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Research Paper

Reading Layers of Meaning in the Facades of Contemporary Mid-Rise Residential Buildings in Tehran*

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ABSTRACT

The critical conditions of residential buildings' facades in Tehran have called attention to the significance of meaning in Iran's contemporary architecture. The goal of this study was to discover façade meanings received by architects and non-architect users and to investigate the similarities and differences of their readings. Meanings from a built environment influence users' emotions and feelings, aesthetic preferences, and behaviors. When discovered, these meanings will enable the architects to predict public's reading of facades and their preferences. This qualitative study applied the Grounded Theory and a systematic approach. Data were collected using the semi-structured interview technique, and samples were selected using the mixed purposive and theoretical sampling. In the process of discovering meanings and conducting interviews, three stages of reconstructing Horizon of Expectations developed by Hans Robert Jauss' Reception Theory were used. Interview data were categorized and analyzed using the interpretive analysis and the open, axial, and selective coding procedures in the MAXQDA software. The summarization and analysis of data led to the extraction of similarities and differences between architects and non-architects reading of contemporary Tehran's mid-rise residential buildings and the development of a conceptual model of layers of meaning received by the two groups (by emphasizing the three main components of "general features", "physical features", and "content features", as well their sub-components). The most important findings showed that architects had prioritized façade styles, geometric composition, semantic symbols and signs, while non-architects had prioritized economic values, materials and colors, as well as personal emotions. Meanwhile, it was notable to see the disagreement of the two groups over the aesthetics and symbolic meanings of the Roman style and their maximum agreement over reading post-modern style symbols. Findings could also help architects better account for the semantic needs of the public and provide more desirable façade designs.

Keywords: Reading Architecture, Layers of Meaning, Grounded Theory, Reception Theory, Mid-rise Residential Facades.

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1. INTRODUCTION

In recent decades, with the increasing consequences of paying less attention to meaning in contemporary architecture, particularly in Iran, the significance of meaning in architecture and the urgent need for more research in this domain are now being revealed, especially when behavioral and environmental psychological sciences have found their way into this realm. The built environment can only materialize its substantial mission through the human's proper perception, as understanding the factors influencing his perception and the meaning he has received will highly influence the generation of a desired environment. Hershberger maintains that studying the architectural meaning is key to understanding how an environment is designed and how a building should be perceived with a sense of satisfaction (Hershberger 1969, 175).The key issue, however, relates to the ambiguity of how the public and architects would receive the meaning of a work of architecture; because it is easy to understand the message receiver's explicit views, but it would be more difficult to explore the user's conscious attitudes and analyze his subjective experiences (Fouguier 1988, 331). The core objective of this study, as stated above, was to lay bare the deeper layers of meanings received by architects and non-architects and to investigate their similar and different readings of the facades of contemporary mid-rise residential buildings across Tehran. Understanding the façade meanings received by the public will certainly enable architects to design facades to establish a better semantic relationship with the public.

In an urban fabric, residential buildings represent the culture of a society and the identity of people as they are associated with all dimensions of human life. In Tehran, contemporary common mid-rise residential apartments (from 1991 up to now) have been playing a critical role in shaping the urban landscape (Sadat Mortazavi et al. 2022, 76). In architecture, the façade is the main face and image of the building; in Tehran, the chaotic state of contemporary architecture is clearly visible in the exterior walls of the buildings. Buildings are usually criticized, analyzed, and evaluated by their outer walls. For instance, Charles Jencks evaluates modern and post-modern buildings' coded meanings based on photos of the buildings' outer facades (Groat 1982, 9).

To meet the study's goal, the process of meaning reading and study procedures was explained methodically by investigating the theoretical foundations. In this connection, one of the main qualitative research strategies, which provides theoretical thinking about textual data through a set of formulated techniques and methods, is the Grounded Theory approach. Grounded Theory is concerned with understanding peoples' viewpoints and acquired meanings in a specific situation (Lak 2014, 48). This study thus employed an inductive-exploratory method to present a conceptual model of layers of meanings in residential apartment facades. Flexible qualitative methods also allow for the utilization of meaning-related theories in the process of discovering the hidden meanings of a phenomenon. In this connection, Hans Robert Jauss' Reception Theory could offer help in methodically reading architectural work for its focus on the user and the elimination of the boundary between the subject and the object.

The post-modern era saw a humanism-led paradigmatic shift to criticizing a human body vacuum in architecture which appeared by integrate phenomenology and environmental psychology. Unlike the traditional approach that signified the experienced object, this approach emphasized the experiencing subject (Moosavian et al. 2022, 128), thereby focusing on the user and the meaning he received. This was also followed by the research on semantics that prioritized the user's reading of the text. The Reception Theory determines the reasons why or why not the user focuses on a work of art. According to the principle of "Pleasure of Aesthetics", a work of art will warmly be received when it meets the user's horizon of expectations and produces pleasure (Namvar Motlagh 2009, 101).

In-depth semi-structured interviews were conducted in the process of understanding the meanings received by the user to help provide a better interaction between the object and the subject. For Hershberger, meaning and perception are stated more clearly than the environmental behavior, suggesting the significance of peoples' verbal statements about buildings (Hershberger 1974, 119). He maintains that the most effective method to study meaning in architecture is to empirically and directly analyze the differences in perception between architects and the public (Hershberger 1969, 175). This study also concerns the discovery of meanings of contemporary Tehran's building' facades to explore possible differences. The study poses the following questions: "Which layers of meanings would architects and non-architects receive from the facades of contemporary Tehran's mid-rise residential buildings?" "What differences and similarities are there with the readings of the two groups?", and "How would understanding these differences contribute to designing facades of Tehran's residential buildings?"

