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Review Paper

The Literature Review on Value Indicators of Urban Housing using the Hedonic Method Analysis †

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Abstract
The hedonic valuation method has been considered in various fields by researchers in order to estimate the value of a commodity or the demand for exploitation of a commodity for many years. Besides, the hedonic method has been widely used to identify 'value' indicators in the housing market. The need for indicators as the key tool for housing planning is related to the need to prioritize planning. Indicators are also critical to understanding housing characteristics. This article tries to develop a "conceptual model" of value by meta-analyzing the existing theoretical literature regarding the valuing indicators in the hedonic model, which has been done by the meta-analysis method, uses MAXQDA software and open and axial coding to analyze the texts in order to compile and classify the features that explain the value of housing. The research findings, which are taken from 335 highly cited articles between 2009 and 2019, show that despite the long period of application and theoretical development of the model, there is no theoretical consensus on the explanatory indicators of housing value. So, 7 main categories can be identified in the form of 350 concepts and 5883 codes (including frequency), which can show the range of housing value dimensions, in addition to summarizing the issue. Also, the share of basic structural-physical and peripheral categories, with 53.5 and 25.5 percent, respectively, has the most application in the hedonic housing valuation model. In the two-mentioned categories, the share of variables affecting the residential unit, the building of the property, and access to services and land uses with relative shares of 23.6, 19.2, and 16.5%, is more than other variables. The results show that while the concepts of many explanatory indicators of value are the same, a suitable range of explanatory indicators of housing value can be used in the hedonic model according to the goals and the target community, and this can lead to the formation of indigenous and specific values of a society.

Keywords: *The concept of value, Hedonic method, Housing value, Residential unit.*

1. INTRODUCTION

Housing is not a homogeneous commodity, unlike many others. If two housing units with very similar quality and quantity characteristics, located in two different places in the same city, offer different housing services, so their prices in the housing market will be completely different. Why is an apartment in a

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certain area of the city, next to the main street, more expensive than a similar apartment next to a side street?

The answer lies in the heterogeneity of housing goods. Are the two mentioned apartments similar in terms of the quality of residential services they provide, although they are the same in terms of area? Studies on housing or housing demand focus on two main approaches. A method assumes housing products or services as a homogeneous commodity and tries to estimate demand and price elasticity (homogenization method). The second method considers housing goods and services as a combination and tries to estimate the effect of housing characteristics on its price (the hedonic method). Triplett believes that the hedonic method is a useful alternative to traditional and common approaches to measuring the value of housing when faced with quality changes in housing units (Triplett, 1986).

The present study poses two main questions: 1) what are the explanatory indicators of housing value? And what conceptual model of value in housing can be presented? The main purpose of the research is to explain the valuing indicators of housing. Since the hedonic housing valuing method deals directly with the explanatory features of value and has been going on for about a century, in this study, the meta-analysis of the theoretical literature on the more citation articles have been considered, which have used the hedonic method directly. Thus, identifying valid articles from 2009 to 2019, screening articles, and final selection of articles have used the hedonic method form the first stage of the study. The classification of valuation indicators and the identification of key concepts, categories and axes, and the explanation of the model of urban housing valuation indicators show the final process of this paper.

2. RESEARCH BACKGROUND

A review of previous research shows that there are articles in the field of reviewing the theoretical literature of the hedonic model of housing. Páez (2009), in his research 'Recent Research in Spatial Real Estate Hedonic Analysis', by reviewing 5 main articles, deals with the process and trend of hedonic studies and emphasizes the application of spatial economics in the study of housing value and identification of the features. He introduced the experimental application of the model as well as its performance in general in selected articles (Páez, 2009). Herath and Maier (2010) analyzed the theoretical literature on the method of housing hedonic valuation in an article and presented two main diagrams as research findings including, first, the type of housing studies that have used the hedonic method, and second, the type of environmental characteristics used in the hedonic method. of their 471 reviewed articles, only 3 were review articles and about 321 were experimental articles. Also, out of 134 features related to the neighborhood unit, 14 social factors,
56 environmental factors, 33 items related to infrastructure facilities, and the remaining 31 items related to visibility, open space, and proximity to the city have been mentioned and classified (Herath & Maier, 2010). Abidoye and Chan (2017) in a study entitled 'critical review of hedonic pricing model application in property price appraisal: A case of Nigeria' concluded that in order to achieve operational and sustainable housing in Nigeria, the gap between theoretical and experimental studies must be filled, because most studies have been done by non-housing experts. Although the first hedonic study was conducted in Nigeria in 1986, there is a large fluctuation in the number of such annual articles. However, there has been a significant amount of focus since 2010, which emphasizes specific areas of Nigeria more, and most of these studies are academic research (Abidoye & Chan, 2017). Musa, Zahari, and Yusoff (2009) reviewed the theoretical literature on the impact of housing components on the value of housing units in a study. They considered the three categories of characteristics related to the location of the settlement, the characteristics of the neighborhood unit, and the structural characteristics to have the greatest impact on the value of housing. Also, antiquity, design quality, room size, number of rooms, bedrooms, toilets and bathrooms, quality of construction and materials, protection, entrance door, view, plan, and available space have been presented as the main indicators of the structural sector (Musa et al., 2009). Despite the above-mentioned articles, any theoretical study and review of the explanatory features of housing value, in a comprehensive manner so as not to focus on a specific dimension of housing value, has not been done between 2009 and 2019. The present study tries to consider an appropriate classification of housing value-based characteristics according to the application of the hedonic model, emphasizing the above range, and also consider newer approaches in the studies of hedonic housing and selected indicators of researchers. In this regard, half of the 335 selected articles are based on more recent studies (2017-2019).

