

## EVALUATING AND ANALYZING HABITABILITY CASE STUDY: ZANJAN CITY

**Karamat Allah Ziari<sup>1</sup>, Abolfazl Meshkini<sup>2</sup>, Alireza Anbarlou<sup>3</sup> and \*Kamran Yeganegi<sup>3</sup>**

<sup>1</sup>*Department of Geography and Urban Planning, University of Tehran, Tehran, Iran*

<sup>2</sup>*Department of Geography and Urban Planning, Tarbiat Modares University, Tehran, Iran*

<sup>3</sup>*Futurology Department, Shakhsh Pajouh Institute, Isfahan, Iran*

*\*Author for Correspondence*

### ABSTRACT

Livability is defined as one of the aspects that can contribute to high quality of life. Livability is the sum of the factors that add up to a community's quality of life—including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment and recreation possibilities. This is because high quality of life in urban lifestyle, health and well-being, residents' satisfaction will be affected. Also, quality of life shows sustainability and environmental stability. The present study was conducted to determine the feasibility of environmental indicators in Zanzan city. The research method is descriptive-analytic with the purpose of application. Data and research data were collected using a questionnaire, confirming the formal validity of the questionnaire by experts, and reliability of the questionnaire by using the Cronbach's Alpha “.831”. Determination of sample size and sampling method (384 samples were determined by Cochran formula) using multi-stage sampling. Data entry was performed using SPSS, Excel, Arc Gis software, statistical tests, data analysis with SPSS software and T-test. Among the components of micro-survival, physical criteria with a significant coefficient of 5.61 and an impact coefficient of 1/23 have the most effect on the Zanzan city's habitable status. Among the effective macro dimensions Based on the findings of Table 4-85, macroeconomic components with a significant coefficient of 9.99 and coefficient of effect of 92.2% have been identified in Zanzan's life sustainability concept.

**Keywords:** *Livability, Quality of Life, Urban Neighborhoods, Zanzan City*

### INTRODUCTION

One of the twentieth-century modern urban phenomena is the emergence of metropolitan areas and urban housing problems. This form of urbanization that was the product of the transformations of the industrial revolution dates back to the early twentieth century, and during this century, especially in the latter, it was dominated by urbanization. But the process of urbanization was not empty and has had many negative consequences. The serious threat to the quality of the environment, the increase in urban poverty and the formation of marginalized areas, the lack of infrastructure and urban services, such as water supply and housing supply, inequality Economic and social issues and other issues can be understood by the increase in population and rapid growth Iranian salmon is also more acute due to the rapid population growth rate in urban areas (Turanian, 4.181). So, Livability is a general concept associated with a number of other concepts and terminology such as sustainability, quality of life, and quality of place and healthy communities. Today, the city with many challenges in the economic, social and environmental faced. However, increasing the proportion of urban population increased with detrimental consequences for cities has brought. Sustain such growth, urbanization, social problems, economic and environmental crisis poses and warning of instability cities. Among other problems, such as various forms of pollution, traffic and other psychological problems, quality of life and consequently reduce the livability of cities. Thus, the necessity and importance of sustainable development and livability in cities today is quite apparent. Livability and sustainable development concepts and approaches that the city away from all kinds of pollution, traffic, environmental problems, economic, social and physical brings to citizens. Term livability refers to the degree necessary to provide a community based on the needs and capacities of the community. A non-likeable society is indifferent to the needs of its community and does not respect their

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wishes. Overall, livability of the three dimensions of economic, social and environmental division and each have their own characteristics. Dimensions and measures required for this study was based on the globally dominant language selected livability.

This study is done in Zanjan city is the capital of Zanjan Province in Iranian Azerbaijan. It lies 298 km (185 mi) north-west of Tehran on the main highway to Tabriz and Turkey and approximately 125 km (78 mi) from the Caspian Sea. The city is located about 20 kilometers south of the Qaflankuh Mountain Range. At the 2016 census, its population was 433,475 which is the 20th largest city in Iran. The population of Zanjan consists mostly of Iranian Azerbaijanis who speak Azerbaijani language Zanjan is 21733 square kilometers. Zanjan is known for its beautiful handcrafts such as knives, traditional sandals, called charoogh, and malileh, a handcraft made with silver wires. Zanjani artists make many things like various decorative dishes and their special covers as well as silver jewelry. In ancient times, Zanjan was known for its stainless and sharp knives. But this tradition is gradually becoming extinct by introduction of Chinese-made knives into the market which are far cheaper, more abundant and of course less artistic. Many villagers today are traditional carpet weavers, perhaps Zanjan's most popular handcraft. Zanjan's population boasts the highest level of happiness among the people of 30 other provinces in Iran, according to a detailed survey conducted.