2. LITERATURE REVIEW

In the post-modern era, theorists criticized modern architecture's reductionist view of meaning by focusing their attention on the meaning of architecture. Kate Nesbitt believes that meaning constitutes one of the main themes of the post-modern era that delves into the substance and essence of architecture (Nesbitt 1995, 44). Post-modern thinking is characterized by such concepts as uncertainty, meaning fluidity,

relativity, and plurality. Meaning is not a pre-determined issue and the users are the creator of meaning in interaction with the architectural work. Post-modern reading is seen as a complicated totality with various layers formed with a greater focus on the process of reading, the user, and the implications of the various layers constituting the text (Rahmani et al. 2017, 110). By the late 70s, the phenomenology philosophy was overshadowed by philosophers such as Martin Heidegger and Merleau-Ponty who sought to produce a modern reading of architecture and rebuff any conception of duality of the object and the subject within the realm of architecture. The duality of the object and the subject did exist in the majority of modern thinking and led post-modern critical theories towards integrative and interactionist approaches (Adeli and Nadimi 2022, 24).

Norberg-Schulz, Juhani Pallasmaa, and Steven Holl, meanwhile, significantly contributed to developing phenomenology in architecture theoretical foundations. Phenomenology highlights the human body and its emotional perception to focus on the user's experience of the work and his reception for the discovery of architectural meaning. One of the theories of the phenomenological paradigm that concerned how the meaning of a work of art could be received is the Reception Theory by Hans Robert Jauss in the book Literary History as a Challenge to Literary Theory (1974). To him, a text's meaning is a response to questions raised by the Horizon of Expectations. According to him, there is no main meaning because meaning is a function of the process of continuous questions and answers (Jauss 1974). According to this theory, meaning is created in the interplay between the object and the subject or between the user and the architectural work. The Reception Theory is seldom used in architecture theories. The architectural phenomenology of Juhani Pallasmaa, Joseph Rykwert, and Peter Carl appears to generally shun objectivity and essentialism to implicitly focus on the central principle of the Reception Theory. This growing focus was more influenced by the German philosopher, Gadamer, a leading proponent of the Reception Theory (Gough 2013, 285). Unlike the Reception Theory, Gadamer brought architecture from the periphery to the center of attention. For this, architectural theories were mainly founded on his works. Due to the conservative approach of Gadamer's philosophy and lack of attention to contemporary art and architecture, the employment of the Reception Theory and the Horizon of Expectations could help create an inclusive form/content and object/subject concept (Gough 2013, 288).

Numerous research by prominent architecture theorists, including Rober Hershberger, Linda Groat, Charles Jencks, and Jack Nasar, has investigated how people and architects read architectural meanings, which can be used in terms of methods and findings. The literature usually subjects images of buildings to peoples' evaluation, then extracts the meanings received by analyzing data. In a study, Hershberger provided three groups of architects, architecture students, and non-architects with 25 images of building facades. Applying the semantic distinction technique to study the conceptual meaning, he investigated binary scales including pleasing/annoying, ordered/chaotic, beautiful/ugly, good/bad, etc. to compare the differences and similarities of the three groups' evaluations in detail (Hershberger 1969, 179). He concluded that, for example, in 30% of the cases architects evaluated a building as good, pleasant, and beautiful, but non-architects considered it as bad, annoying, and ugly. He concluded that understanding these differences would affect the architects' success in conveying their intentions to ordinary people (Hershberger 1969, 191).

As Jencks claimed, modern buildings with professionally familiar codes were designed for elites and acclaimed by architects familiar with the same codes. These buildings were generally interpreted with other codes by the public. As a result, the way the public interpreted the buildings differed from the meanings intended by architects. However, architects and the public used to similarly communicate with post-modern buildings, which were designed according to both professional and popular codes (Jencks 1978, 56-57). To test Jenck's claim, Linda Groat provided 40 participants (20 architects and 20 accountants) with images of 24 buildings (modern and post-modern buildings) and analyzed their responses, finding that there was a stark difference between the two groups. The key point is that the two groups did a different stylistic classification between the buildings. This study showed that only architects would be able to discern the exact differences between modern and post-modern buildings (Groat 1982, 20).

Many researchers have investigated architects and non-architects' aesthetic judgments to discover the meanings received, as the cognitive evaluation of received meanings constitutes the factors influencing aesthetic perception. In a study, Urban Design Aesthetics; The Evaluation Qualities of Building Exteriors, Jack Nasar examined the characteristics that would stimulate desired evaluation reactions (Nasar 1994). It was found that aesthetic responses, mostly influenced by biology, personality, social and cultural experiences, associations, internal constructs, and environmental factors, can be commonly found among people (Nasar 1994, 380). Emotional responses can be expressed as independent of or prior to cognition. On the other hand, empirical research has shown that the formation of cognition will influence emotions and result in the formation of a conceptual meaning in the mind. This meaning, in conjunction with emotional responses, will also affect aesthetic receptions (Nasar 1994, 381). In yet another study, after examining peoples' reception of the housing styles' conceptual meaning, Nasar asked architects to

guess peoples' responses which he found them fail to predict the public's response (Nasar 1989, 235).

Another study investigated different aesthetic evaluations and the relationship between aesthetics and complexity in buildings' facades across Iran (Ilbeigi and Ghomeishi 2017). Another study also investigated the same differences and similarities based on the cognitive characteristics of residential buildings using a quantitative method and a questionnaire (Ilbeigi et al. 2019). Using open and close-ended questionnaires, as well as in-depth interviews, another study concludes that architects focused more attention on conceptual-abstract thinking in perceiving meanings, while non-architects tended to have experimental-emotional or relative thinking (Heidari and Behdadfar 2017). One more study concerned the reception and perception of architectural work in the minds of users and elaborated on the differences and qualities of these receptions using survey methods and questionnaires. This study also examined three broad categories of semantic quality, aesthetic quality, and functional quality (Toofan et al. 2022). The literature mainly discusses aesthetic evaluations, Gestalt semantic and functional domains, semiotics, and thinking content, among others. The literature, however, does not investigate the semantic layers of contemporary Tehran's residential buildings facades by architects and non-architects' readings and their differences and similarities, using the Grounded Theory, the Reception Theory, and in-depth semi-structured interviews (which would help reveal semantic layers in greater details). For this, this present study is a novel article in this regard.