3. REVIEW OF THE LITERATURE

An Analysis of the Hedonic Model Application: From the Beginning to the Application of the Model in Housing Market Studies:

Past research has often classified products based on their associated purchase motives: 1) utilitarian motive oriented by functional or practical needs, and 2) hedonic motive oriented by sensual pleasure, fun, or fantasies (Choi et al., 2020). The hedonic price model estimates the economic value of goods or services by isolating the effects of different factors. And it is often used to measure the non-market components of housing (Liu et al., 2020). Although there is no theoretical consensus on the history of the use of the hedonic model for the first time in relation to property valuation, Abidoye and Chan (2017) claim that it can be attributed to the early 1920s; and they introduce Haas (1922) as the first study to use the hedonic model in property valuation research. Haas used the model to assess agricultural land in Minnesota (USA). However, they refer more to Court (1939) in the studies, who used the hedonic valuation method for car pricing, as a pioneering researcher that contributes to the theoretical development of the model; especially where he points out that car demand can be explained by many variables (Abidoye & Chan, 2017). But a review of the research background shows that the use of the hedonic model in the housing market and its application occurred later. In this regard, the US Bureau of Economic Analysis first adopted the hedonic method in 1963, exactly to calculate the value-adjusted indicator of new housing, in order to consider a slow but steady increase in the quality that occurs in construction (Bover & Velilla, 2002). Finally, Griliches (1964 and 1971), Rosen (1974), Berndt, Griliches, and Rappaport (1993) developed the theory. The model was also proposed in the theoretical works of Lancaster (1966) and Rosen. The main assumption of the hedonic model of housing is that the exchanged price of housing as a heterogeneous commodity can be considered as a sign of preference to acquire a set of features (Mohammadzadeh et al., 2012; Xiao, 2017).

In fact, the theoretical framework of the hedonic method has been established in research by Ridker, and Henning, and Rosen. Croc (2005, 2007) have also greatly contributed to the application of the model in housing studies. The hedonic price model is interesting because its results are easy to interpret and can almost always be consistent with observations (Kuethe et al., 2008). The hedonic model's enduring popularity is easy to understand. It begins with an intuitive premise that is both economically plausible and empirically tractable. The model envisions buyers choosing properties based on housing, attributes (e.g., indoor space, bedrooms, bathrooms) and location-specific amenities (e.g., air quality, park proximity, education, flood risk) (Bishop et al., 2020).

The Necessity of Considering Values in Housing Planning and the Relationship between Them:

Housing plays a vital role in the city, so that the design of housing, both materially and spiritually, reflects the way of thinking and culture and the type of living conditions in the area. Urban planning and architecture in order to manifest their values in the body of the city seeks to identify values and characters that can affect the construction of housing in the city. Architecture and urban planning has a mission to preserve the ancient cultural values within it and accordingly be considered an identifying element in the cultural structure, as the homogeneity of culture and architecture is observed in the architectural works of the world (Habibi, 2009). The hasty acceptance of modernity, ignorance of its roots and methods, and the rejection of traditional culture and the entry of industry and technology into the country, gradually changed the style of architecture and urban planning; and modern architecture and urban planning became quite imitative without exception. It does not seem to be in line with the values that govern our society.

