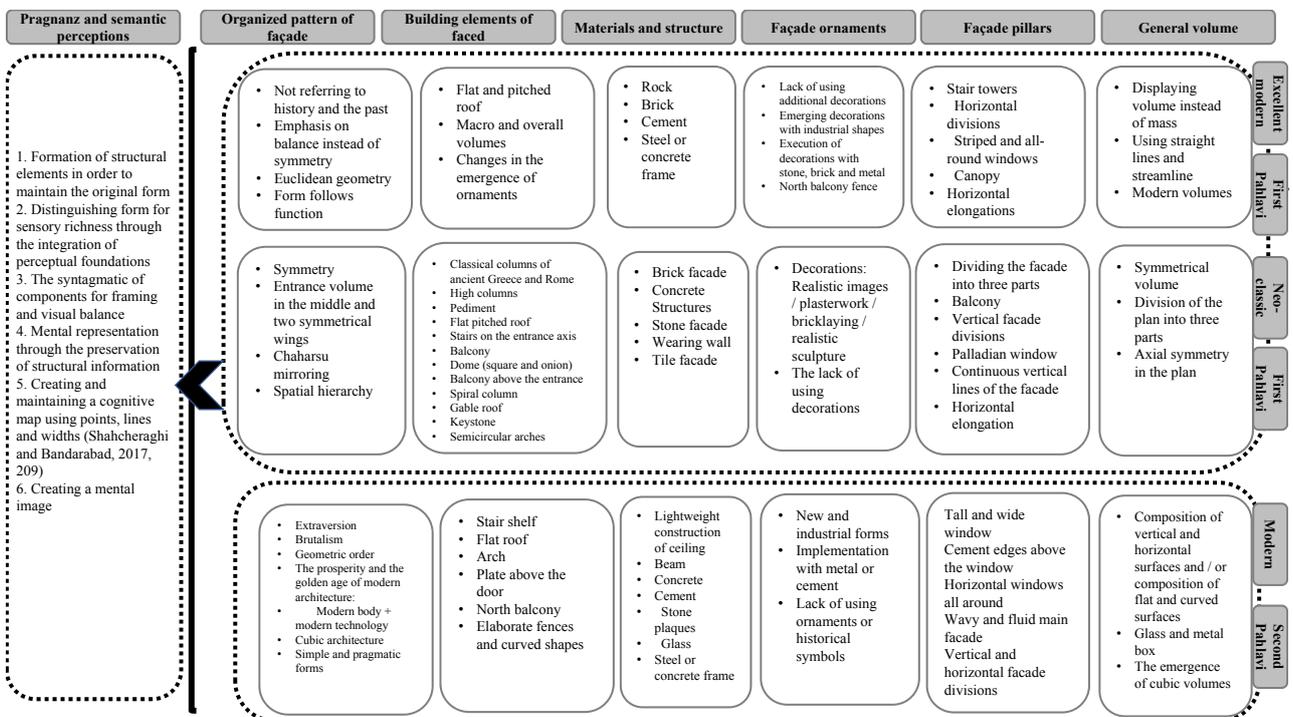


Fig. 5. Evolutions and the Physical Pattern of the First and Second Pahlavi Periods Along with the Examples of Prägnanz and Semantic Perception

Gestaltists explain the cognitive experiences and nature of the field created in the brain by pragnanz principle, which is called the core of Gestalt psychology. Pragnanz and gestalt have no other equivalent in other languages. However, its best equivalent in Persian is “existential

nature” or “essence”. Human’s perceptual-sensory organs are affected by the gestalt in the perceptual environment and conveyed as different stimuli and single sense to the brain. Finally, the brain completes it based on the pragnanz or perfectibility.

