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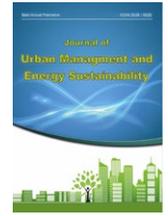
ORIGINAL RESEARCH PAPER

Explaining the comparative model of old and new urban fabrics with healthy city approach

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ARTICLE INFO	ABSTRACT
	After the population expansion and excessive urbanization, especially after the industrial revolution, cities are faced with problems such as lack of housing, poverty, types of pollution, traffic and congestion, decrease in connection with nature, loss of desirable urban spaces, decrease in health level, etc. According to the needs of their cities, different countries have implemented projects using the concept of a healthy city, among which we can refer to the healthy city project. The current research is pragmatism research that has a combined approach that uses both quantitative and qualitative methods at the same time. In this research, which has a combined approach, the strategy is considered. After collecting quantitative data by questionnaire and qualitative data based on interviews and field observations, the researcher identifies the quantitative and qualitative indicators of the healthy city and the old and new fabrics of the city, then analyzes each type of data. By identifying the quantitative and qualitative indicators of the old and new fabrics, as a result by using the structural model, all of fabrics can be compared based on the indicators of the healthy city, and based on that, the degree of enjoyment of each from these fabrics, we will measure the criteria of a healthy city. In future studies the conceptual model can be developed and be much more utilized.

Running Title: Comparative model of old and new urban fabric with the approach of a healthy city

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18	01	08

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1. Introduction

After the industrial revolution, cities are faced with problems such as lack of housing, poverty, types of pollution, traffic and congestion, decrease in connection with nature, loss of desirable urban spaces, decrease in health level, etc. (Pineo et al, 2018). On this basis, theorists and urban planners have presented various approaches and plans to solve these problems and created cities with suitable and favorable conditions in terms of all quantitative and qualitative aspects of citizens' lives, which based on that, plans and theories such as: sustainable development, city garden, city landscape, healthy city, etc. have been proposed in this direction (Yang et al, 2018). The concept of a healthy city was born with professor Dohls`s article, according to him, a healthy city is a place that, in addition to the physical dimension, pays attention to other dimensions of citizens' lives, especially the social dimension of their lives, and having the conditions and facilities required by citizens, enables them to fulfill their duties. And the performance of their lives helps citizens to support each other in their activities (Nazm far et al, 2018). According to the review of different theories and definitions of the concept of a healthy city, it can be said that a healthy city is a category of public health, which in its nature is affected by social, environmental and economic changes, and it can be said that the disease cannot be an indication of a healthy city only, but the citizens of a healthy city should have a high quality of life. From the point of view of mental health, it should have the least social tensions and, in general, it should have suitable conditions in terms of all personal, social, economic and environmental aspects. A city is a healthy if its citizens are healthy. It can also be said that a healthy city can helps all of the citizens to create a healthy environment with their participation in urban affairs and cooperation between departments of organizations, so that they can actualize their potential capabilities and respond to their needs with the help of others, and also realize their health (Grant, 2019).

According to the needs of their cities, different countries have implemented projects using the concept of a healthy city, among which we can refer to the healthy city project in Toronto, Canada, Liverpool, England, Salzburg, Australia, etc. In Iran, in 1991, the health city project was carried out under the title "13 Aban Project". Unfortunately, the results obtained indicate that the goals of the healthy city project have not been achieved. It can also be said that various articles have been written in the world as well as in Iran with the approach of a healthy city, among which articles such as: development of an indicator system for a healthy city in Chongqing, China, considering an urban area as a level of measurement (Li, 2019). Promoting the agenda of healthy cities through indicators: developing an urban environment with health indicators (Pineo, 2018). Aspirations and realities of survival: implementing urban policies to create healthy cities in Australia (Lowe et al., 2020). Accordingly, most of the articles done in Iran have focused on identifying or evaluating the dimensions and indicators of a healthy city in different societies. It has been done according to the approach of a healthy city, in fact, the basic issue is that the urban spaces in new contexts in today's cities have moved away from the indicators of a healthy city and need to be examined and evaluated in terms of having these indicators. The indicators considered by the World Health Organization in relation to the concept of a healthy city are classified into three major groups: environmental indicators, socio-demographic indicators and health indicators. With the help of these indicators, the health level of cities and their components can be examined. Also, this organization has stated principles for this concept, which include things such as: sustainable livelihood, safety and security, economic productivity, cooperation, access, balance, compatibility, dynamism (orderly development), identity, beauty, diversity, The productivity of free time depends on considering the city and the sense of belonging. Now, in order to solve the problem, one must first understand the problem under study correctly and then identify the right way to solve it. In fact, it can be said that the current problem has a pragmatism type of worldview based on its nature and seeks to solve the problem by any method. Based on which it has a mixed approach that incorporates both quantitative and qualitative approaches. The strategy and road map that this research follows,

