



# Providing a Livable Housing Development Model for Increasing Urban Livability (Case Study of Tehran)

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**Abstract.** In the century 21 with the rapid rise of urbanization and the increase in urban populations its necessary to supplying and increasing good quality and conditions of the living in housing. One of the new ideas is urban planning for better housing and affordable transport access, with an emphasis on urban livability. Urban livability is a modern approach to urban planning that can respond to many urban problems. Any type of travel in the city is transferred from one housing to another land use and will end in housing. For that matter in the city's housing and neighborhoods and access to activities and housing must be combined with the indicators of livability, so in this article is present to create the best pattern or method of access to housing for all male groups, with emphasis on three elements of housing and transportation and urban livability. The method of this research descriptive-survey. Using previous studies and researches, a paired matrix questionnaire was designed that after confirming the validity of several experts, 50 questionnaires were sent to experts and experts, and 43 questionnaires were collected and after calculating the adaptive ratio, the analysis was carried out. Data were obtained. Library information (books, articles, archives, etc.) and field (distribution of questionnaires) have been used for data collection. Research results from the questionnaire indicate that most respondents have affordable housing in transport access and communication and urban transport network as the most important alternative to improving urban transport as well as housing livability. Urban transport, urban livability, and urban health, on the other hand, in the next step, have modern transportation, quality, and affordable transport and access to services with very little difference. The results indicate that they are in the third and fourth positions, and the rest in the next positions, they are effective in improving housing and urban transport livability.

**Keywords:** Livable housing · Transportation livable · Livable city · Tehran

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## 1 Introduction

Previously, most people lived in rural areas and only 30% lived in urban areas. Since 2014, More than 50% of the world's population is urbanized and is increasing day by day [21, 53]. According to statistics in 2017, more than 54% of the world's population is urban [53]. Increasing urban population and increasing demand for housing and urban services have caused problems in cities (Tehran's case) (including: lack of adequate land and housing, inappropriate housing, and access to appropriate transportation and environmental problems that are mutually exclusive Related) that will increase sustainable development attention. livability is one of the concepts of sustainable development that addresses social, economic, environmental, and also satisfaction. The definitions offered are livability, all referring to the quality of space, location, or city [8, 36, 48, 60] Or to create a livable place to live [49, 57]. The rise in the cost of buying or renting housing in cities has also been a problem for low-income groups (and female households) [22, 33, 59]. The country Iran in the form of five-year plans before the revolution and six developments after the revolution sought to resolve the issue of housing. Therefore, the challenges facing housing in Iran, including housing instability, lack of compliance with demand and housing patterns, the growing trend of informal settlements, inefficient and cross-sectoral policies, and project-driven housing policy, existence The widespread texture, the ineffectiveness of the manufacturing system in the construction industry, the inequality and the imbalance in the production and distribution of housing, and in recent years have changed the "deprivation" pattern into "bad housing" [7]. In recent years, issues such as improving quality of life through socio-economic justice [41, 58] and minimizing environmental problem [32] have been the most emphases of social and environmental researchers for increasing the livability and sustainability of cities in developing countries (for example, India can be mentioned: [16, 34, 41]. In this paper, I will discuss housing livability for the first time. Most previous studies in the field of housing have focused on physical discussion and economic and profit debate. The innovation of this article is a combination of physical, environmental and social and economic contexts in Iran and in the city Tehran, and paying attention to housing in terms of livability increases the access of all categories of society to adequate housing and all activities and high quality of life and good governance.

## 2 Literature Reviews

Livability is a concept that can have many meanings, it covers various aspects of urban quality of life, housing, transportation, the physical environment, and the socio-economic, biological, security, cultural and educational environment, and leisure facilities, as other scholars point to these, refer to: [4, 12, 26, 27, 51]. Various researchers have defined the Livability of their different viewing angles. Lynch emphasizes the five dimensions of urban Livability, which are: vitality, sense, fit, access and control [28]. Douglas has five essential dimensions' livability i.e. direct investment in talent, access to work, safe environment and good governance [55]. Urbanization has positive and negative effects on the quality and quantity of citizens'

lives. One of the most important parts of the city is the housing and transportation network. Which is linked to other sectors such as employment, access to various urban activities. the lack of access to housing livable and sustainable and affordable, especially for low-income and financially vulnerable groups, as well as for women without a job or income family head. In many cities, housing is not only affordable for low income groups and financially disadvantaged families and women, but also unlivability. Housing and living environments are important in achieving urban livability and sustainability. Because it has a significant impact on economic and social activities, and thus affects all issues relating to the urban environment and society. Previous research on housing and transportation has not paid attention to urban livability, and has focused on housing on the basis of economic considerations. In this paper, I will discuss housing livability and transportation for the first time.