3. THEORETICAL FOUNDATIONS

Recent years have witnessed a paradigmatic shift toward the user and his reception of the architectural work. Introducing the Reception Theory in 1974, Hans Robert Jauss in a practical approach proposed how to receive a work of art (Namvar Motlagh 2009, 99). As a student of Gadamer, Jauss employed his Hermeneutics Theory to invent a method that would help readers understand a text's meaning. Following Jauss, Wolfgang Iser was a founder of the school of Constance, which emphasized reception in semantics (Ibid, 103). The school of Constance is a mainstream hermeneutic philosophy approach that, under the influence of phenomenology, tends to focus on experience more than method. According to this school, reading refers to an aesthetic experience, as understanding is based more on perception than interpretation (Ibid, 108). In the book The Act of Reading: A Theory of Aesthetic Response, Iser answers the question How and under which circumstances a work of art would convey meaning for the reader? and analyzes the phenomenology of the text reading, especially novel texts (Iser 1978).

By proposing his Theory of Act of Reading and analyzing a valuable work of literature, Iser suggests that it would not be simply valuable for the work to strengthen preconceptions; rather, it should change the normative manners of seeing and provide new signs for perception (Namvar Motlagh 2009). For Iser, the text and the user could be integrated into a similar state in the process of semantic production. Under this circumstance, the subject would no longer be isolated from the object; thus, the meaning is no longer an object for definition; but rather a work for being experienced (Iser 1978, 9-10). As the boundary between the object and the subject fades away, the text will be more of an event than an object; a reading event unfolding between the object (the text) and the subject (the user) (Gough 2013, 280). The interplay between the subject and the object, which is implicit in the Reception Theory, Gadamer's Hermeneutics, and in phenomenology, may be radicalized in Jacques Derrida's Theory of Deconstruction. Derrida deconstructed his fundamental principles of phenomenology in his work back in the early 1960s, as the Reception Theory and its predecessors were steps in the direction of eliminating objectivism and the interaction between the subject and the object (Gough 2013, 288).

For Jauss, a work of art does not have a predetermined meaning; rather, the work's meaning is influenced by its response to the raised questions based on the user's horizon of expectations. It is widely believed that a set of wants and demands could comprise the horizon of expectations of the user who, by the time of reading the text, expects the work to answer his expectations (Namvar Motlagh 2009, 100). As a consequence, to understand the meaning of a work, the user's horizon of expectations should be first reconstructed and his reaction to works be examined (Jauss 1974). Jauss describes stages of reconstructing the user's horizon of expectations in three steps 1: User's previous experience of any works of art and his general expectations of the work, 2: Forms and themes of previous works that may sound familiar to the user, and 3: Conflict of imagination and reality that would be represented in different forms in different eras (Jauss 1974) (Fig. 1).

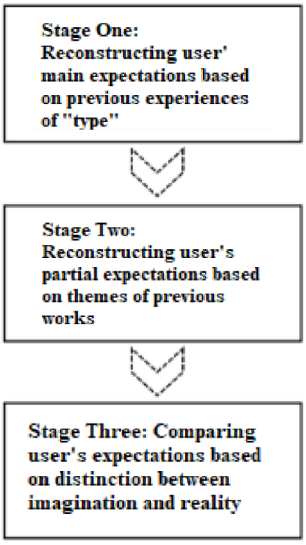
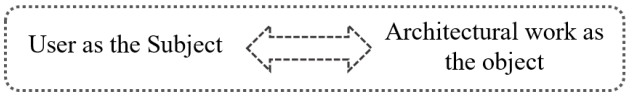


Fig. 1. Stages of Reconstructing Horizon of Expectation in the Jauss Reception Theory

Therefore, the text's aesthetic value is judged by how it changes the user's horizon of expectations. This indicates that the text is capable of shaping a social function. When the user's perception of the world changes, his social behavior will also be affected (Jauss 1982, 23-24). For Iser, the text's meaning is essentially an aesthetic response. While it [the meaning] is derived from the text, it engages the user's imaginative and perceptual capacities to make him adjust or even distinguish his concentration (Iser 1978). To this end, the aesthetics of reception does not concern the individual's behavior or a single user's psychology; rather, it is concerned with a collective and aesthetic experience underlying the individual's perception of the text (Namvar Motlagh 2009, 100).

Concerning the Reception Theory, a work of architecture is similar to writing a text occurring such as an event. Also as an event, meaning occurs only when the user blends with the text (Gough 2013, 280). Looking at Parthenon in 1911, Le Corbusier wrote: "the Parthenon makes a proposition about space and time… this continual return to the object, this look outward that is also a reflective look back, which threatens architecture because it unravels distinctions between viewer and viewed, subject and object, object and space" (Holm 2010, 184-185). This quotation suggests that the previous concept of architecture or what was called Kant's definition of architecture (defining architecture as a form serving as the object against the subject) would be overturned due to the elimination and deconstruction of distinctions between the object and the subject. The Reception Theory fundamentally states that the reality of a work does not lie with the object; rather, it lies with the blurring distinction between the subject and the object (Gough 2013, 286) (Fig. 2).