according to Creswell, is a mixed strategy at the same time as facing the issue that each strategy needs its own tactics, therefore, for the present research, tactics such as hidden content analysis are used to identify the indicators of the old and new fabric based on the approach of a healthy city, as well as descriptive and inferential statistics tactics. It compares two contexts in terms of having the indicators of a healthy city. The tools used to collect data include library documents, upstream plans, images related to urban spaces in two contexts, as well as the use of questionnaires. The format of the tool used includes text, photos, etc. Finally, the collected data and information are analyzed based on the type of data and whether they are quantitative or qualitative using appropriate methods. And in order to identify the indicators of old and new context, it deals with the coding of library documents, high-hand plans, photos and maps using the MAXQDA tool. The current research aims to identify the quantitative and qualitative criteria of the old and new city fabric with the approach of a healthy city, and to express questions such as which of the old or new fabric in cities has the criteria of a healthy city? And what are the quantitative and qualitative criteria of the old and new fabrics of the city with a healthy city approach? It is trying to express the adaptive model and finally presents the conceptual structure.

2. Materials and Methods

2.1. Methodology

As a methodology approach about the subject, there have been articles related to the concept of a healthy city, which can be referred to as the articles titled Spatial Analysis of the Healthy City Index in Urban Settlements (Case Study: Ardabil Province. Far et al., 2017. An Analysis of The Indicators of a Health City: Case Study of Bandar Imam Khomeini (RA) (Mousavi, 2016) and Evaluation of the Components of a Health City: Case Study of ISAR Town of Urmia (Afshar, 2016). But in overall view, in terms of worldview and epistemology, the current research is pragmatism research that has a combined approach that uses both quantitative and qualitative methods at the same time. In this research, which has a combined approach, the strategy approach is considered.

According to Creswell, it is a simultaneous development plan based on which two quantitative and qualitative methods are designed and implemented at the same time. In fact, after collecting quantitative data by questionnaire and qualitative data based on interviews and field observations, the researcher identifies the quantitative and qualitative indicators of the healthy city and the old and new tissues of the city, then analyzes each type of data. First, the quantitative data is analyzed that describes the characteristics of a variable and, mean and average or dispersion indices are also analyzed. It also uses the content analysis method to analyze qualitative data. Moreover, in order to analyze these data, the researcher has used various tools such as MAXQDA for qualitative data analysis to generate the final framework of indexes. And finally, by determining the commonalities and differences of the indices of each of the old and new contexts, it deals with the indices of a healthy city in order to determine which of the contexts has a better situation in terms of the indices of a healthy city. By Explaining the criteria of the old and new city fabric with a healthy city approach, we reach to the final framework to evaluate the current models which is the direct question of this research.

2.2. Literature review

The World Health Organization strives to achieve the aforementioned goals and states that having a healthy city does not depend on the current health infrastructure, but on the commitment to improve urban areas and the desire to create the necessary connections in the political, economic and social fields. According to this, it can be concluded that health means the improvement of individual, social, economic, cultural, political, etc., conditions in all people. In other words, health means a complete physical and mental satisfaction and various and numerous measures and in economic sectors, it is a social, political, etc., health. Body (form) and function (role) are the two parts that make up the fabrics of the city, and when the physical, functional, or both qualities are reduced or disturbed in parts of the urban tissue, wear and tear occur (Daudpour and Nik nia, 2018). There are two types of exhaustion,

physical and functional. When the body is damaged, but the activity and use are responsive, or the opposite happens, partial exhaustion has occurred, and if both the body and function are damaged, complete exhaustion occurs (Azizi and Arasteh, 2009). So, the healthy city has the direct meaning.

In short, health is closely related to human life, how do we work? How do we live? How are we and how do we feel?