## 2.1 Urban Livability Aspect

Urban livability is a multi-dimensional concept that enhances urban housing and transport sustainability. Its multidimensional nature makes it difficult to assess the components at a location [24]. The most important aspects of housing and transport livability are:

**Housing:** One of the main indicators of the livability of a city is housing, which is affordable and accessible to all different income groups. The quality of housing and the conditions of the residential environment and the manner of designing and communicating the neighborhood are effective in the health and well-being of the community [1, 17, 31, 42].

**Transport:** Transportation has a key role to play in urban and urban activities and has close ties with housing [2, 48]. Streets and alleys, sidewalks, transportation, congestion, User access, public transport with housing are connected and on the other hand affect the livability of housing and residential neighborhoods and the city. The city's communications network performs two important tasks: the access or creation of a road to the car for use, and the creation of a public place for people to participate in various economic, social and cultural activities [11, 48].

**Urban amenity:** a desirable or useful feature or facility of a building or place. comfort in access to housing and transportation, and jobs and various activities.

**Access to commercial and social services:** Easy and convenient access to work, home and near each other, as well as proximity to study centers and higher education centers and hospitals and medical centers, in addition to comfort and pleasure, increase the livability of that place to live or create a livability [19, 20]. **Natural livable Environment:** New research emphasizes the role of the natural environment in the vitality and health of people, for example, spending time in green spaces and walking in rural spaces [30, 45]. But due to the construction and urban development, the natural environment is further degrading, which requires attention in urban development planning.

The mental perception of livability is including the satisfaction of the inhabitants, the feeling of society and the safety, comfort and have a good feeling to a living environment in the neighborhoods and city. have a livable housing and city cause the good feeling of citizens and this feeling gives them satisfaction to their place of

residence or living such as neighborhoods or cities environment and, consequently, have a housing livability and city with accessible facilities such as transport livability cause their participation in the built urban environment, and the sense of social and safety and as a result of all of this we have liveable city and reach a liveable housing and liveable environment for living [60]. The place and dwelling of life are very important in every field. In other words, housing has the greatest impact on socio-economic and cultural indicators. In fact, housing is a welfare, affordable and affordable place for good transport and sustainability and urban livability. According to [54]. real estate decisions are a result of a “complex function of a wide range of housing and location attributes”. Currently, some of these attributes are related to searching for livable and sustainable neighborhoods. People are looking for a place to live in communities and cities that offer both quality of life indicators and sustainability components [43]. The concept of viability in this study consists of objective and subjective aspects of the living environment. the objective which is related to the built environment and resources available to residents in their homes, neighborhoods, and communities and the subjective experience of livability in particular living environments, which encompasses a sense of community, safety, and well-being. Both aspects are essential for establishing actual livability performance and are examined in this study [60].

### 3 Methodology Research

#### 3.1 Study Area

The metropolis of Tehran has been the capital of Iran for over 200 years. The city of Tehran is  $51.52^\circ$  Longitude and  $35.43^\circ$  latitude. The average elevation of the city is 1100 m. Tehran has been the center of political administrative gravity of the country for 200 years (Tehran Municipality 2019). And now the old city of Tehran has grown and developed. And like other capitals in the advanced world, it wants to be the urban utopia.

The method of this research can be applied in terms of purpose and in terms of collecting data, descriptive-survey. In the first step, to identify and investigate the effective factors of housing and housing viability in access to appropriate transportation in Tehran, using previous studies, and the research done, the paired matrix questionnaire was designed (Based on the Delphi method) [10, 29]. after verifying the validity and pre-test, and then examining and reviewing the professors of Tehran University, University of Tarbiat Modares and University of Shahid Beheshti, and some of the experts, 50 questionnaires in person and online for experts and experts in the field of housing and Urban transportation was sent and finally, 43 questionnaires were collected and the data were analyzed after calculating the compatibility ratio. To collect information, library methods (books, articles, archives, etc.) and field (questionnaire distribution) have been used. On the other hand, the AHP approach enables decision makers to define the criteria's trade-offs, thereby determining the weighting of the criteria. For these reasons, combining these approaches is essential to dealing with complex problems, integrating multiple criteria and efficiently weighting objective and subjective criteria [13, 14, 38, 39, 43].