Kant's definition of Architecture



Reception Theory model of Architecture

Fig. 2. Comparing the Relationship between the Object and the Subject based on Kant's Definition and the Definition of Reception Theory

Concerning the act of reading, architecture can be considered an arbitrary text and the meaning can be read as a message. According to the Reception Theory, the architectural meaning is received not as a message but as an interactive event between people and the place. The meaning will take shape in the user's mind as an aesthetic response when he interacts with an architectural work. The following figure shows the

method of discovering the meaning received by the user's mind in the process of meaning reading using an analytical framework of the study (Fig. 3):

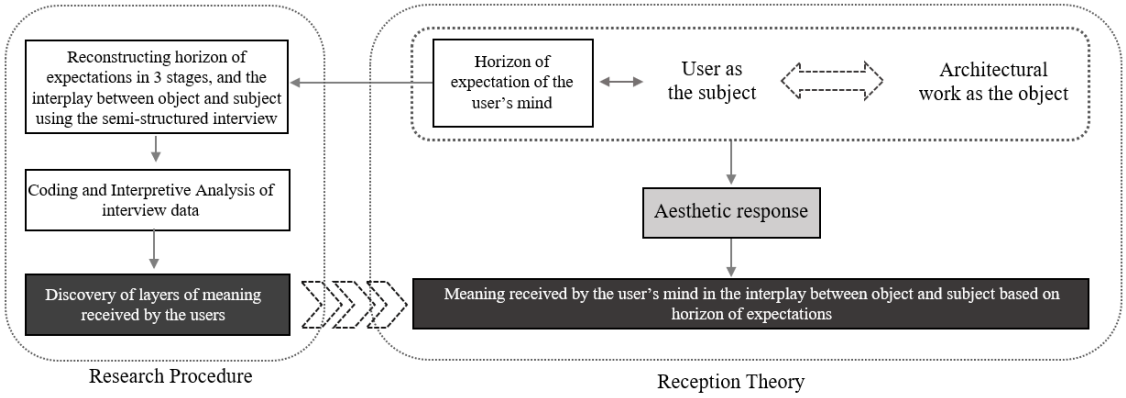


Fig. 3. Process of Discovering Layers of Meaning

4. STUDY METHODOLOGY

The research method is qualitative and was conducted with a systematic approach of grounded theory. The Grounded Theory is problem-oriented and employs an inductive approach to theorize from the data collected. According to this theory, three coding procedures, i.e., data conceptualization (open coding), categorization and relating categories (axial coding), and finally relating categories with a storyline (selective coding) were provided (Tayebi Abolhasani 2019, 78). The systematic or Straussian approach was the result of Strauss and Corbin's research, emphasizing the impartiality of the researcher and the practical techniques of research (Corbin and Stauss 1990). In the meantime semi-structured interviews were used to collect theoretical data from written documents and take samples of building façades from field surveys, and to collect data for the analytical section. Interview data were categorized using the open and axial coding procedures of the Grounded Theory and the analytical MAXQDA software (2020), applied to analyze qualitative data and coding procedures. Finally, a conceptual model of layers of meaning was developed by extracting a core category and forming relationships between categories and classifying them (Causal conditions, Context, Intervening conditions, Action/Interaction, Strategies and Consequences) (Strauss and Corbin 1990) using the selective coding procedure and the interpretive analysis method. The interpretive analysis of the interview data contributed to reading the user's experienced meaning in the form of an event. Meanwhile, the auditing method was used to validate the study. This method asks the researchers familiar with the subject under study to investigate various stages of data collection, coding, conceptualization, and other stages, and to transfer their views to other researchers (Lak 2014, 56). The external validity or generalizability of quantitative research in qualitative research is referred to as transferability, while the internal validity is called confirmability. Given the doubtful validity of qualitative data, this study provided a detailed description of the study procedure from the beginning to the end so that it would be performed at other times and places by other people. To this end, the exact stages of the study procedure are given in Figure 4 and Table 1 below.

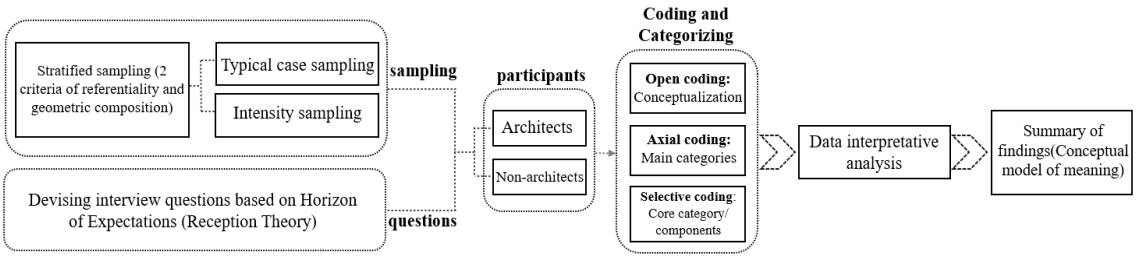


Fig. 4. Study Procedure

Table 1: Study General Characteristics

Study Layers	Study Type		
Study Methodology	Qualitative/Grounded Theory		
Study Approach	Systematic or Straussian		
Study Paradigm	Phenomenology		
Data-Collection Method	Theoretical Section Data	Analytical Section Data	
	Library Studies	Field Studies /Survey	
Data-Collection Tools	Semi-Structured Interviews	Sampling Method	The Method of Designing Interview Questions
		Mixed Purposive Sampling (Combining Stratified Sampling, Typical Cases, and Intensity Sampling)/ Theoretical Sampling	Reconstructing horizon of Expectations (Reception Theory)
Data-Analysis Method	Open, Axial, and Selective Coding (Grounded Theory)/Interpretive Analysis		
Study Validity	Auditing Method		

4.1. Measuring Meaning Reading in the Facades of Residential Buildings

To evaluate the experience of reading meanings in the facades of residential buildings, the mixed purposive sampling method of residential buildings' facades was first explained. This was aimed at providing a matrix to classify residential buildings' facades in Tehran based on two variables "geometric composition" and "referentiality". Next, how participants were selected and how semi-structured interviews were conducted using theoretical sampling methods were explained. The main and complementary questions of the interview were devised based on the stages of reconstructing the horizon of expectations.

4.2. Selecting Sample Facades

Field studies and statistical sources indicated that mid-rise residential apartments were most common in the city of Tehran (Sadat Mortazavi et al. 2022, 76). More accurate field studies and imaging of these apartments were randomly performed in several stages across different areas of the city (northern, central, and southern areas). The image of 625 facades were taken from the front view during the day to control for the factors intervening with the evaluation. The mixed purposive sampling method (combining two or more purposive sampling methods) (Jalali 2013, 318) was used due to the complexity of the study and the large statistical population of the mid-rise residential buildings' facades in the city. One of the methods was the stratified sampling method performed by uniformly classifying the samples in terms of variable attributes. Another method was typical case sampling, which was the selection of an average sample or phenomenon considered by the researcher (Teddlie and Yu 2007, 81). Upon his discretion or by consulting experts, the researcher could select the typical case. The other one is intensity sampling where the researcher selects samples that clearly represent the phenomenon under consideration, but they may fall around the median distribution (Teddlie and Yu 2007).