And finally, the ultimate goal of healthy cities is to increase the general efficiency of the society. Such a goal will not be achieved except by creating the following:

- The establishment of an inter-departmental committee for the city, in such a way that it can bring together all the city decision-makers, so that they can reach a simple and strategic vision.

- Creating a technical group with different expertise, so that it can identify and diagnose the problems of the society. The ultimate goal of such a group is to find points related to inequalities in a particular city.

- Creating a special center for face-to-face exchange of opinions and discussions, in order to find out the nature and quality of the current issues of the city in question, through such a meeting, how to respond to urban needs is evaluated.

- Formulating and creating urban plans, related to health, in a way that are based on different parts of the society. The purpose is to formulate and implement plans that respond to the nature and wishes of different parts of a society.

- Development and expansion of such models that can be effective for different cities with changing priorities. Such models can include activities and measures related to the environment, people's private lives, forming service groups, strengthening public partnerships, etc.

- Monitoring and research on the effectiveness and impact of the implementation of the adopted models, mainly in the field of health in cities, require educational financial institutions to communicate and cooperate with the host centers.

- Bilateral support, cultural relations and cooperation between cities should be established and maintained. It is only in such conditions that a healthy city can be achieved.

2.3. Effective factors in realizing the principles of a healthy city

Cities have their own characteristics and conditions, and each tries to meet the needs of its residents. Accordingly, cities must have special qualities in order to meet the expected needs of the society in a favorable manner. Desirable qualities can also be achieved by applying principles. Accordingly, in order to comply with the principles of a healthy city and to achieve the qualities needed by the society, various factors operate in cities, which can be classified into several categories based on different fields. People, physical factors, historical factors, therapeutic factors, health factors, urbanization factors, geographical factors, economic factors, social factors, political factors, architectural factors, ecological factors, psychological factors, nutritional factors, pathological factors and management factors. As mentioned, the mentioned factors play a special role in meeting the needs of the society.

Dr. John Ashton refers to these factors as petals, each of which represents a specialty, organization, and related organizations, and people are at the center of it to reach a common language in solving problems (Parker, 2012). One of the correct implementation axes of the idea of a healthy city is to recognize the various abilities and capacities of the people and facilities and governmental and non-governmental institutions of each region and to coordinate these capacities and facilities in order to achieve the goals of a healthy city. In this, the people (society) constitute the main target. In his paper, Marcus Grant classifies the factors that affect the realization of the principles of a healthy city in other groups. Grant compares health planning to a game, where the playground is the urban spaces that are the places where people live. According to his opinion, the scale of action can be the size of an urban area, district, or neighborhood. He created a health map together with Barton in 2006, which he calls the health planet. In this map, the circle is centered on people. 6 arcs are among the factors that influence the realization of the

principles of a healthy city. These factors include people, lifestyle, society, local economy, activities, built environment and natural environment. Activities and built places and environment, and natural factors are distinguished from other factors in Barton and Grant's health map in order to highlight these factors for planning the built environment. In their planning, planners should evaluate these components based on the conditions and characteristics of their desired city and environment. Accordingly, in order to plan a healthy city, each of the factors mentioned in the health map can be based on the specific goals. (Donnelly and Abbot, 2018).

2.4. Features and indicators of a healthy city

Today, with the increase in population and excessive growth of urbanization, especially after the industrial revolution, cities are faced with many problems such as air pollution, water pollution, poverty, lack of connection with nature, lack of housing, increase in unemployment rate, increase in physical diseases, decrease in the quality of urban spaces, etc. Accordingly, paying attention to the city and its issues are some of the important actions for planners and the government, etc. Planners use different approaches to improve the conditions of cities, such as sustainable development, smart growth, healthy city, etc. As it was said, the healthy city has

been used as one of the approaches to improve the conditions of the cities. In fact, the healthy city has features that can provide the health of cities and citizens. The approach of a healthy city has many quantitative and qualitative indicators, which are considered based on the common principles of a healthy city. The principle also represents the indicators and criteria that can be accessed through them. Therefore, it is very important to consider the indicators of a healthy city in the healthy city projects, and by means of these indicators, the level of health of any city can be measured. The standards of a healthy city, determined by the World Health Organization, are classified into three groups: environmental indicators, social and demographic indicators, and health indicators. Using these indicators, the health of cities can be evaluated. It is according to the Table 1.