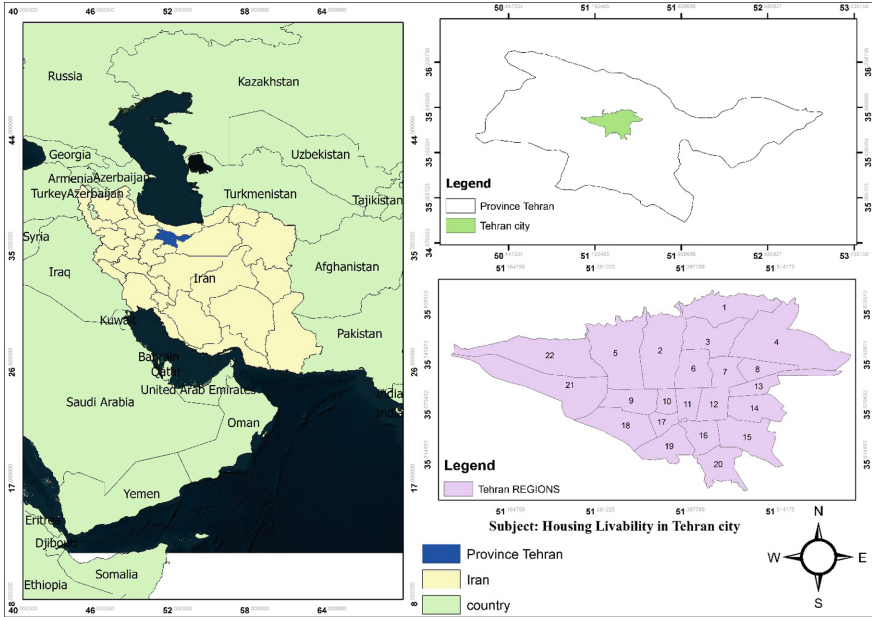


Fig. 1. Map of the study area. Source: Draw the authors, 2019

### 3.2 Fuzzy Logic

Logic, knowledge is the identification and presentation of the correct way of thinking, defining and reasoning. Fuzzy logic is a kind of logic that replaces the simpler machineries with a variety of conclusions in the human brain. As shown in Fig. 1, fuzzy logic consists a wide range of opinions and techniques that are basically firmly-fixed on four notions: fuzzy groups, verbal elements, diffusion possibility (membership function), and If- then Fuzzy’s rules [25], the notion of fuzzy logic was first presented in the world by a prominent Iranian scholar, Lotfizadeh, in a 1965 monograph entitled “Fuzzy sets of information and control”. A fuzzy set is a complex whose origins with membership ( $\mu$ ) belong to that collection. If  $x$  is a collection of elements that are represented with  $x$ , so the fuzzy set  $\tilde{A}$  in  $x$  is the set of tidy pairs as follows:

$$\tilde{A} = \{(x, \mu_{\tilde{A}}(x)) | x \in X\} \tag{1}$$

$\mu_{\tilde{A}}(x)$  is the membership  $x$  in  $\tilde{A}$ . The membership function depicts the sum of  $x$  in the membership function space ( $M$ ). In fuzzy sets, the membership function space ( $M$ ) contains all real numbers between zero and one. The more  $\mu(x)$  is closer to 1, the degree of belonging of the element  $x$  to the fuzzy set  $\tilde{A}$  is greater and if  $\mu_{\tilde{A}}(x) = 0$ , then we say that the element  $x$  does not belong to the fuzzy set  $\tilde{A}$  [5].

$$\mu_{\tilde{A}} : X \rightarrow [0, 1] \tag{2}$$

Multi-criteria Decision Making Techniques (MCDM)

Multi-criteria decision-making techniques are divided into two groups [52] of multi-objective models (MODMs) and multi-index models (MADM). Multi-objective models are used to optimize multiple targets simultaneously, while multi-index models are used to select the preferred option [3]. Several indicators and group decision making in the subject literature have applications. It is extensive and allows managers and decision makers to evaluate options in a number of ways [5] (Table 1).