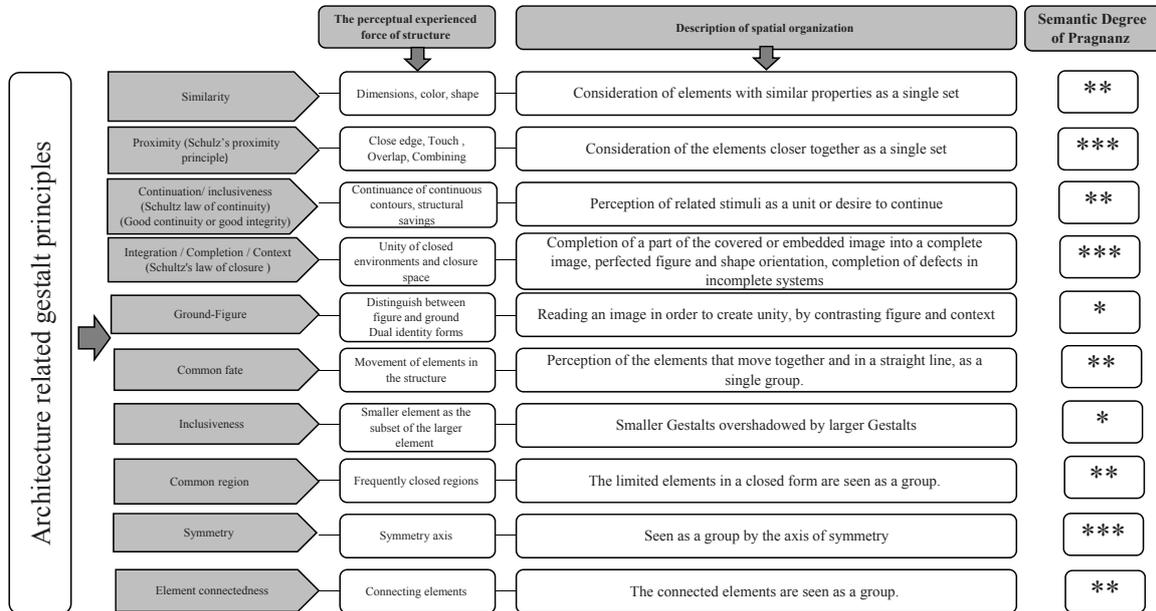


Fig. 6. The Meanings of the Visual Rules of Gestalt Theory and the Semantic Degree of Pragnanz Related to the Architecture

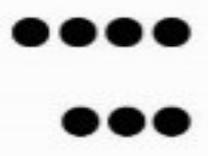
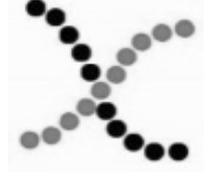
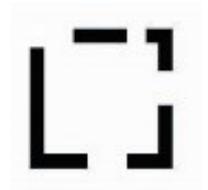
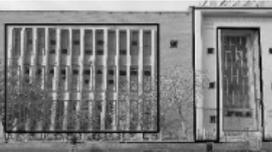
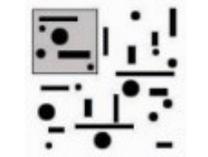
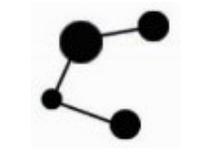
The perceptual approach to the urban wall and façade based on the gestalt principles displays that the façade pattern is considered as a figure perceived in its context, which is the surrounding urban space. The single architectural façade has a common spatial organization with its immediate wall based on the gestalt principles by the common visual structures and its constituent elements. The urban body is considered a complete form, in which any alteration and modification by the facade based on the principle of exaggeration is a deficiency in the perfected form, and human perception seeks to complete incomplete aspects and re-receive a form proportionate with its perceptual re-cognition. Also, in the proximity principle, the single façade attempts to be united with the context due to the high visual similarity to the street wall. On the other hand, based on the closure principle, the separable surfaces of the facade with the body are reduced to a minimum. Thus, the unity of the façade in the gestalt process is reduced, and its similarity with the ground, which is the complete body of the street, is increased (Juaslin, 2010).

6. RESEARCH FINDINGS

Table 1 shows the relations between the architectural façade of the selected buildings (Courthouse of Tehran, Bank Melli- Bazar Branch, Metropol Movie Theater, Central Building of Tobacco, Singer Building, Ministry of Foreign Affairs Building, Palace of the Ministry of Finance, Laleh Motel, Central Building of Sepah Bank, Jeep Building, Girl’s Vocational School of Tehran, Behshahr industrial company building, Railroad Building, Shahr bani palace, Bank Melli- Tehran University Branch, Laleh Hotel) and the gestalt principles (along with its adopted visual symbol). Accordingly, the qualitative analysis of the perceptual symbols along with their visual effect on the schemas of the façade was performed. The results of the objectivity level of the concluded gestalt relations were presented in Table 2. Then, based on the answers obtained from the analysis of the questionnaires (Table 3), the quantitative analysis of how the gestalt concepts were perceived by the audience was conducted.