Firstly, concerning the purposive sampling, all facades were examined to better control how they are classified into similar groups. Two main architectural features, i.e., form and content, can be associated with two types of aesthetic variables; one variable is independently associated with the form structure and the other with the form content. The research on form structure and geometric proportions is referred to as "formal aesthetics" and the research on human responses to form contents and environmentally pleasing and evoking meanings as "symbolic aesthetics" (Lang 1987). For this, the two variables of "geometric composition" and "referentiality", involving formal and symbolic aesthetics, were selected for façade classification. This method was used to avoid contemporary common stereotypical classifications, including modern, post-modern, and classic style classifications. Also, due to the direct influence of the style of the building on interpretation, the judgment about the stylistic classification of the facades was left to the participants. Using a novel solution, all facades fell under a two-by-two matrix based on the quality of geometric compositions and signs or symbols that would refer to something other than themselves (Fig. 5).

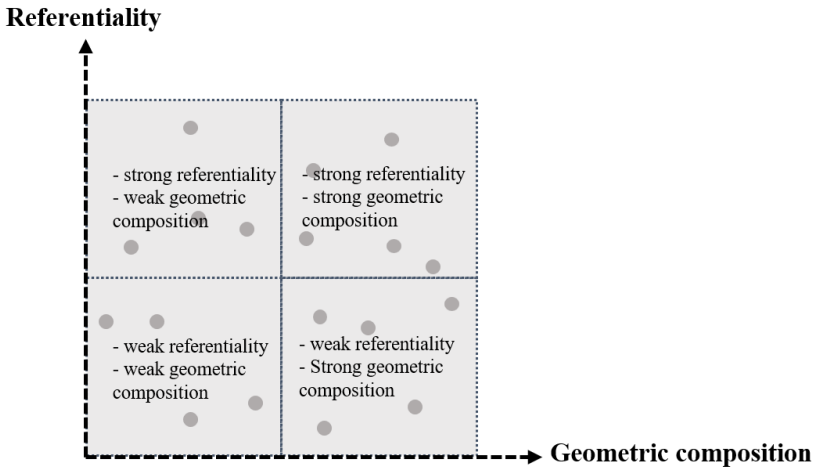


Fig. 5. Matrix for the Classification of Tehan's Residential Buildings' Facades based on two "Geometric Composition" and "Referentiality" Variables

The classification matrix has specified four categories by the intensity and quality of the variables. Thus, all facades fall under one of the categories of "strong referentiality/strong geometric composition", "strong referentiality/weak geometric composition", "weak referentiality/strong geometric composition", and "weak referentiality/weak geometric composition". After the facades were classified, several of which were selected from each category using "typical case" and "intensity" samplings. These facades were investigated by two experts for greater assurance and verifiability, as similar cases were eliminated to produce the best samples. Then, from each category, two facades were selected (Fig. 6).

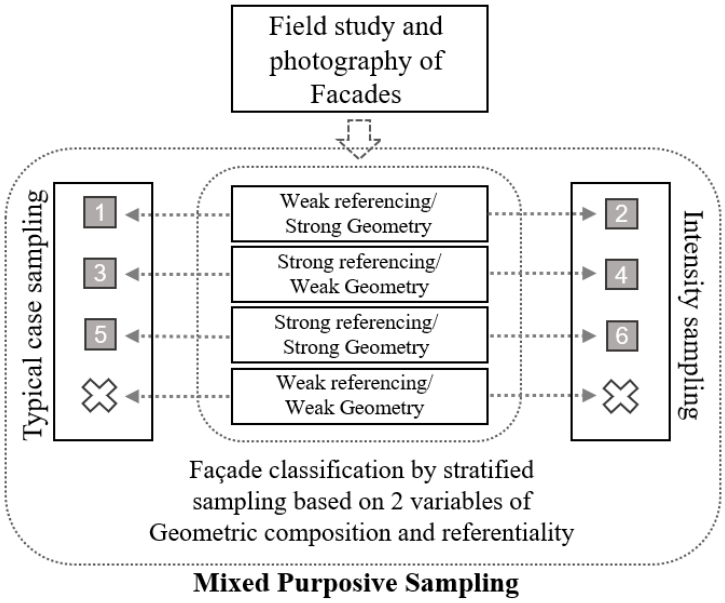


Fig. 6. Stages of Mixed Study Sampling

This method of sampling ensured that the selected facades represented a larger statistical population of facades. During the interview process, the fourth category of the selected facades (weak referentiality/ weak geometric composition) was removed due to the low level of content and physical quality and its failure to establish a semantic relation with users. Finally, six facades were selected for investigation (Table 2).

Table 2: Six Selected Facades using a Mixed Purposive Sampling Method

	Classification of Tehran's Residential Building Facades	Sample Selection	
		Typical Cases Sampling	Intensity Sampling
1	Weak Referentiality/Strong Geometric Composition		
2	Strong Referentiality/Weak Geometric Composition		
3	Strong Referentiality/Strong Geometric Composition		

4.3. Conducting Interviews

The criteria for selecting participants for the qualitative study is the balance between the participants' experience and the study questions, personal characteristics, and the tendency to answer questions (Jalali 2013, 312). The study participants were selected through theoretical sampling from two groups of architects (architecture graduates with at least five years of working experience) and non-architect (non-architecture and non-art graduates) residing in the city of Tehran. According to the theoretical sampling method, samples are selected using step-by-step theory development to gain access to people with adequate knowledge and expertise who also produce novel concepts (Clarke and Frieses 2007).