2.5. Quantitative and qualitative indicators of a Health city

Based on the principles of a healthy city, the World Health Organization has presented quantitative and qualitative indicators of this approach as follows.

2.6. Quantitative indicators

Economic dimension: average personal income, employment rate of women and men,

Table 1: Index table of a healthy city according to the World Health Organization. (Syme, 2013; Lewis, 2014; Wong et al., 2018)

Environmental indicators	Socio-demographic indicators	Health indicators
Air pollution	Unemployment rate	Vaccination coverage of six-year-old children
Water quality	Percentage of ordinary people who are employed.	Number of deaths (all ages)
Green space surface	Average education period of girls and boys	Low birth weight babies
Public access to green space	Educating literate adults	Existence of health education programs
Recreational and sports places	Percentage of people receiving less than per capita income.	Life expectancy at birth
Percentage of households living in substandard residential areas.	Employment	Infant mortality
Garbage collection		

unemployment rate, percentage of households using the Internet, percentage of public places that use the Internet, average per capita water consumption excluding industrial uses, electricity consumption per person.

2.7. Social dimension

Urban population density, life expectancy in men and women, the number of households below the poverty line, the capital (class) gap, the amount of crimes, annual casualties from public disasters, the number of annual casualties in the transportation network, per capita participation in cultural and artistic activities, the average number of students in each class, the proportion of the population who have university literacy, the amount of urban land development, the amount of private houses, the amount of public facilities in urban areas, per capita parks and green areas, per capita coastal parks and green areas for per person, car ownership rate, motorcycle ownership rate, transportation system coverage rate, pedestrians per capita on major road index, bicycle route index per capita, number of bicycles.

2.8. Environmental dimension

The number of bird species that live naturally in the environment, the number of fish species that live naturally in the environment, the index of green resources, the amount of permeability (settlement) of urban land, the number of days with ps>100, Co emission per capita 2, promotion of the development of rivers with low pollution, water reservoir quality, tap water quality, per capita daily pollutant production, the share of recycling in solid waste, the share of accumulated solid waste from the total waste produced, the amount of use of renewable resources, efficiency of waste water and sewage treatment, compared to the amount of sanitary sewage to the whole sewage system.

2.9. Organizational dimension

Local implementation of environmental projects, joint international cooperation with regard to sustainable development, the share of environmental and ecological budgets from the local budget, the social welfare cost of the total cost, the government's cost in preventing pollution and resource recovery, the ratio of full to limited tax estimates, appellate statistics of court materials related to environmental pollution (Ziari et al., 2013).

2.10. Quality indicators of a Health city

From the point of view of the World Health Organization, a healthy city to achieve quality goals

The following attempts:
1. Having a clean and high-quality physical environment (this includes housing)
2. Having a sustainable urban ecosystem
3. Having a cohesive and strong society with mutual support from the people and the government
4. Creating everyone's participation in decisions that affect life, health and well-being
5. Provision of basic needs such as food, water, housing, income, safety, work for all citizens
6. Access to experiences and resources at a wide level for everyone
7. Having a living, innovative and dynamic urban economy
8. Encouraging the society to communicate with the cultural and biological heritage of itself and other ethnic groups
9. Having a minimum level of public health and medical services accessible to the public
10. Having a high health status and minimal diseases
11. Having a proper urban structure to apply the aforementioned features (Ziari et al., 2013)

Considering that awareness, information, encouragement and also the use of warning messages are the basic principles of cultural, health and social activities and also considering the social and cultural conditions of November 13th, publishing brochures and pamphlets. Various education in the field of health, cultural and social issues can be very useful and effective. The remarkable thing that is present in most of the brochures is the presentation of different messages in simple language and appropriate to the level of literacy and culture of the society. Therefore, carrying out such activities, which take place in various health, cultural and social fields, can be considered as a basic movement in the direction of creating a transformation in

the way of thinking of the people of the society, which can undoubtedly have a very significant impact on the success rate of the healthy city's projects. But, because the impact of such activities is qualitative and their effects appear in different ways in the long term, evaluating the success rate of these projects in terms of quantity and quality requires spending a long time and also appropriate facilities and wide (Massoumi, 2015). In the following, we will present a table in the form of a summary of the solutions used in different countries based on the idea of a healthy city. The studies conducted show that the actions taken in different cities in order to make the cities healthy are only limited to actions. It is not physical and includes other aspects of cities such as improving security, communication between different centers of cities, participation of cities with private sectors, government and citizens, management of diseases, etc., which show that a healthy city pays attention to health in all aspects of life. Also, in this section, we will create tables that show the relationship between the theories of the theorists of a healthy city, the indicators of a healthy city, and the solutions implemented in different cities of the world and Iran that we can use these tables to determine the indicators of the current research (Table 2).