**Table 1.** Conversion of quantitative numbers to qualitative indicators [35].

1	importance equal or not preferred [35].
3	relatively more important [ 35, 15].
5	more important [35 , 15].
7	much more important [35 , 15].
9	Infinitely more important [35, 15].
2,4,6,8	Intermediate Values Between Valuable Values [35, 15].

### 3.3 Method Fuzzy Topsis

The AHP hierarchical analysis process was developed by the hour in 1971 and aims to create a structure in decisions that are influenced by several independent factors [47]. Topsis (the prioritization method according to the similarity to the ideal positive solution) is known as one of the traditional methods of multi-criteria decision-making, which was proposed by Huang and Yun<sup>1</sup> in 1981 [23, 46]. to solve multi-criteria decision-making problems Which was based on the ideal determination. In fact, topsis is an applied method that compares alternatives with respect to their data values for each criterion and weight of the criteria<sup>2</sup> [57], and with respect to comparative simulation [44] among the eight methods of group models Compensatory Multi-Criteria Evaluation The TOPSIS method has the least defect in index ranking. In the following, we first consider the compatibility ratio [47]. and then the decision-making phases with the help of the Fuzzy Topsis technique [25]:

## 4 Discussions and Findings

### The First Stage of the Fuzzy Topsis Process

The first step is to calculate the total weighted vector<sup>3</sup>

<sup>1</sup> Cheng et al. [46].

<sup>2</sup> Hadi-Vencheh and Mirjaberi [18], Cheng et al. [46].

<sup>3</sup> Weighted Sum Vector.

$$\text{WSV} = \begin{bmatrix} 3/726 & 3/171 & 3/357 & 2/904 & 2/012 & 2/159 & 3/918 & 4/012 & 2/381 & 1 \\ 0/971 & 2/101 & 2/106 & 0/651 & 0/971 & 1/322 & 1/524 & 2/173 & 1 & 0/419 \\ 0/896 & 0/971 & 1/245 & 1/131 & 0/998 & 1/106 & 0/702 & 1 & 0/46 & 0/249 \\ 2/345 & 0/871 & 1/126 & 0/872 & 0/894 & 0/974 & 1 & 1/424 & 0/656 & 0/255 \\ 0/914 & 1/014 & 0/972 & 1/202 & 1/154 & 1 & 1/026 & 0/904 & 0/756 & 0/463 \\ 1/231 & 2/957 & 1/452 & 1/019 & 1 & 0/866 & 1/118 & 1/002 & 1/029 & 0/497 \\ 0/952 & 1/962 & 1/765 & 1 & 0/981 & 0/831 & 1/146 & 0/884 & 1/536 & 0/344 \\ 1/521 & 1/572 & 1 & 0/556 & 0/668 & 1/028 & 0/888 & 0/803 & 0/474 & 0/297 \\ 2/579 & 1 & 0/636 & 0/509 & 0/338 & 0/986 & 1/148 & 1/029 & 0/475 & 0/315 \\ 1 & 0/387 & 0/657 & 1/05 & 0/812 & 1/094 & 0/426 & 1/116 & 1/029 & 0/268 \end{bmatrix} * \begin{bmatrix} 0/235 \\ 0/106 \\ 0/072 \\ 0/082 \\ 0/082 \\ 0/1 \\ 0/094 \\ 0/069 \\ 0/071 \\ 0/065 \end{bmatrix} = \begin{bmatrix} 2/64 \\ 1/08 \\ 0/79 \\ 1/004 \\ 0/83 \\ 1/13 \\ 0/99 \\ 0/83 \\ 0/901 \\ 0/721 \end{bmatrix}$$

The second step is to calculate the compatibility vector<sup>4</sup>

$$\text{CV} = \begin{bmatrix} 2/64 \div 0/235 \\ 1/08 \div 0/106 \\ 0/79 \div 0/072 \\ 1/004 \div 0/082 \\ 0/83 \div 0/082 \\ 1/13 \div 0/1 \\ 0/99 \div 0/94 \\ 0/83 \div 0/069 \\ 0/901 \div 0/071 \\ 0/721 \div 0/065 \end{bmatrix} = \begin{bmatrix} 11/26 \\ 10/23 \\ 11/09 \\ 12/25 \\ 10/20 \\ 11/30 \\ 10/62 \\ 12/05 \\ 12/7 \\ 11/08 \end{bmatrix} \tag{3}$$