Table 1. Qualitative Study of the Relationships between the Gestalt Rules Affecting the Façade

Gestalt Principles	Visual Symbol	Building	Objectivity of Relations
Similarity			Combined

Gestalt Principles	Visual Symbol	Building	Objectivity of Relations
Proximity (Schulz closeness rule)			Obvious
Continuation, inclusiveness (good continuation or well integrated)			Latent
Integration, completion, and context (Schulz closure rule)			Latent
Figure and ground			Combined
Common fate			Obvious
Inclusiveness			Combined
Common region			Latent
Symmetry			Obvious
Element connectedness			Combined

6.1. Qualitative Analysis of the Façade Perception Process

If the façade is imagined as an object, and the body of a street is considered as a set of objects, in this approach,

the building can be considered as a figure, and the street is a context facilitating being seen and the value of the figure. The façade connects the architectural space to the street and encloses it. Thus, it can be adapted and integrated with the spatial features of the city.

Table 2. The Objectivity Level of the Concluded Gestalt Relations in the Façade Pattern

Building	Style	Gestalt Principles											
		Similarity		Proximity			Continuation	Closure	Context-figure	Common Fate	Inclusiveness	Common Region	Symmetry
Dimensions	Color	Shape	Combining	Overlap	Touch	Close edge							
Courthouse of Tehran	Neo-classic	*	*	*	*	*	*	*	*	*	*	*	*
Melli Bank- Bazar branch	Rationalism neo classic	*	*	*	*	*	*	*	*	*	*	*	*
Metropol movie-theaters	Art Deco		*		*	*		*		*	*	*	*
Central building of Tobacco	Neoclassic		*	*	*	*	*	*	*	*	*	*	*
Singer Building	Neoclassic			*	*	*	*	*	*	*	*	*	*
Ministry of Foreign Affairs building	Neoclassic	*			*	*							
Palace of Ministry of Finance	International		*	*	*	*		*		*	*	*	*
Laleh Motel	Art Deco	*	*	*	*	*							
Central Building of Sepah Bank	International		*	*	*	*	*			*	*	*	*
Jeep Building	Art Deco	*	*	*	*	*	*	*	*	*	*	*	*
Girls' Vocational School of Tehran	International												
Building of Behshahr Industrial Company	International	*	*	*	*	*	*	*	*	*	*	*	*
Railroad building	Neoclassic										*	*	*
Shahrbani Palace	National style		*	*	*	*	*	*	*	*	*	*	*
Melli-Bank Tehran University Branch	International	*	*	*	*	*	*	*	*	*	*	*	*
Laleh Hotel	International	*	*	*	*	*	*	*	*	*	*	*	*

According to the stated principles, a single perceptual understanding is not achieved by observing the façade by the audience. That said, human perception has led to discovering principles using the gestalt elements, and re-perception of the notions will lead to creating new concepts in the façade, providing a context for the development of the visual schemas relations in the façade and is perceived by an audience as a single unit. Thus, the façade is obviously perceived as a single unit due to the lack of similarity of the visual qualities with the context and based on the similarity principle even though it does not have similar visual qualities. It is one of the most significant principles, which can be recognized in the pragnanz approach. On

the other hand, since the facades enjoy closed surfaces and enclosed space perceived by the perceptual power of the audience based on the closure principle and are perceived as a single form in a hidden way, having the features of unit and integrity will confirm the contrast feature of the façade in the context of the street. Also, since the elements of the façade have smaller closed surfaces than the context landscape, according to inclusiveness, it will be mostly perceived as a contrast with the context. Integrated understanding and discovering these latent and obvious principles in the schemas of the façade in the mind lead to a qualitative sense of richness and creating a desirable visual weight in the façade.