Rarely today do we build housing just for shelter, but for efforts to create a living environment. Various changes and factors have created this context, including demographic change, housing market fluctuations, employment conditions, housing patterns, consumerism, and individual values. These developments have redefined how new housing products are planned, designed, and marketed, and have increasingly based the decision to buy a new home primarily on considerations of lifestyle and values. In other words, the demands of buyers today are markedly different from those before World War II. At that time, housing builders were selling square meters; while today they emphasize the available facilities and equipment. Style and emphasis on sensory values have significantly overcome the demands of traditional constructions (Wentling, 2014). Therefore, the necessity to consider values in the housing planning process is essential to preserve the cultural and indigenous values of each region. At the same time, the relationship between values and housing planning can be identified by the same necessity factor mentioned above. Identifying values actually shows us indicators to guide housing planning. Therefore, we need to localize housing planning indicators by knowing the values of a society.

4. MATERIALS AND METHODS

This research has been done by using a qualitative method to collect the required data by searching in authentic online research databases and seeks to identify the indicators that explain the value of housing. Also, the valuing features of the housing sector are identified from the content of the selected articles and texts and then categorized using MAXQDA software.

Research Methodology and Data Collection: The present study was conducted with the aim of integrated analysis of indicators explaining the concept of 'value' of urban housing in the application of the hedonic housing model, using the meta-analysis method. One of the most important dimensions of meta-analysis is related to the selection of studies that are included in the analysis. The selection criteria should be broad enough to allow numerous studies to be considered, yet systematic enough to be reproducible (Cottineau, 2017). Meta-analysis is the art of combining research and analysis and is defined as a combination of independent studies results in order to consolidate their findings (Yazdanpanah et al., 2019). Pigot defines meta-analysis as quantitative statistical analysis of a set of results from individual studies. Today, meta-analysis is considered as a systematic review that has a specific and defined research question and uses accurate and systematic methods to identify, select, and evaluate relevant research and collect and analyze data from the studies included in this review (Yazdanpanah et al., 2019).

In this study, which is based on reviewing and analyzing highly cited articles by searching the Google Scholar online database, conducted between 2009 and 2019, 335 studies have been included in the analysis process. Using the search facilities in articles, books, reports, and other documents available in the Google Scholar database, the main keywords searched were "Hedonic Valuation Model" and "Housing". In the search process, half of the articles were related to the years 2009 to 2017 (177 articles identified), and the other half were related to the years 2017 to 2019; In this way, the share of newer studies in evaluation and analysis will increase. The total number of articles in the database is 402. From this number, 67 articles have been deleted in different stages according to the overlap of some articles, invalidity, lack of access to the main text of the article, etc. (Figure 1). Based on the search results, 335 articles were finally selected according to the number of citations to the work, as well as the publication year. From 335 articles reviewed in this study, experimental articles have been more selected, in order to better cover the purpose and a wider range of housing indicators. But there are also ten highly cited theoretical articles (about two percent of the total volume of articles) in the volume of reviewed articles. Regarding the research topic, among the articles, Selim (2009) and Sander et al. (2010) had the most citations (262 and 242, respectively).

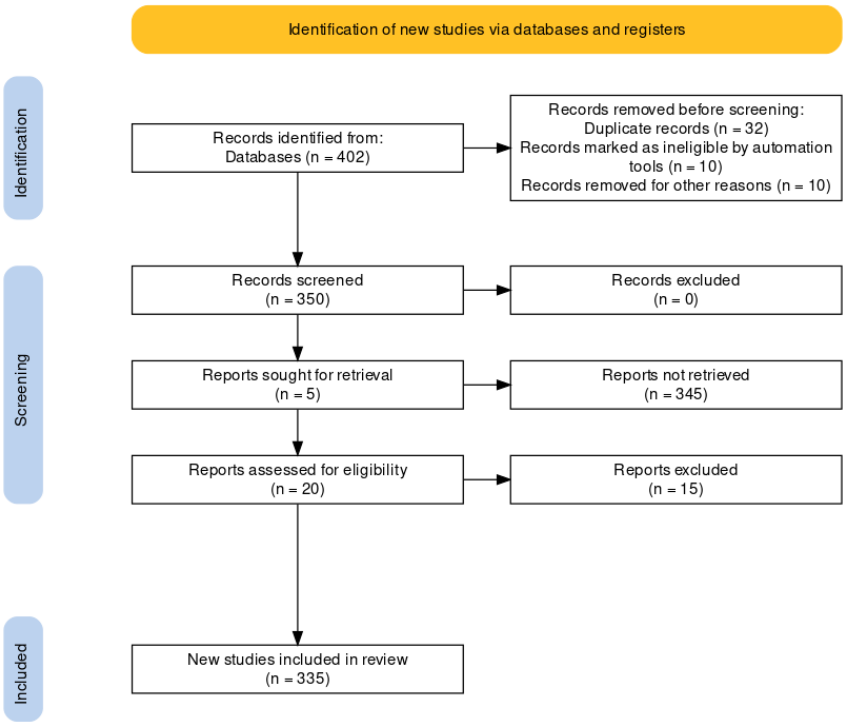

Fig 1. PRISMA Flow Diagram (the Detailed Process of the Systematic Review)