In the semi-structured interviews, the questions were designed based on general and specific objectives and by reconstructing the users' horizon of expectations. Meanwhile, as variables and the type of open and close-ended questions were specified, the selected participants were interviewed by offering them broad explanations about the study and its objectives. As explained in the theoretical foundations section, the first stage of reconstructing the horizon of expectations concerned the previous understanding of the intended work's style and the user's main and general expectations. When faced with building facades, the participants were asked to determine the building style and to express their general opinion about them. In the second stage of reconstructing the horizon of expectations that concerned the form and themes of previous works and their relationship with the present work and the user's partial expectations, some questions were asked about the details of the facades. In the third stage, which dealt with the distinction between the poetic and daily language and the user's aesthetic receptions, the participants were asked to express their personal emotions, aesthetic perceptions, and the ensuing evocative and specific meanings. Complementary questions were asked after preliminary responses were given to open-ended questions in order to discover the more accurate layers of meanings in the user's mind by applying the basics of the Reception Theory in the process of the interview. Data were also analyzed in conjunction with the interviews, and subsequent participants were asked some new questions. In the theoretical sampling process, theoretical saturation was achieved following the interview with 15 people from each group and the emergence of repetitive data.

5. FINDINGS

After achieving the theoretical saturation and analyzing the responses, the key points of each response were determined, and the text examination led to data being conceptualized in the MAXQDA software using the open coding procedure. According

to the interpretive analysis, also called the "inductive analysis", the researcher goes beyond description to find the models and the relationships between the variables (Karimi and Nasr 2013), interpreting the data by utilizing semantic structures. In the interpretive analysis process, the clear and apparent content of the text was first analyzed and described, while in the second stage, statements about each category were compared to understand the hidden meanings. This stage was followed by the summarization of real meanings in a term or word.

The similarity of some responses to the questions in the interviews is indicative of the impacts of the cultural context, social norms, and subjective cliché on how people think and give meanings in a specific community, which could be seen as an agreement between architects and non-architects. This is also evidenced by Jack Nasar's research (1999). As a result, cultural and semantic commonalities can help designers create works of interest to the public.

The summarization and comparison of the responses in the first stage of reconstructing the user's horizon of expectations revealed that non-architects almost held identical approaches to architects when it came to determining the façade style, though they failed to specify the exact names of the styles. It is noteworthy to note that the names of the façade styles were determined based on the unanimous views of the architects participating in the interviews. Non-architects only differed from architects by distinguishing the post-modern style, classifying the post-modern style facades into the modern style or a mix of modern and traditional categories. This difference is clearly associated with architects' academic education and their familiarity with the names of styles and stylistic criteria. This result underscores Linda's results who suggested that only architects would exactly determine the difference between modern and post-modern buildings (Groat 182, 19). The correlation between the façade style and evaluations about the same façade helps to recognize the façade style as a key symbolic variable. Confirming Nasar's results, it is concluded that determining a façade style would influence the preferences and evaluations of both groups of architects and nonarchitects (Nasar 1994, 382-383). These evaluations occur generally and entail preliminary emotional reactions to the façade.

Concerning the second stage of reconstructing the user's horizon of expectations, non-architects were found to pay less attention to details of the buildings, while only paying more attention if there were some specific elements on the façade. This group of participants was also found to deal more with the general form of the buildings and their materials and colors when responding to detail-related questions. On the contrary, architects used to specially analyze building facades and their geometric proportions. For both groups, the quality of openings, window sizes, and semi-open spaces (the balcony, and terrace, among others) were critical in their evaluations. A comparison of the responses showed that non-architects had paid more attention to the interior of the buildings, linking their evaluations of the facades to the interior, type, and quality of living. In other words, what exists behind the openings, if the interior space takes the sunlight or not, there is a balcony or a terrace in the façade, the privacy, or even the curtains, as well as heat comfort, were more important for them than the apparent features of the facades.

Architects, however, were less focused on the interior space and functionality of the façade, while analyzing the façade geometry and its apparent details more specifically. In essence, non-architects attached more importance to the functionality of the façade and the living quality than the façade image and its geometry. The facades' climatic elements such as canopies and louvers were more attractive to architects.

Non-architects gave more detailed responses to questions about personal emotions and aesthetic evaluations than those related to façade physical features. None of the groups gave appropriate responses to the direct question on façade meanings, or they just considered the façade without a meaning. On the contrary, they indirectly gave responses to other questions by giving meanings and creating various meanings. Architects unanimously considered two Roman-style facades unbeautiful and without identity, labeling them pretentious and luxurious. Meanwhile, non-architects had disagreements over these two facades. The majority of the non-architects considered the Roman façade beautiful, sumptuous and authentic, considering that the facades' bright color, type of materials, and Western style were reasons for their beauty.

Façade No. 1 (the modern style) did not capture the attention of any of the groups from an emotional and an aesthetic point of view and thus failed to establish any relations with the users. Façade No. 2, (the modern style) was evaluated to be beautiful by architects for its successful geometry and configuration, and featuring modern architectural symbols and signs, and by non-architects for its large and different windows. As the two modern facades did not feature any certain signs, no other subjective references were made in the minds of the users. Both facades of the third category captured the attention and acclamation of architects for featuring geometric shapes and configurations and using signs that represented Iranian architecture. Both architects and non-architects believed that both facades were reminiscent of past architecture, representing identity and featuring a sense of home and life, comfort and privacy, and beauty. One would summarily conclude that there was a unanimous agreement between the two groups over reading the post-modern style facades.

5.1. Findings Analysis

In the axial coding procedure, categories were refined

and integrated and were then related together to classify common concepts into major categories based on the comparison of their similarities and differences. To provide a better analysis, a set of concepts and categories was summarized, and from each stage of the interview, three main categories with the highest number of codes were specified in the MAXQDA software (Table 3).