6.2. Quantitative Analysis of the Perceptual Process of Façade

In the present study, a questionnaire was used for the perceptual-semantic cognition of the gestalt that the current participants conclude from the studied facades. The results of the questionnaires were as follows:

First, given the data, formal validity analysis was used. Each of the considered items in the façade was allocated one, two, and three in this method. It is noteworthy that one means low, and three means high, and after calculating the frequency of each item, the following equation was used in the calculations: Index = frequency x (%)

If this index is more than 1.5, the item will be considered desirable for the next analyses. The obtained results from the filled questionnaires and calculating the formal-validity assessment indicate the confirmation by the experts. After evaluating the validity of the questionnaire, its reliability was also calculated. To this end, the obtained data based on the questionnaire

were inputted into SPSS software, and Cronbach's alpha was calculated for them. Reliability is one of the technical features of the measurement tools, indicating that to what extent the measurement tool results in the same results in similar conditions. One of the methods to calculate the validity is Cronbach's alpha coefficient. First, the variance of the scores of each questionnaire question and the total variance of the test must be calculated. Then, using the following equation, its coefficient value can be calculated: in this equation, K is the number of questions, and Si is the standard deviation of the total score of the questions.

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_i^2}{\sigma^2} \right)$$

In the present research, Cronbach's alpha was calculated 0.941 using SPSS software, indicating the internal consistency between the questions of the questionnaire. Also, the questionnaire results will be reliable to analyze in future analyses.

Table 3. Calculating Cronbach's Alpha Using SPSS Software

Reliability Test	Cronbach's Alpha	0.876
	Cronbach's Alpha Based on the Standardized Items	0.890

The questionnaires were filled by two groups of participants to obtain the expected answers and the answers corresponding to the current situation. Delphi method, 35 experts and academics in architecture, urbanism, and behavioral sciences were employed in two phases to obtain the expected answers. In order to achieve the existing answers, a relationship with 60 ordinary citizens was established.

Accordingly, the questionnaire results show that more than 48% of the participants discovered the existing relations in the elements of the façade. 19% were looking to create new meanings in the existing facades. 33% of the participants also simultaneously created and discovered the perceptual meanings. That said, they were up to combine the latent and obvious relations in the visual structure.

Table 4. The Frequency of the Answers Based on the Level of Objectivity of the Relations in Comparison With the System Riling in the Façade

Type of the Ruling Perceptual System	Type of Counting	The Level of the Objectivity of the Perceived Relations			Total
		Combined	Latent	Obvious	
Discovering the perceptual system of gestalt	Existing	6	22	1	29
	Expected	4.8	19.8	4.4	29
Creating perceptual relations in the mind	Existing	2	16	2	20
	Expected	3.3	13.7	3	20
Development of the perceptual system of gestalt of the existing elements	Existing	2	3	6	11
	Expected	1.8	7.5	1.7	11
Total	Existing	10	41	9	60
	Expected	10	41	9	60

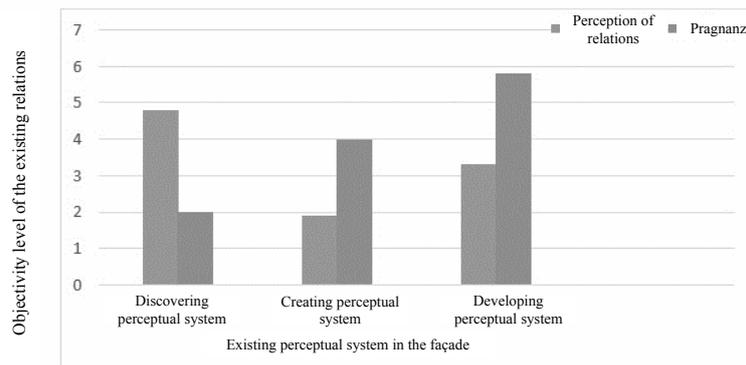


Fig. 7. The Relationship between the Ruling Perceptual System and the Level of Objectivity of the Existing Relations in the Facades of the Pahlavi Period

Table 4 presents the findings of field studies in terms of classifying the level of objectivity of relationships and the type of perceptual system. Accordingly, as can be seen in Figure 7, since Pragnanz is a perceptual process, it has had an increasing effect on the system of development of the structure of the facade composition by influencing the experience of cognition and the effect it has on the mental image. This result leads to a sense of richness in the development of the perceptual system.