By using the MAXQDA technique, all the main concepts related to the subject can be checked and evaluated, so the concepts that have the greatest number of repetitions have the ability to be converted into criteria and indicators (Table 3).

3. Result and Conclusion

Up to the comparative method in new and old urban fabrics and also literature review on it, the structural model must develop with vast dimensions and more precise indicators. According to the fourteen principles of a healthy city, which include, the principle of sustainable vitality, safety and security, economic productivity, cooperation, the access, balance, compatibility, dynamism (orderly development), identity, beauty, diversity, free time productivity, the closed principle of considering the city system as much as possible, the principle of feeling of belonging, and also according to the studies conducted from different definitions and based

on the viewpoint of theoreticians of the healthy city, it can be said that a healthy city is an urban in which ecological perspectives are combined with health perspectives and can be implemented by responding appropriately to the needs of its residents, so it can be said that based on the principle of sustainable livelihood, this city seeks to provide the needs of its residents, including providing shelter and proper nutrition and their mental and physical health, etc. Moreover, by improving security in social, economic and other dimensions and by increasing safety in physical and other dimensions of the lives of its residents, it creates security and safety in their physical and psychological dimensions. Also, based on the principle of economic productivity, by developing the economy and society's income and creating a balance between costs and performance in all fields, followed by an increase in the production power and purchasing power of the citizens, it can improve the economic situation of the city. In addition, based on the principle of cooperation, residents by supporting each other and the government's support in life affairs and participation in social, economic and urban activities, as well as increasing social ties, they improve the quality of life for themselves and others. Trust is created in citizens; it increases their sense of belonging to their place of residence. By creating a balance in all urban areas, it will facilitate the residents' use of all natural and unnatural potential facilities. Also, a healthy city seeks compatibility between the parts and elements of the city, which creates harmony in all urban affairs. And according to the dynamic principle of this city, considering all the economic, social, cultural, physical and sanitary dimensions in the cities, it can create favorability in the lives of the residents. By creating diversity in all areas of its citizens' lives, this city has given them the right to choose to live according to their interests and preferences. In a healthy city, the urban spaces are beautifully built to make its citizens feel happy, and by creating the necessary conditions and facilities, it helps the citizens to be productive in their free time. It causes citizens to engage in activities such as recreational, cultural, artistic, etc., that fill their free time in addition to daily work, employment, education,

Table 2. The relationship between the theories of the theorists of a healthy city, the indicators of a healthy city and the solutions implemented in different cities of the world and Iran.

Country	Indicator	Index	Theorist
Toronto-Canada	People and government participation	People's participation in urban planning Creating interest and desire among citizens in the matter of participation	Dehl, Hancock, Ashton, World Health Organization, Baron and Tesoro
	Security	Participation of people to provide their opinions to improve security	Heritage and Doris Leo
Liverpool - England	Presentation of strategic plans for the city of health		pug
Portland, Oregon, United States of America	Vitality	Creating a high-quality space in the city in order to increase vitality	Barton and Tesoro
	Urban growth with a plan Creating human-centered planning	Citizen participation in planning urban growth by creating groups to protect the city	Barton and Tesoro
Salzburg - Australia	Protection of the urban environment	Creating a green belt around the city Pedestrian, bicycle and public transportation priority over private transportation (cars) Walking downtown	Christopher J. Boone
	Physical reconstruction of the city	Reconstruction of the historical center of the city Architectural modifications on massive buildings	Barton and Tesoro
Copenhagen - Denmark	Focus on executive function	Communication of centers and organizations with citizens and public health departments	Haji Khani and Salehi Dazan (social relations in the city)
	Communication with researchers and the use of research carried out in health matters	Application of health-related research in urban planning.	
Shita Gang - Bangladesh	Improving the level of environmental health in cities	Solid waste management Encouraging residents to keep their surroundings clean Participation of citizens in healthy city programs	Christopher J. Boone
Lodz - Poland	Improving the health of citizens	The participation of various organizations such as organizations, universities, commercial companies, public health department in the matter of promoting the health of citizens Provision of citizen health programs by local public and private organizations	Dehl Hancock Ashton health-centered program of doctors Zarrabi Ghanbari Barton and Tsoro
	Promotion of environmental health	Reform of industries Balanced relationship between man and nature	Christopher J. Boone
China	Improving the health of citizens	Coverage and access to health services Investment in urban infrastructure Management of chronic diseases and mental disorders Access to preventive health services Education for health promotion	Leo Barton and Tesoro
	Integrating health with	Urban planning and design based on