Table 3: Three Main Categories with the Highest Number of Coding in three Stages of Interview (Based on Coding in the MAXQDA Software)

	Categories					
	Stage One	Number of Codes	Stage Two	Number of Codes	Stage Three	Number of Codes
Architects	Styles	36	Geometric Composition	65	Symbols and Signs	42
	Innovativeness	24	Decorations	47	Identity	36
	Concept	12	Climatic Elements	21	Beauty	15
Non-Architects	Economic Value	18	Color and Materials	28	Personal Emotions	51
	Innovativeness	12	Decorations	23	Signs and Symbols	31
	Style	8	Windows	16	Beauty	15

The number of codes in each category could determine the preferences and priorities of architects and non-architects in giving meaning to the facades in the interview process while providing a better comparison between them. The first stage of the interview questions involved stylistic features, which were assigned the highest number of codes by architects. However, non-architects assigned fewer codes to these features, suggesting the importance of façade styles in giving meaning to them by architects. The economic value of the facade and its repetition or novelty have the highest number of codes among non-architects, indicating the importance of economic factors in their judgments and evaluations. Despite architects' reference to the façade concept, non-architects provided no responses related to this as they were unfamiliar with the concept. Using the selective coding procedure, data organized into various components were classified into more limited dimensions. "General features" as the main components with sub-components of "style, innovativeness, concept, and economic value" were specified by architects and non-architects for reading facades' layers of meaning in the first stage of interview questions.

Coding findings of interview data in the second stage revealed that architects prioritized geometric composition over materials and colors in the façade, while non-architects preferred the latter. Non-architects attached less significance to such features as rhythm, symmetry, proportions, balance, and other geometric characteristic than architects. The second category of reading by architects and non-architects of the façade meaning involved façade decorations and their meanings. Architects paid more attention to the facades' climatic elements, while non-architects only focused on windows and their details. "Physical features" with sub-categories of "geometric composition, decorations, colors and materials, and climatic elements" were the main components in the second stage of the interview data.

To answer questions in the third stage of the interview, architects tended to focus on façade symbols and signs. According to the coded data, non-architects prioritized personal emotions about the façade meanings over signs and symbols, as architects discussed the identity, meaning, beauty, and ugliness of the facades more specifically.

The summarization and refinement of the categories in the third stage reveal that the component "content features" is characterized by sub-categories of "symbol and signs, identity, personal emotions, and beauty" (Fig. 7).

In the end, the selective coding and category classifications process at a more abstract level showed that the relationship between the core category (central phenomenon) under the heading "layers of meaning in the façade" and the main components and the relationship between major categories (Causal conditions, Context, Intervening conditions, Action/ Interaction, Strategies and Consequences) were determined. In sum, categories and components are related together to provide a final conceptual model of layers of meaning (Fig. 8).

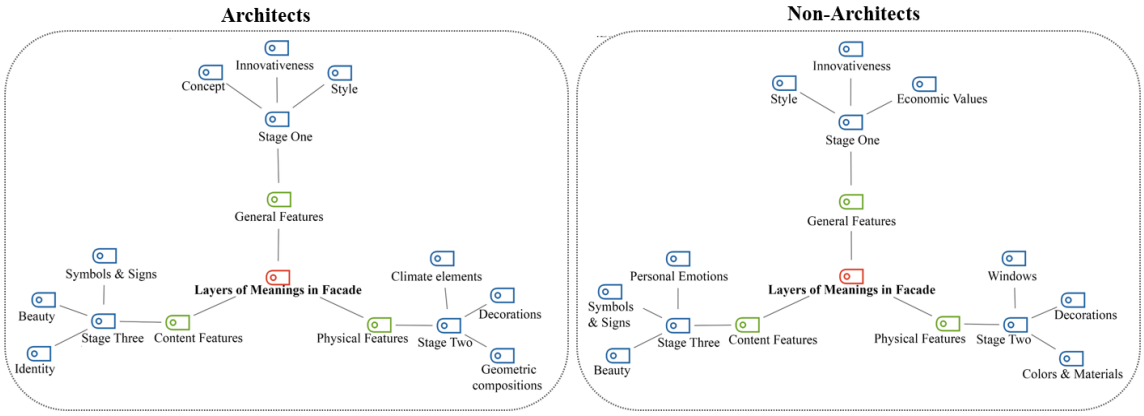


Fig. 7. Relationship between Categories and Components based on Axial and Selective Coding Procedures in the MAXQDA Software

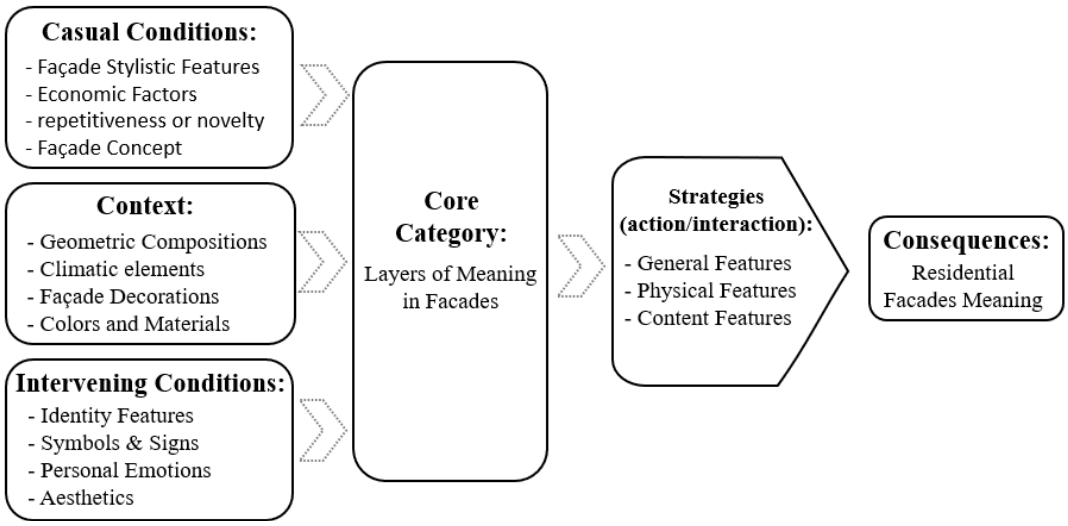


Fig. 8. Conceptual Model of Layers of Meaning in the Facades of Residential Buildings