Step three to obtain  $\lambda_{max}$  (obtaining the mean of compatibility vector elements)

$$\lambda_{max} = \frac{11/26 + 10/23 + 11/09 + 12/25 + 10/20 + 11/30 + 10/62 + 12/05 + 12/7 + 11/08}{10} = 11/278 \tag{4}$$

Step four Calculate the compatibility index<sup>5</sup>

$$\text{CI} = \frac{\lambda_{max} - n}{n - 1} \quad \text{CI} = \frac{11/278 - 10}{10 - 1} = 0/141 \tag{5}$$

Step Five Calculate the compatibility ratio<sup>6</sup> (Table 2)

$$\text{CR} = \frac{\text{CI}}{\text{RI}} \quad \text{CR} = \frac{0/141}{1/51} = 0/093 \tag{6}$$

<sup>4</sup> Consistency Vector.

<sup>5</sup> Consistency Index.

<sup>6</sup> Random Index.

**Table 2.** Random index

<b>n</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>C</b>	0	0	0/	0/	1/	1/	1/	1/	1/	1/
<b>R</b>			58	9	12	24	32	41	45	51

**The Second Stage is the Fuzzy Topsis Process**

The first step is to obtain vector weights  $w \sim j$  (Table 3)

**Table 3.** Vector weights

	Housing Ivability(Q1)	Transport Ivability(Q2)	Suitable Atmospheres and climatic(Q3)	Individual character(Q4)	Housing prices(Q5)	costs of transport(Q6)	Convenience and comfort(Q7)	safety and security(Q8)	Private transport(Q9)	public transport(Q10)
<b>Q1</b>	1	2.381	4/012	3/918	2/159	2/012	2/904	3/357	3/171	3/726
<b>Q2</b>	0/419	1	2/173	1/524	1/322	0/971	0/651	2/106	3/101	0/971
<b>Q3</b>	0/249	0/46	1	0/702	1/106	0/998	1/131	1/245	0/971	0/896
<b>Q4</b>	0/255	0/656	1/424	1	0/974	0/894	0/872	1/126	0/871	2/245
<b>Q5</b>	0/463	0/756	0/904	1/026	1	1/154	1/202	0/972	1/014	0/914
<b>Q6</b>	0/497	1/029	1/002	1/118	0/866	1	1/019	1/452	2/957	1/231
<b>Q7</b>	0/344	1/536	0/884	1/146	0/831	0/981	1	1/765	1/962	0/952
<b>Q8</b>	0/297	0/474	0/803	0/888	1/028	0/688	0/566	1	1/572	1/521
<b>Q9</b>	0/315	0/475	1/029	1/148	0/986	0/338	0/509	0/636	1	2/579
<b>Q10</b>	0/268	1/029	1/116	0/426	1/094	0/812	1/05	0/657	0/387	1
<b>0</b>	4/10	9/79	14/34	12/87	11/35	9/84	10/89	14/43	17/006	16/1

The second step is to normalize the paired comparison matrix ( $\tilde{v}_{ij}$ ) with new matrix options as follows (Table 4):

**Table 4.** Normalized matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
<b>Q1</b>	1	2.381	4/012	3/918	2/159	2/012	2/904	3/357	3/171	3/726
<b>Q2</b>	0/419	1	2/173	1/524	1/322	0/971	0/651	2/106	3/101	0/971
<b>Q3</b>	0/249	0/46	1	0/702	1/106	0/998	1/131	1/245	0/971	0/896
<b>Q4</b>	0/255	0/656	1/424	1	0/974	0/894	0/872	1/126	0/871	2/245
<b>Q5</b>	0/463	0/756	0/904	1/026	1	1/154	1/202	0/972	1/014	0/914
<b>Q6</b>	0/497	1/029	1/002	1/118	0/866	1	1/019	1/452	2/957	1/231
<b>Q7</b>	0/344	1/536	0/884	1/146	0/831	0/981	1	1/765	1/962	0/952
<b>Q8</b>	0/297	0/474	0/803	0/888	1/028	0/688	0/566	1	1/572	1/521
<b>Q9</b>	0/315	0/475	1/029	1/148	0/986	0/338	0/509	0/636	1	2/579
<b>Q10</b>	0/268	1/029	1/116	0/426	1/094	0/812	1/05	0/657	0/387	1
<b>0</b>	4/10	9/79	14/34	12/87	11/35	9/84	10/89	14/43	17/006	16/1



$$r_{ij} = \frac{r_{ij}}{\left(\sum_{i=1}^M r_{ij}^2\right)^{\frac{1}{2}}} \tag{7}$$