Data Analysis: In the present study, the information of 335 identified articles was analyzed, using MAXQDA software version 10. This means that according to the possibilities of open and pivotal coding in this software, indicators explaining the value of housing used by various researchers were first identified from the content of articles (by the open coding method). Then, in the next step (i.e. axial coding), the hidden axial concepts were identified due to the commonalities of the codes, and the main categories in which the concepts can be explained were compiled. In this regard, 5883 codes have been identified in the present study, which were categorized in the form of 17 hidden concepts and 7 main categories. In order to avoid bias in the systematic process of reviewing articles, we tried to consider articles randomly and based on the most citations. Also, we tried to consider a wider range of articles in the research process. The final classification of indicators, in order to avoid bias, was matched with the case results of the articles, and an attempt was made to extract a proper overlap and consensus on the issue.

The summary of the method of coding and presentation of indicators was such that the text of the selected articles has been initially reviewed by the authors individually and collectively. Finally, the codes that were agreed upon were selected. The texts of the article were read many times so that no indication was hidden. Some codes have been explicitly presented and used by various researchers. But some were presented with different expressions. Such indicators have been agreed upon under a standard name. Finally, by expanding the number of articles related to the subject of the hedonic method in the field of housing studies, the coding was exactly in accordance with the indicators, and a comprehensive list of value indicators of urban housing was compiled.

5. RESULTS AND DISCUSSIONS

Leading researchers in discussing the application of the hedonic valuation model in housing studies have used a variety of indicators according to the subject of their research. These studies have been analyzed and monitored in order to show the value of these researches. After entering the articles in the MAXQD software environment, the values indicators were coded. Finally, 5883 codes were found in the software environment (Figure 2), which according to the theoretical literature, as well as the opinion of related experts towards homogeneous and similar codes, the hidden concepts (from the combination of several codes) were identified. In addition, related and homogeneous concepts were explained and classified in the form of 7 central categories. The result of this classification is presented in Table 1.