6. CONCLUSION

The findings of this study could both help present a conceptual model for layers of meaning of residential building facades and develop a novel technique to contribute to the process of meaning reading. This study employed the Grounded Theory to help discover layers of meaning received from selected facades by two groups of architects and non-architects using the principles of Reception Theory in the interview and data collection process. According to the Reception Theory, reading is an aesthetic experience that is experienced as an event by the disappearance of the boundary between subject and object, and the interaction between them. For this, the semi-structured interview technique was used to discover meanings in the interaction between the users and the building facades. The interviews and question design processes were determined based on reconstructing the stages of the horizon of expectations, which offered a multi-faceted perspective to discover deeper layers of meanings while providing researchers with wide-ranging data for interpretive analysis. These data were finally classified and analyzed using the Grounded Theory coding procedure in an organized way. The statistical population of the facades in this study was classified based on two geometric composition and referentiality variables, which helped increase the validity of the study findings.

The difference in opinion between architects and non-architects in reading meaning has been seen in the results of many studies. The layers of meaning received by architects and non-architects from facades are described in detail in this study, and the agreement and disagreements between the two groups are examined through interpretive analysis of interview data. For example, architects considered Roman and classic facades non-beautiful as they

symbolized luxuriousness and pretentiousness, while the majority of non-architects labeling them as beautiful, sumptuous and authentic. For the two groups, post-modern facades were reminiscent of past architecture, symbolizing identity and beauty, and were welcomed by the two groups. By discovering these meanings, the reasons for the differences and similarities in the preferences of the two groups are identified. Understanding the meanings received by the public and the way they were read, beyond general design guidelines, could enable architects design more desired environments. By predicting how people read facades, architects will be able to more consciously establish semantic relations with people through their work, and affect their tastes over time. The findings are given in Table 4 below.

Table 4: Comparison of Similarities and Differences in Readings of Meanings by Architects and Non-Architects

Similarities in Reading Meaning in the Two Groups	Differences in Reading Meaning in the Two Groups
- Agreement over distinguishing modern and classic styles in the two groups - The correlation between evaluations and façade styles - The importance of the quality of openings and window sizes, as well as semi-open spaces (the balcony, terrace, etc.) - The groups' failure to appropriately respond to the façade meaning directly - Agreement between architects and non-architects over modern style facades with different reasons - Positive judgment and maximum agreement between the two groups about post-modern style facades	- Disagreement over distinguishing the post-modern style - Differences in attention to details (priority of geometric composition for architects and priority of materials and colors for non-architects) - The importance of the quality of interior spaces (behind the facades) for non-architects, and concept and physical features for architects - Greater ability of non-architects to response to questions related to personal emotions and aesthetic evaluation than questions related to physical features of the facades (the opposite is true for architects). - Disagreement between the two groups about beauty, identity, and meanings of the Roman style facades

The correlation between other judgments and façade styles revealed that style distinction unconsciously affected the two groups' judgments, especially architects. As stated above, the geometric composition of facades for architects and materials and colors for non-architects have priority in receiving meaning. Also, the facades' economic value was a major component in façade meaning-reading among non-architects. Façade concepts were also very important in architects' readings. Meanwhile, façade repetitiveness or novelty, decorations, climatic elements, symbols and signs, and aesthetics were influential in how the two groups used to give meanings. Non-architects used to engage their personal feelings and emotions more than architects in reading meanings. This finding showed architects' conscious efforts to provide impartial analytical judgment without reference to personal feelings and emotions.

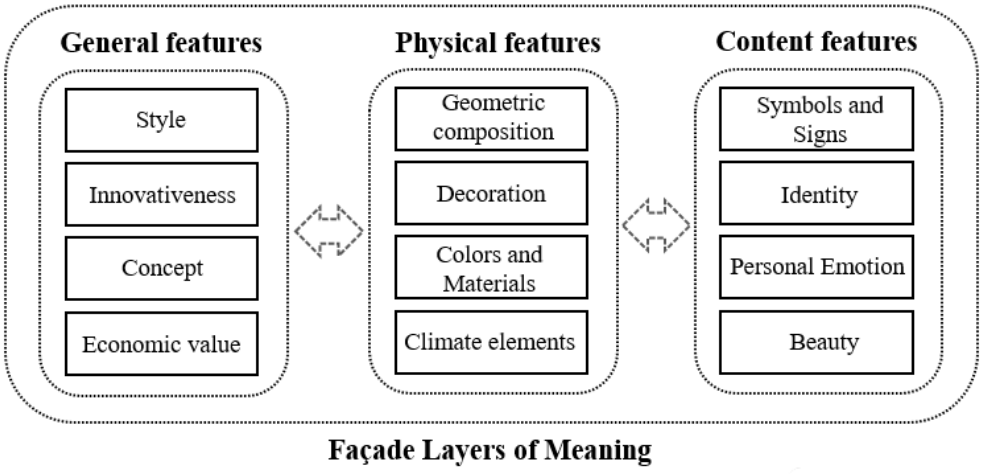


Fig. 9. Layers of Meaning in Architects and Non-Architects' Reading of Facades

In sum, the analysis of the interview findings and the conceptual model extracted from the data coding stages, led to the development of three main components of "general features", "physical features", and "content features" with the sub-categories summarized in Figure 9, which identified form the layers of meaning of the facades in the reading of architects and non-architects. The results

of this research due to its systematic structure and the provision of more and deeper analytical possibilities, can be used in future research for a more accurate reading of facade; for example, by examining the Iranian post-modern styles as well as examining the role of signs and characteristics of referential physical elements in the preferences of the general public.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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The authors commit to observe all the ethical principles of the publication of the scientific work based on the ethical principles of COPE. In case of any violation of the ethical principles, even after the publication of the article, they give the journal the right to delete the article and follow up on the matter.

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The authors state that they have directly participated in the stages of conducting research and writing the article.

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