7. DISCUSSION

The latent and obvious relationships in the selected facades are significant that the result of their integration leads to emerging the perception circles. The existing gestalt in these facades activates the deep perceptual layers and the sense of richness occurs the required condition for which is the latent and obvious phases in

the relations and proportions. In this phase, by activating the deep perceptual layers, a better understanding of the schemas in the façade by the audience results. There is a direct relationship between the façade schemas and the completion of the perception process. The result results indicate that the facades of the Pahlavi period style create a sense of richness in the audience to the extent that 33% of participants, i.e., 1.3 of respondents could have a profound understanding when facing the facades. According to the mental image relationship, when the perceptual information of the façade turns into the mentality that the third ring or the combined perception of the latent and obvious relations occur in the design of the façade. If these meanings are pleasant and inspiring, the mind feels stimulated, which creates a mental image. It will contribute to making a healthy and structured city in the urban walls as an organized whole in the form of the integrated schema in the façade.

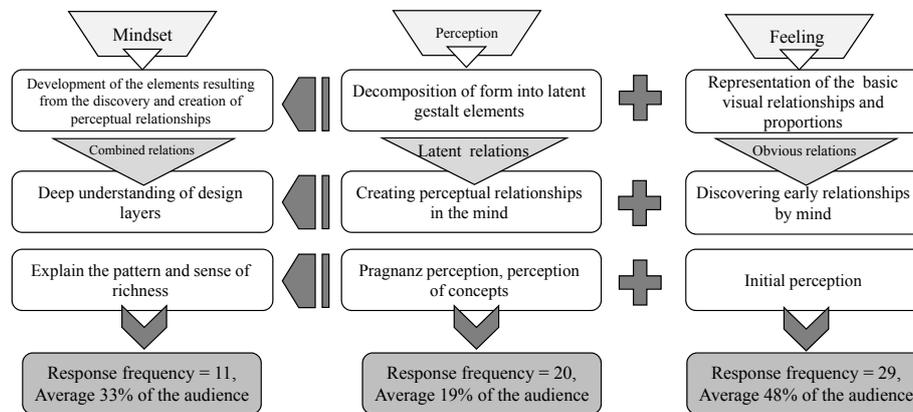


Fig. 8. The Relationship between the Semantic Circles of the Perception, Schema of the Façade, and Sense of Richness

8. CONCLUSION

Achievements show a significant relationship between the patterns in the heritage of contemporary Iranian architecture and the resulting sensory richness in the audience. By applying the perceptual principles of Gestalt to facade ratios, it was possible to analyze these ratios graphically. In the final evaluation and comparison between the obtained results, since the totality of the phenomena is phenomena beyond their set, it was found that people perceive another intangible element in their visual description of the facades in addition to the specified criteria. This element is the emotional-psychological effect that the facade has on the minds of people, which a significant percentage of respondents have mentioned in their description.

Quantitative findings of this study show that when the perceptual features and qualities of the facade are discovered by the audience, the unambiguity of facade schemas as the most important factor and variable related to meaning causes a variety of meanings and creates a mental image. Also, by paying attention to the visual characteristics of relations in the structure of the

facade, it was revealed that through regular proportions in the expression of the Gestalt perceptual domain, unity is achieved and this unity can be recognized as a "perceptible facade". The perceptible facade, in which a trace of the discovery, creation, and development of the Gestalt system can be seen, includes the main circles and the intermediate relations of perception.

According to pragnanz principle, the perceptible facade has a persistent effect on the audience, leading to the formation of the mental image. That said, human perception results in discovering specific principles using gestalt elements. Re-perceiving the notions leads to creating new concepts in the façade. Eventually, it causes the development of the relations of the visual schemas in the mind by finding meaning and is perceived as a whole by the audience. In other words, the brain gives a new aspect to the sensory stimuli based on the pragnanz rule, which associates a combination of what is seen and perceived to the mind. This combination leads to the development of the existing relations in the mind and creates a sense of richness. The façade can be adapted with the features of the mental perfection of the audience.

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