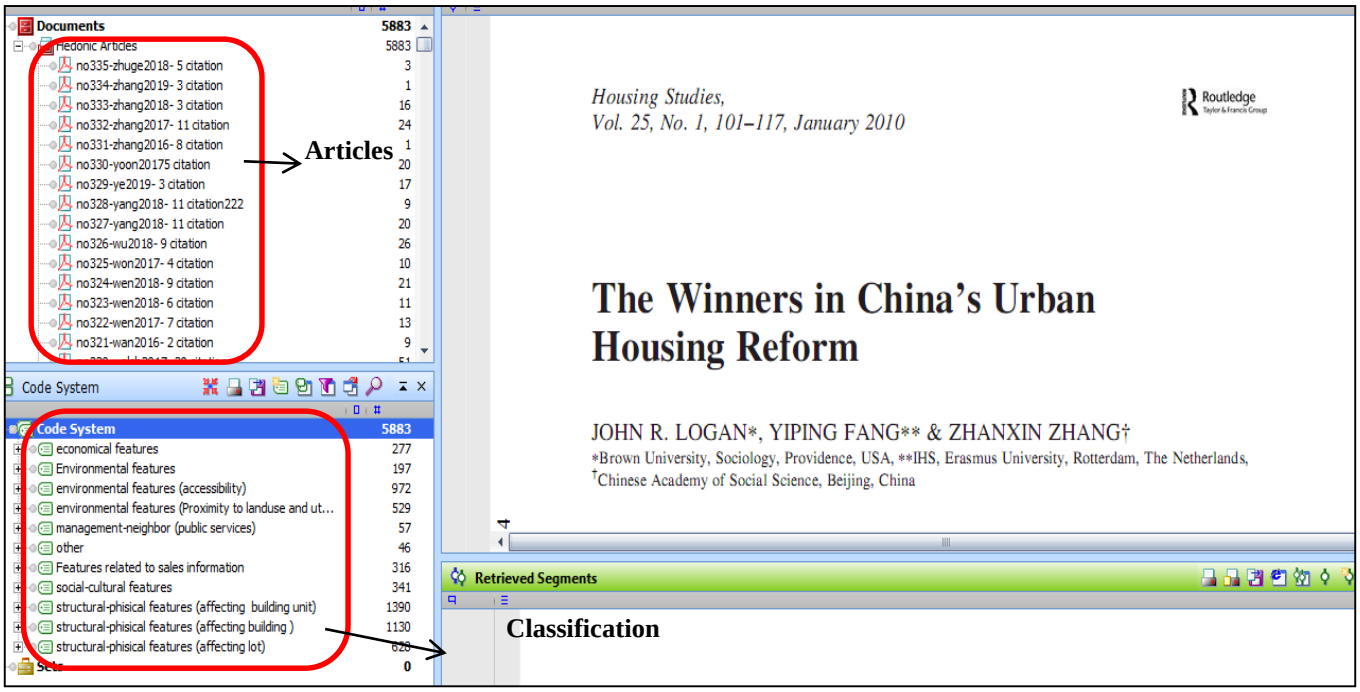

Fig 2. Data Entry and Coding of Articles in MAXQDA Software

Table 1. Summary of Collected Information from the Experiences of using the Hedonic Model in Housing

Valuation using MAXQDA Software

Axial category		Total number of concepts	Number of codes including frequency			Number of reviewed articles
			Number	percentage		
Structural-physical features	Affecting the building	38	1130	19.2	53.5	335
	Affecting the residential unit	53	1390	23.6		
	Affecting the property land	37	628	10.7		
Socio-cultural features		24	341	5.8		
Economic features		25	277	4.7		
Environmental features		27	197	3.3		
Peripheral features	Access to land uses and services	21	972	16.5	25.5	
	Adjacent to urban land uses and services	39	529	9.0		
Features related to sales information		14	316	5.4		
Features related to urban management (providing urban services)		26	57	1.0		
Other non-housing variables in total surveys		46	46	0.8		
total		350	5883	100.0		

Based on the above table, the value-expressing features can be classified into the following 7 central categories according to the research:

- Structural-physical features affecting the building, the building unit, and the property land,
- Socio-cultural features,
- Economic features,
- Environmental features,
- Peripheral features: access to land uses and services, neighborhood, and proximity to urban land uses and services,
- Features related to sales information, and
- Features related to urban management (providing urban services).

In this regard, 350 hidden concepts were identified, each of which includes a variety of codes. The highest frequency of use was related to 'structural and physical features' with a relative share of 53.5%, according to the studies and experiments analyzed. Peripheral characteristics are in the next category, with a share of 25.5%. Also, the categories of 'physical structural features affecting the residential unit' and then 'physical structural features affecting the building', and 'environmental features including access to land uses and services' with relative shares of 23.6, 19.2, and 16.5% had the most applications among the identified categories in the hedonic housing model.

Explaining the Conceptual Model of Housing Value: A meta-analysis of the extracted and selected articles in the MAXQDA software shows that seven main categories affecting the value of urban housing can be explained. Structural, physical, economic, socio-cultural, peripheral, environmental, sales information, and urban management features are the seven main categories. Each of the identified categories has central subcategories (hidden concepts) that, in the form of each of the hidden concepts, the codes are included that have been used by various researchers in hedonic housing studies.

The main categories and concepts are categorized based on the most common and homogeneous indicators. Although many codes can be exemplified in the form of each concept, Figure 3 and Table 2 tries to show the conceptual model of the value of urban housing in a schematic and general way. Effective characteristics on property, building and residential unit (in the form of structural-physical category), incidental expenses, housing loan, income and job of the head of the household (in the form of economic category), demographic indicators, crime and delinquency, education and others (such as rates Urbanization, marital status, etc.) (In the form of socio-cultural categories), access to services and uses and proximity to them (in the form of peripheral categories), pollution, climate, natural crises and others (such as green cover, thermal islands, etc.) (in the form of environmental category), type of purchase and sales details (in the form of sales information category) and programs, plans and others (such as deprivation index, cleanliness, etc.) (in the category of urban management) include the most important categories and concepts of each.