### **Livability**

Since first using the term “livable cities” back in the 1980s to describe quality of life and the characteristics of cities that make them livable, IMCL has seen the term used in countless ways to describe standard of living, rather than quality of life. Every city wants to be considered the “most livable,” a title that can attract new business and investments, boost local economies and real estate markets, and foster community involvement and pride. The term has become so widely, if not overly used, that its meaning is becoming lost. The term quality of life is also used by politicians and economists to measure the livability of a given city or nation. Two widely known measures of livability are the Economist Intelligence Unit's Where-to-be-born Index and Mercer's Quality of Living Reports. These two measures calculate the livability of countries and cities around the world, respectively, through a combination of subjective life-satisfaction surveys and objective determinants of quality of life such as divorce rates, safety, and infrastructure. Such measures relate more broadly to the population of a city, state, or country, not to individual quality of life. Livability has a long history and tradition in urban design, and neighborhoods design standards such as LEED-ND are often used in an attempt to influence livability.

A review of 18 definitions of livability found there is no consensus definition, however, “transportation,” “community,” and “quality” were the most common words associated with the definitions. Additionally, the idea of creating livable communities applies to all types of places – urban, rural, and suburban, of any population size. Three federal agencies, the Department of Transportation, the Environmental Protection Agency and the Department of Housing and Urban Development have formed a partnership around the idea of promoting livable communities through federal policy. The Partnership for Sustainable Communities (<http://www.sustainablecommunities.gov/>) uses these principals of livability:

- Provide more transportation choices
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate and leverage federal policies and investment
- Value communities and neighborhoods

Sustainability and livability are similar but distinct concepts. An analysis of the literature suggests that sustainability is a goal while livability is a way to describe tactics that are used to achieve sustainability goals. Another way of looking at the difference is that livability is a set of strategies for community-focused actions that are centered more on the local human environment and less on larger environmental impacts. The two concepts are similar in that, despite their different scales, both can achieve similar outcomes.

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Livability objectives are achieved through a number of tactics:

- Smart Growth
- Complete Streets
- Lifelong Communities
- Safe Routes to Schools
- Context Sensitive Solutions/Design
- New Urbanism
- Transit-Oriented Development
- Place making

### **Livable community**

For some, a livable community makes it convenient to travel by foot, bike, or transit to access nearby stores, parks, and other amenities. For others, affordable housing or open space is more important. Because people look for different things when searching for a satisfying place to call home, measuring the livability of cities and towns across the United States can be challenging. This Index gives higher scores to communities with diverse features that help people of all ages, incomes, and abilities—not just older Americans. Livability is about realizing values that are central to healthy communities: independence, choice, and security. Livable communities help residents thrive, and when residents thrive, communities prosper.

### **Livability Measurements**

Taking a holistic approach to assessing community livability is important, because every place has unique strengths. Central neighborhoods in major cities have the advantage of being close to job opportunities, shops, and entertainment options, while rural towns often have more affordable homes, safer streets, and less pollution. The Livability Index measures housing, neighborhood, transportation, environment, health, engagement, and opportunity characteristics. For each category, the Index evaluates current conditions using a diverse set of metric indicators, and considers policies and programs that can enhance community livability over time, across multiple dimensions (housing, transportation, neighborhood characteristics, environment, health, opportunity, and civic and social engagement):

#### **1. Housing**

Home is where the heart is—and the same holds true for the Livability Index. Housing is a central component of livability. Deciding where to live influence many of the topics the Index covers. We spend more time in our homes than anywhere else, so housing costs, choices, and accessibility are critical. Great communities provide housing opportunities for people of all ages, incomes, and abilities, allowing everyone to live in a quality neighborhood regardless of their circumstances.

#### **2. Neighborhood characteristics**

What makes a neighborhood truly livable? Two important qualities are access and convenience. Compact neighborhoods make it easier for residents to reach the things they need most, from jobs to grocery stores to libraries. Nearby parks and places to buy healthy food help people make smart choices, and diverse, walkable neighborhoods with shops, restaurants, and movie theatres make local life interesting. Additionally, neighborhoods served by good access to more distant destinations via transit or automobile help residents connect to jobs, health care, and services throughout the greater community.