Step 3: Calculate the meanings of the normalized matrix rows:

$$\frac{\sum_{i=1}^n x_{ij}}{n} \quad i = 1, 2, \dots, n, \quad j = 1, 2, \dots, m \tag{8}$$

Step 4: Determine the Fuzzy Positive Ideal Solution (FPIS) and the Fuzzy Ideal Negative (FNIS) [6].

$$A^+ = [v_1^+, \dots, v_j^+, \dots, v_n^+]; v_j^+ = \max_i\{v_{ij}\} \tag{9}$$

$$A^- = [v_1^-, \dots, v_j^-, \dots, v_n^-]; v_j^- = \min_i\{v_{ij}\} \tag{10}$$

$$A^+ = \{0/231-0/186-0/216-0/26-0/2-0/19-0/304-0/27-0/24-0/24\}$$

$$A^- = \{0/055-0/022-0/041-0/046-0/034-0/073-0/003-0/05-0/03-0/06\}$$

The fifth step is to calculate distances sizes (Table 5)

**Table 5.** Calculate the distance measurements

$d_1^+ =$ 0/004	$d_2^+ =$ 0/409	$d_3^+ =$ 0/521	$d_4^+ =$ 0/492	$d_5^+ =$ 0/557	$d_6^+ =$ 0/453	$d_7^+ =$ 0/463	$d_8^+ =$ 0/542	$d_9^+ =$ 0/529	$d_{10}^+ =$ 0/552
$d_1^- =$ 0/594	$d_2^- =$ 0/274	$d_3^- =$ 0/106	$d_4^- =$ 0/147	$d_5^- =$ 0/147	$d_6^- =$ 0/22	$d_7^- =$ 0/209	$d_8^- =$ 0/109	$d_9^- =$ 0/143	$d_{10}^- =$ 0/108

$$d_1^+ = \sqrt{\sum_{j=1}^{10} (v_{ij} - v_j^+)^2} \tag{11}$$

$$d_i^- = \sqrt{\sum_{j=1}^{10} (v_{ij} - v_j^-)^2} \tag{12}$$

$$d_2^+ = \sqrt{(0/123 - 0/186)^2 + (0/216 - 0/216)^2 + (0/059 - 0/26)^2 + (0/098 - 0/2)^2 + (0/11 - 0/19)^2 + (0/118 - 0/304)^2 + (0/15 - 0/27)^2 + (0/104 - 0/24)^2 + (0/102 - 0/24)^2 + (0/06 - 0/231)^2}$$

It should be noted that  $D_{ij}^+$  and  $D_{ij}^-$  are definite numbers.

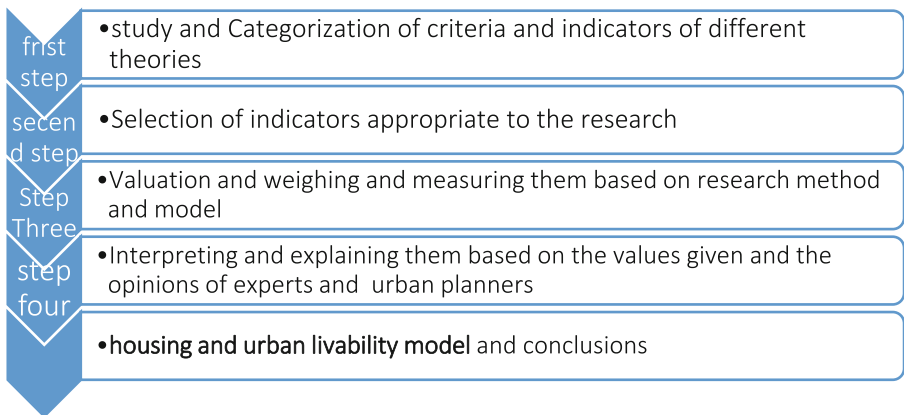
**Table 6.** Calculation of the effective indicators of livability on housing and transport urban