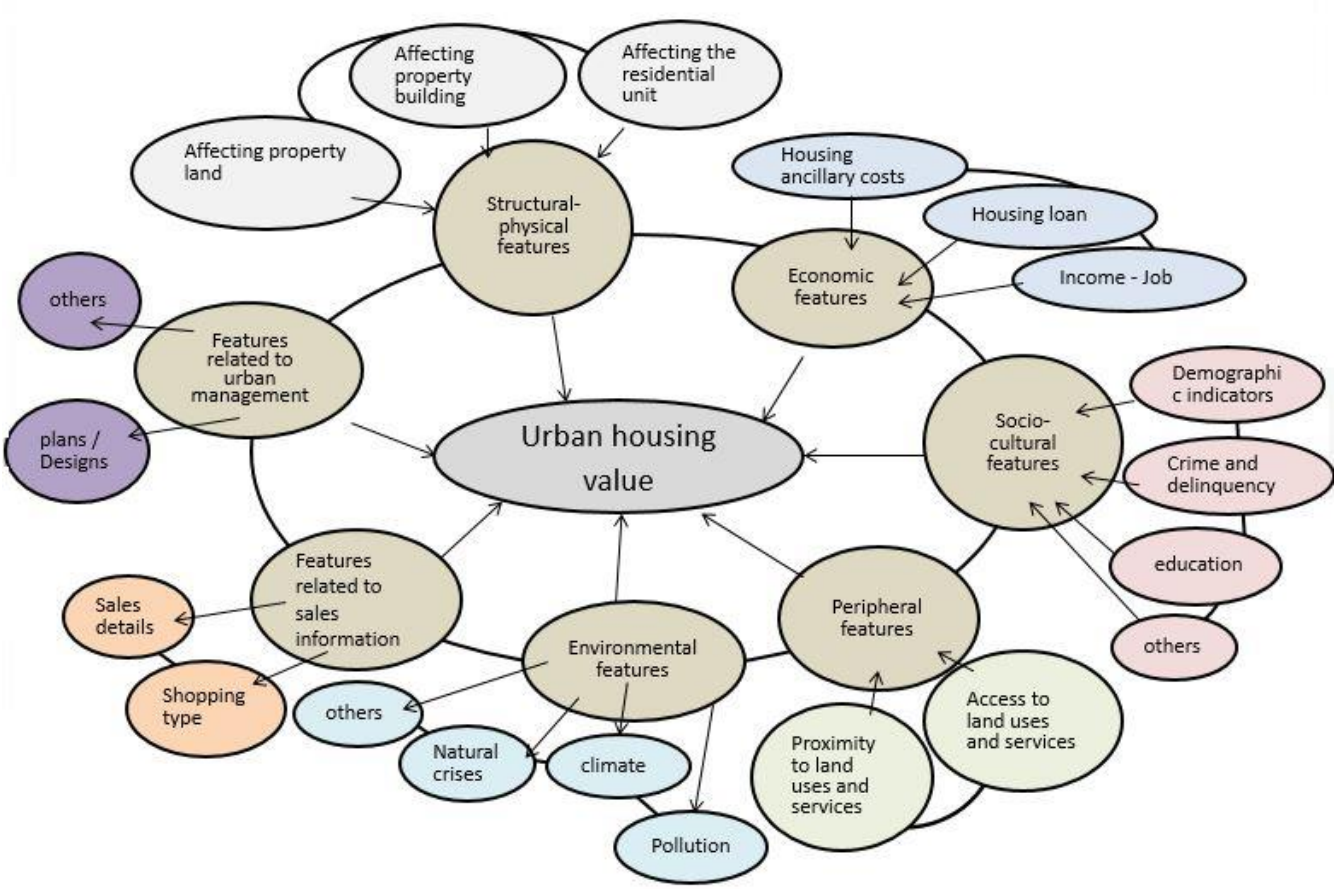

Fig 3. The Explanatory Model of the Housing Value Concept

Table 2. Practically Explained Indicators in the Field of Urban Housing Studies

Main category	Main concept	indicator
Structural-physical features	Affecting the residential unit	Area of the residential unit, location, date, ownership, home security, number of rooms, bathrooms, toilets, terraces and balconies, internal installations of the unit, heating system, sound insulation, aristocracy and shading, view from the unit to the surroundings and
	Affecting property building	Floor area – yard area, number of units, number of floors, permitted land use, type of building, parking, quality of buildings, façade condition, equipment for the elderly, disabled and children, condition of building facilities, elevator, sauna, Jacuzzi, visibility and ...
	Affecting the property land	Plot area, geographical location, proximity to the highway, location, rate of accidents and crimes in the immediate area, situation in relation to contaminated areas, soil type, construction rules and boundaries, adjacent roads, land use, topography and ...
Economic features	Housing ancillary costs	Travel costs, construction costs, service costs, fuel and energy costs, etc.
	Housing loan	Eligible discount rate, repayment credit, loan-to-value ratio, interest rate, …
	Income - Job	Monthly income, job of household head and...
Socio-cultural features	Demographic indicators	Population, age, indigenous population, percentage of ethnic groups, number of households
	Crime and delinquency	Crime rate, percentage of violent crimes
	education	Literacy rate (by education category), students' educational scores, illiteracy rate, …
	others	Urbanization rates, marital status, customs, Gated neighborhood, relationship with neighbor, neighborhood with family, social capital