#### **3. Transportation**

How easily and safely we're able to get from one place to another has a major effect on our quality of life. Livable communities provide their residents with transportation options that connect people to social activities, economic opportunities, and medical care, and offer convenient, healthy, accessible, and low-cost alternatives to driving.

#### **4. Environment**

Good communities maintain a clean environment for their residents. Great communities enact policies to improve and protect the environment for generations to come. The Livability Index looks at air and water quality. It measures communities' actions to create resilience plans to prepare for emergencies and natural disasters, and it awards points to states that have policies promoting energy efficiency and that protect

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consumers from having their utilities cut off during extreme weather events. The role of the built environment in shaping children's lives, facilitating their positive health and development is not easily measured in economic terms but it can be understood. The built environment influences how people relate to each other, the opportunity for community to form, and the depth of our social networks. It regulates how much incidental exercise is possible through walking and biking. Buildings and streets contribute to reducing crime when buildings support eyes on the street, and shops and services put a functioning community in control of the public realm. Pattern, complexity, and harmony in the built environment can stimulate curiosity, discovery, and a sense that the world is meaningful. Beauty in nature, architecture and public places can lift spirits, raise endorphin levels, and improve physical and emotional health. These are just a few of the ways in which IMCL encourages a city to increase livability for all. The Mercer data provides valuable benchmark statistics, but a city may have to aim higher than to be placed top in these rankings to be truly "livable".

### **5. Health**

Community conditions influence health behaviors. Healthy communities have comprehensive smoke-free air laws, offer easy access to exercise opportunities, and have high-quality health care available. Because health is so deeply related to quality of life, many other categories of livability in this Index include metrics related to health. For example, access to healthy foods, jobs and education, number of walk trips, lower speed limits, social engagement measures, and air and water pollution are all related to health. Where you live matters. Once fundamental health and safety is achieved, standard of living issues are not directly correlated with happiness, with a sense that life is meaningful, that we are of value to others, and that there is much to be discovered and celebrated in the human and physical world around us. These are important aspects of quality of life and are profoundly influenced by the built environment - by a city's livability. The issues come more clearly into focus when we consider the needs of our most vulnerable members of society, children, elders, those who are economically or socially marginalized.

### **6. Engagement**

A livable community fosters interaction among residents. From social engagement to civic action to Internet access, residents' individual opportunities to connect and feel welcomed help lessen social isolation and strengthen the greater community. The Index explores and examines the different ways in which residents engage with and support their communities, and how they impact livability as a whole.

### **7. Opportunity**

The degree to which a community embraces diversity and offers opportunities to residents of all ages and backgrounds is important to overall livability. Backed by a strong regional economy and fiscally healthy local governments, welcoming communities provide residents an equal chance to earn a living wage and improve their well-being, from jobs to education.

Quality of life (QOL) is the general well-being of individuals and societies, outlining negative and positive features of life. It observes life satisfaction, including everything from physical health, family, education, employment, wealth, religious beliefs, finance and the environment. QOL has a wide range of contexts, including the fields of international development, healthcare, politics and employment. It is important not to mix up the concept of QOL with a more recent growing area of health related QOL (HRQOL). An assessment of HRQOL is effectively an evaluation of QOL and its relationship with health. Quality of life should not be confused with the concept of standard of living, which is based primarily on income. Standard indicators of the quality of life include not only wealth and employment but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging. According to the World Health Organization (WHO), quality of life is defined as "the individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals." In comparison to WHO's definitions, the Wang-Baker Faces scale defines quality of life as "life quality (in this case, physical pain) at a precise moment in time." While Quality of Life (QOL) has long been an explicit or implicit policy goal, adequate definition and measurement have been elusive. Diverse "objective" and "subjective" indicators across a range of disciplines and scales, and recent work on subjective well-being (SWB) surveys and the psychology of

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happiness have spurred renewed interest (Robert Costanza *et al.*, 2008). One approach, called engaged theory, outlined in the journal of Applied Research in the Quality of Life, posits four domains in assessing quality of life: ecology, economics, politics and culture. In the domain of culture, for example, it includes the following subdomains of quality of life:

- Identity and engagement
- Creativity and recreation
- Memory and projection
- Belief and ideas
- Gender and generations
- Enquiry and learning
- Wellbeing and health

Also, frequently related are concepts such as freedom, human rights, and happiness. However, since happiness is subjective and difficult to measure, other measures are generally given priority. It has also been shown that happiness, as much as it can be measured, does not necessarily increase correspondingly with the comfort that results from increasing income. As a result, standard of living should not be taken to be a measure of happiness. Also, sometimes considered related is the concept of human security, though the latter may be considered at a more basic level and for all people.