$C_1 =$ 0/993	$C_2 =$ 0/4	$C_3 =$ 0/169	$C_4 =$ 0/230	$C_5 =$ 0/208	$C_6 =$ 0/326	$C_7 =$ 0/311	$C_8 =$ 0/167	$C_9 =$ 0/212	$C_{10} =$ 0/164
Ra nk 1	Ra nk 2	Ran k 8	Ran k 5	Ran k 7	Ran k 3	Ran k 4	Ran k 9	Ran k 6	Ran k 10

Step 6: Calculate the relative closeness of each option to the ideals and index rankings (Table 6)

$$C_i = \frac{d_i^-}{d_i^- + d_i^+} \quad i = 1, 2, \dots, 10 \quad (13)$$

The results from the questionnaire show that most respondents have a housing livability and affordability in an appropriate access to transportation and good communication networks and urban transport livability and sustainability as the most important alternative to housing livability and urban transport livability and Also, in terms of urban livability and urban health, in the next step, housing livability has access to a modern, high quality, livability and sustainable city transport system for increasing the housing livability and livability of the city, an appropriate price for housing and transportation, and With varied choices with very little difference, the results indicate, they are in the third and fourth positions. Other indicators and items are also in place at a later stage, each of which is effective in improving housing livability and urban transport livability. As a result, to reach a city livability, there should be a sustainable housing and transport (livability), followed by a residential neighborhood. The set of identified factors is presented as a model or for the livability of urban housing and transportation (Chart 1).



**Chart 1.** Conceptual research model design of the effective factors on Tehran metropolis livability. Source: Draw the authors, 2019.

## 5 Conclusions

Housing is one of the basic and essential needs of human life. Livable housing should be affordable, providing comfort and wellbeing for residents, as well as adequate access to daily activities and living needs. One of the indicators of housing livability is the availability of Livable and accessible transport for access to various activities in the city and the neighborhood. It is neighborhood livability that can be replied to the daily needs of life at the neighborhood level by foot. Accessible transportation is an important factor in accessing essential resources and services, including housing, employment, education and social welfare and recreation, these results are consistent with [49]. Attention to urban livability indicators can help housing and neighborhood and ultimately help the urban communication network to reach a Livable Community in Residential Environment for urban or neighborhoods in every place that people living. The importance of the needs of people with disabilities in the design of the environment, facilities and services of the city, increasing the quality of life for all, and supporting the integration of these results are consistent with [49]. In this study, the results of the respondents' expectations and the views of urban planning elites for having a housing and transportation Livable are important: Livable, sustainable and affordable housing, access to transportation facilities and access to equipment Transportation, components design including available routes, ramps, constraints, entrances, stairs, escalators, elevators, platforms and public transport, as well as safe and efficient transportation for people with different handicaps. Considered: including injuries, hearing loss and motility. The impact of design and planning of public transportation routes and pavements on the livability and affordability of housing and urban transport was also evaluated. The results showed that routes that were legible, obvious and accessible (such as metro stations, buses, bicycles and sidewalks) created a sense of comfort and well-being, as well as the availability of transportation services for people of all ages and ability to cause Increasing the housing and transport livability of the city.

The walking paths also affect the level of satisfaction and perceived safety and security, especially in people with mobility impairment and the elderly [19]. In addition, the general travel time for people with disabilities can be reduced and participation in travel and activity increases. It is suggested that the design is made available in the context of an integrated network approach and priority should be given to the points of focus of the passengers in the multimodal transport system. Given the advances in information technology, it is imperative that the availability of geographic information be available for pre-travel planning and real-time scheduling, in order to improve the reliability of travel. Awareness of the guidelines in urban strategic planning and transport should also be increased to achieve sustainable development of an accessible transportation system these results are consistent with.

In summary, we can say that to enhance the quality and livability of housing and urban transportation and neighborhoods livability, transport organizations, as well as private and public housing developers should be in the process of Urban construction will improve the development of urban housing and transport, and will consider the livability and integrity of the two structures that form the backbone of the city. It should

also consider modern technology, quality, pricing and affordable urban transportation affordable for low-income groups, and the safety and security of an extensive range of communal and private and personal transport, that is, a spectrum of citizens with a spectrum There are different types of revenues, which should be planned for transportation on the basis of this spectrum, and more should be done on public transport and access to urban housing and public transport with an emphasis on the urban livability, construction And development. as well as in this research, the TOPSIS FUZZY Multiple Criteria Decision Making model has been used to rank alternative variables that affect the increase of housing livability, moreover the quality of urban transport and livability of settlements and the city from the point of view of housing and urban transport livability Approach.

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