Main category	Main concept	indicator
Peripheral features	Access to land uses and services	Access to health, medical, educational, commercial, administrative centers, city center, employment centers, catering services, cultural, religious, recreational, sports services, public transportation, main communication routes, banks and ATMs, post office, etc.
	Proximity to land uses and services	Adjacent to urban land uses and facilities, to water resources, industrial land use, hospitals, railways, airports, canals and canals, prisons, meadows, landfills, pastures, lakes, rivers, …
Environmental features	Pollution	Water pollution, air pollution, noise pollution and ...
	climate	Rainfall, temperature, wind ...
	Natural crises	Earthquakes, floods and ...
	others	Green cover (number of trees), thermal islands, soil, environmental awareness and ...
Features related to sales information	Shopping type	First-hand purchase, buyer type
	Sales details	Type of sales advertisement, seller information, condition of the house at the time of sale, type of contract, …
Features related to urban management	plans/ Designs	Planned growth area of the city, having a plan for the development of green space and ...
	others	Providing government social services, deprivation index, cleanliness, local power, aesthetics, …

Different researchers with different interpretations, but in the form of the main categories mentioned in the above conceptual model, have tried to estimate the value of urban housing. Structural-physical features with a greater share in explaining the value of urban housing have been predominantly considered in all reviewed studies. There are three main classes of concepts related to this category, among which the variables related to the housing unit have a significant share. The indicators are described with the greatest frequency to provide some of the most important indicators considered by the reviewed researchers, in the form of each of the central categories. In indicators affecting property land, 'land location' has been used under various headings such as neighborhood, region, and location in the city, with a frequency of 302, by many researchers such as (Cerin et al., 2014; Daneshvary et al., 2011; Czembrowski & Kronenberg, 2016; and Deng et al., 2012). The 'total land area' with a frequency of 99 is in the next category (for example, see (Yoon, 2017; Walsh et al., 2017; Votsis, 2017). Land use with a frequency of 63 has also been one of the most widely used indicators in the under-study category (see, for example: (Schläpfer et al., 2015; Shen & Karimi, 2017). In the structural-physical category related to property building, the indicator of 'building age' with a frequency of 364 has been mostly used (Wen et al., 2018; Ye et al., 2019; M. Zhang & Zhao, 2018). The indicator of 'type of building' (including villas, rows, apartments, etc.) is also in the next priority with a frequency of 195 (Beimer & Maennig, 2017; Belcher & Chisholm, 2018; Casado et al., 2017). In the structural-physical category related to the housing unit, the variable 'area of the housing unit' with 238 frequencies has been used (Seo et al., 2018; Walsh et al., 2017; Yang et al., 2018; L. Zhang & Yi, 2017). The next most commonly used variable is 'the number of bedrooms' with a frequency of 154 (Tian et al., 2017; Wan et al., 2017; Yang et al., 2019). 'The number of baths' with 147 cases with a slight difference from the previous variable, has been the next priority of researchers (Casado et al., 2017; Hussain et al., 2019; Saphores & Li, 2012). In the economic category, the variable 'household head income' with a frequency of 90, is at the top of the researchers' attention (Acolin & Green, 2017; Roebeling et al., 2016; Tajani et al., 2017). In the socio-cultural category, the variable 'population/density' with a frequency of 87 items is the most widely used indicator (Poudyal et al., 2009; Seo et al., 2018; Won & Lee, 2018). In the same category, the variable of, the existence of ethnic groups' is among the explanatory variables of housing value in the studies of scholars such as Nau and Bishai (2018), Wu and Sharma (2012). In the category of environmental features and in the concept of 'access to land uses and services', the most widely used variable in the first category, is 'access to educational centers' with a frequency of 172 (Abbott & Klaiber, 2011; Opoku & Abdul-Muhmin, 2010; Ye et al., 2019). The variable 'access to public transportation centers' with a frequency of 151 is in the next rank. This variable is sometimes used in general and sometimes in connection with a specific type of public transportation (e.g. access to buses, subways, etc.) (Sun et al., 2017; Yusuf &