### **Urban Neighborhoods**

There are many words describing city life. While looking for a new home, you may hear the term “urban neighborhood.” But what exactly does that mean? Before choosing a new place to live, it is important that you understand these terms and what it means for your new location. Living in an urban neighborhood has many benefits and advantages. A bit of a warning: after reading this blog you may get a sudden urge to move to the city. An urban neighborhood is usually found in the downtown core of a city. These neighborhoods are not exclusive to any particular state but will always be found in the heart of a major metro area. In larger cities, the majority of homes may consist of apartment buildings, condos, and townhouses. Urban neighborhoods offer reasonable housing prices with an eclectic mix of amenities, attractions, and nightlife. The area will typically be ethnically diverse and inclusive of all age ranges. Urban neighborhoods are much more walkable than their suburban counterparts. Being close to restaurants, venues, and events can improve your social life substantially. Parking is limited in the city, but there are more opportunities for public transportation. For some cities, it may be worth it to ditch the car before moving in. Unfortunately, some urban areas have higher crime.

## **MATERIALS AND METHODS**

### **The Research Method**

The present study is a descriptive-analytical study and, based on the nature of the subject and the indicators studied, documentary research and field studies are used in this research. And is in terms of purpose. To collect data and information, a researcher-made questionnaire has been used. The questions are based on the selected components as 5 options and the Lycare spectrum. The statistical population in this research is residents of Zanjan city. To determine the sample size from Cochran formula, for data collection, samples were selected randomly and 384 were sampled. So, after validating the questionnaire using experts' opinions, Cronbach's alpha method was used to measure the reliability of the questionnaire. The Cronbach's score obtained in this study was 831 which indicates that the questionnaire has Babylonian reliability. To analyze the collected data using SPSS software, using T-single T test A monkey has been used. Hot Spot Analysis calculates the Getis-Ord Gi statistic for all data complications.

## **RESULTS AND DISCUSSION**

### **Research Findings**

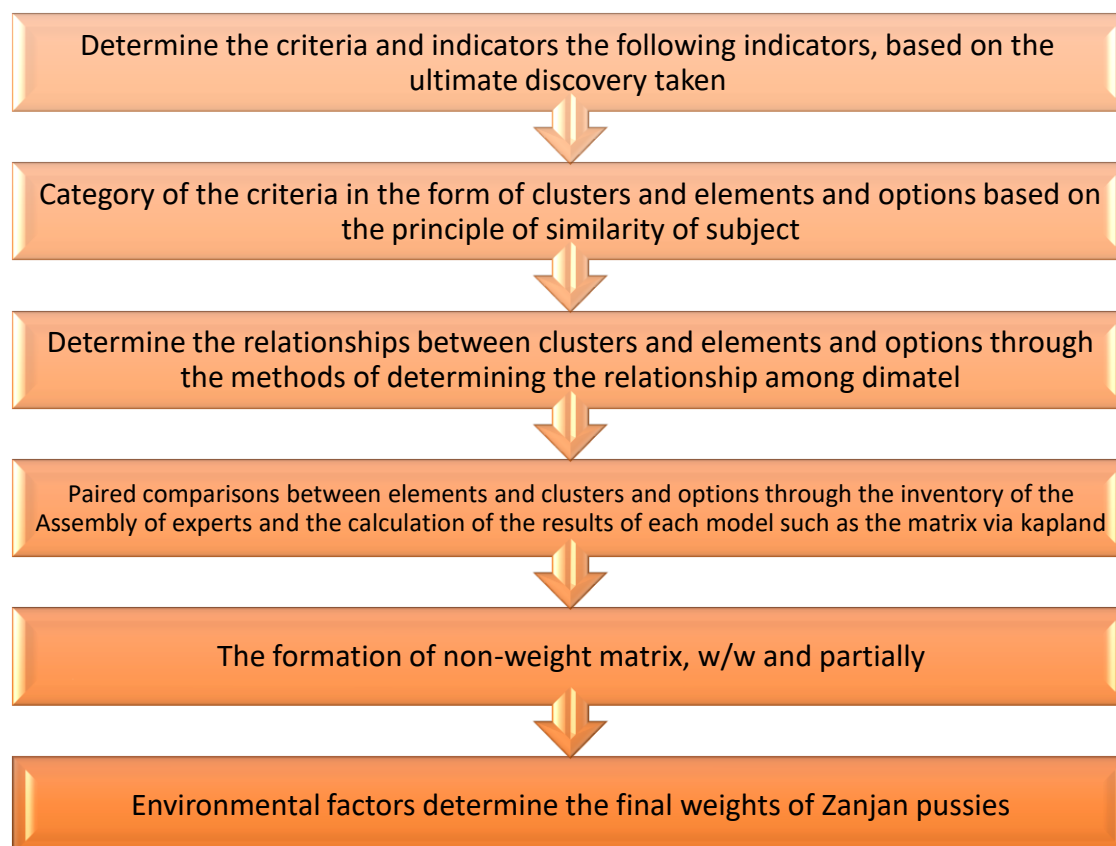
In order to evaluate the indicators of viability in Zanjan, the Cochran method has been questioned from 384 people. At first, the results of the responses of the sample population were analyzed and then analyzed and divided into two parts: descriptive questions and analytic or inferential questions, to be