Resosudarmo, 2009). In the same category and in the form of the central concept of 'neighborhood and proximity to land uses', the variable 'proximity to green land use (green space)' and with similar or other titles (for example: proximity to the park at different scales) with frequency 168 cases have been the priority of researchers (Fernandez & Bucaram, 2019; Hu et al., 2019). 'Adjacent to rivers, streams, etc.' has also been identified with 68 common cases (for example, see (Seo et al., 2018; Yoon, 2017). In the environmental category, the 'sound' indicator in the form of different examples (such as noise pollution, noise from highways, railways, airports, etc.) with a frequency of 28 items has been a priority in the use of the hedonic model (d'Acci, 2019; Trojanek et al., 2017). The 'pollution' indicator, with a frequency of 27 cases, is in the next class of environmental category (Ayan & Erkin, 2014; Sullivan, 2017). In the category of sales information, the indicator of 'details of sales time' with a frequency of 187 is given priority. Some of the selected codes in this sense are the sales season, the number of days after the sale, the time between the announcement of the sale and sale of the property, and the year of sale (Cavailhès et al., 2009; Trojanek & Gluszak, 2018). In the last category related to the characteristics of urban management, the indicator of 'local power characteristics' with a frequency of 14 has been identified (Ball, 2011).

6. CONCLUSION

In this research, an attempt was made to study and deepen one of the important aspects of urban housing planning. So, the concept of 'value' in relation to housing, which directly affects housing planning, was examined by meta-analysis. The process, which began with a review of the theoretical foundations and research background, continued with the analysis of experiences of world-renowned citations and eventually led to the development of a conceptual model of value indicators in the central issue of housing. The hedonic model of housing, which has been used for a long time and about a century ago in estimating value in various scientific topics and in the subject of housing, is perhaps one of the most comprehensive methods of an indirect study of the housing value. Since housing is a heterogeneous commodity that not all its qualities are market valued in the process of supply and demand, it is necessary to have methods to measure the non-market benefits of housing. The hedonic model is one of the models in this field. The present meta-analysis, in line with the above showed that the explanatory indicators of the value of urban housing are related to seven main categories that have broad topics at the heart of each category under the concept. The existence of 350 hidden concepts and 5883 identified codes (taking into account the frequency) in the reviewed studies, shows that despite the long time that has passed since the emergence of the hedonic model, there is no unified theoretical consensus on the indicators of urban housing value. It can be said that the researchers have included indicators in estimating the value of urban housing in the hedonic model according to the purpose; Where the goal has been to estimate social values, the share of social variables has become stronger, and while the goal has been to estimate the effects of proximity to public transportation hubs, proximity to public transportation has gained a greater share of variables. Although the output of the hedonic model does not have the same effect as the indicators that explain the value of urban housing, researchers have entered similar indicators into the model according to the purpose.

So, in the explanatory model of value, various dimensions, indicators, and components are presented that should be considered in the housing planning process to be able to fulfill value housing planning in the process of urban housing development management as a new and comprehensive approach. The end result of this process is an approach that considers housing planning in accordance with the needs and demands of the target community and the values that govern their community, and presents the development of urban housing beyond the common plans and connected to a comprehensive, multifaceted, interdisciplinary and interactive value-based approach. Urban housing planning is not just about the structural-physical features of the building and it should be seen with a set of economic, socio-cultural, environmental, and environmental and other indicators.

In conclusion, it can be argued that since the hedonic model measures non-market interests and does it indirectly, it seems that the preferences of the individuals shaping this value cause the inherent desire of the individuals and their preference for maximizing their own interests and somehow seeking the maximum benefit from the material benefits of life, made the role of economic indicators and components in the model significant. The results of the model often double the share of structural-physical variables such as 'area' and 'floor area', which can also be considered as 'financial' in the housing market (for example, the specific price per square meter of housing). However, none of the ancillary housing services are free, and more detailed studies of how they affect housing value can be modeled. The present study pays more attention to the valuing indicators of housing that have been considered in hedonic studies, but other studies with an appropriate scope can be done around significant indicators as the output of the hedonic model. Limitations of this review

study are gaps in literature searching that may lead to the omission of relevant research and errors in the translation of data from the primary literature. However, as the scope of the articles increased, these limitations were largely removed, and articles whose original language was non-English were also tried to find their original English version.

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