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prepared to respond to the research hypotheses. In the first part, which relates to descriptive questions, the graphical language of the graph and the analysis of inferential questions with the map language is a visual representation of the results. Then, the level of Zanzan's survivability has been addressed. Living Zoning City Layout.

Epidemiology is affected by factors of time and place and its components and factors will vary according to the time period and geographical location. Zanzan is also an objective manifestation of habitability in different dimensions, and different levels of manifestation of the different spatial manifestations of habitat conditions and its reflections from the neighborhood (neighborhood) to the other can display heterogeneous and different levels of viability. In this way, this research tries to explore Zanzan's living standards through the theoretical framework developed from these concepts of criteria and criteria, in order to provide the basis for the species diversity of the habitat. This has been done through the use of quantitative techniques and four dimensions of physical, social, economic and environmental. In this regard, more accurate determination of the weight of each of the factors affecting the survivability of Zanzan city in relation to the formation of tree structure of the research network analysis model, paired comparisons, network communication and calculations of the importance of each agent based on the network analysis model, through soft SupraScience software and MATLAB programming environment. Thus, through the formation of the structure of the conditions of influence and influence of each of the factors according to the ultimate goal of the research was determined. After normalizing the specific weights to the factors, the final weights and the effect of each factor were obtained. In the end, due to relative weights, paired comparisons and network effects, various factors affecting the viability of different Zanzan areas and neighborhoods are determined according to experts, which are each of the four factors affecting life How much research is effective in achieving research goals.



**Figure 1: Diagram Final Weights for Calculating the Sequence of Environmental Factors Influencing Vulnerability**

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The structure of the research network in the ranking of internal and external factors in general is the graph of the plot (2-4). It should be noted that according to the hybrid-technical approach of the research based on the hybrid model (Topsis-ANP), The relative importance of each of the effective factors in Zanjan's survivability identified through the application of the network analysis model (ANP), paired comparisons and network analysis of each of the factors with physical, social, economic and environmental structures are calculated and entered Technique became tops. The process of calculating the weights of the various factors of these four structures is carried out through the following process (Figure 1).

Next step, according to the calculations made by the MATLAB programming environment and the super decency and its output combining with the TOPSIS technique, the hybrid technique (TOPSIS-ANP), the governing state of the city, the combination of different dimensions of viability Determined.

## Conclusion

Today, urban viability reflects a strong discourse in urban development and urban design, which has become prevalent in the history of urban planning. Such a discourse refers to the existence of an appropriate link between urban environments and social life. This suggests that the concept of the universality of cities in different countries is evident. This concept can be evidence of all aspects of the lives of citizens in Environment and neighborhood in which they live. For this reason, measuring the amount of habitability for each location improves the understanding of planners and city managers about the quality of life of individuals and the environment of that location. With this knowledge, the way to better planning and management of the urban environment will be opened. In this research, dimensions of spatial sustainability and viability of the neighborhoods of Zanjan city were evaluated and different rankings of neighborhoods and spatial imbalances were displayed. Evaluating the dimensions of habitability and formulating plans and Policies are needed to improve and improve it for human settlements. Current research for the Zanjan neighborhoods and its natural, social, environmental and economic dimensions can be a solution for residents' satisfaction, attraction of living space, proper setting up of domestic and foreign investment, expanding affordable housing for different sectors. The community should be mindful of urban infrastructure. Considering the findings and results of this study, some suggestions are proposed to improve the Zanjan city's habitability.

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