	policies	health strategies	
	Participation	The participation of cities with public private sectors and citizens in urban health planning and management	Heritage and Doris Leo cash
	Promotion of interdepartmental activities	Creating motivation and continuity of inter-sectoral performance in the design, construction and management of healthy cities	
	Scientificization of health in cities	Increasing investment in order to develop new theories Partnership with universities and research institutes and private sectors to support research and education related to a healthy city.	
Turkmenistan	Road safety	Improvement of road rules for securing vehicles	Barton and Tesoro
Iran	Improving and improving the level of health	Destruction of Fatimieh town due to health problems Development of personal health and family health issues by creating a plan for health liaisons in Koi 13 Aban Information and education in the field of health by publishing brochures and educational pamphlets	Leo Barton and Tesoro
	Environmental Protection	Creating a sewage and surface water collection network Creation and reconstruction of green spaces in Koi 13 Aban	Christopher J. Boone
	Improving the cultural and social level	Reduction of inappropriate activities such as drug trafficking, criminality and corruption by destroying Fatemieh town on November 13 Holding training classes for the residents of the neighborhood to improve their skills and knowledge by creating a training center for health city headquarters Promotion of culture and expansion of education in various fields by establishing a healthy city counseling center Expanding cultural, educational and social activities by creating a culture house in this area Teaching appropriate and correct social and cultural behaviors, etc. in society, creating brochures at the same level of literacy and culture Society	Pug
	Vitality of urban parks	Renovation of flooring furniture and inappropriate view of Central Park, 13 November Creating a space for recreation and leisure for residents by designing and renovating Golgoun Park	Barton and Tesoro

Table 3. The most common indicators of a healthy city and the solutions implemented in MAXQDA method to generate the final indexes.

Code System	Document group	Document name	Code	Segment	Frequency
Indicators of a healthy city	Urban Management	Proper urban management	Political support for the realization of the criteria of a healthy city		2
			Acquaint residents with the indicators of a healthy city		3
			Management and leadership to realize the criteria of a healthy city		2
		Proper planning	Planning to realize the criteria of a healthy city in the city		1
			Presenting a program to promote the health of citizens in urban planning		1
	Economic	The economic situation	The amount of income of employees		2
			Dynamic and innovative urban economy		2
			High economic efficiency		2
		Employment	Employment rate	Unemployment rate among citizens	1
				Employment rate among citizens	1
			Economically active population		1
			Economically inactive population		1
		Protection of agricultural land			1
		Diversity in the economic structure	Diversity in economic activities		2
			The existence of suitable and equal job opportunities for citizens		2
	Sanitary	Improving the health of citizens	Health promotion in the city		2
			Participation of different city departments to improve the health level of cities		1
			Participation of citizens in improving the level of health		2
			Provide programs to promote health		1
		Protecting the health of citizens	physical health	Prevention and control of diseases among citizens	4
				The prevalence of infectious diseases	1
				Death rate	1
			Mental health	Having a sense of comfort and well-being in life	4
				Life expectancy	4
			The health of the physical environment	Sanitizing school buildings	1
				Sanitizing the workplace	1
				Sanitizing the structure of residential units	1
			Social health	Placement of citizens under social and health insurance coverage	3
				Residents have a suitable level of health	4
				Access to health services	3
				Number of hospitals	1
	Physically	The compatibility of the city's components with each other			1
		Sufficient housing for citizens			1
		Access	Access to urban spaces		2
			Access to green space		1
			Roads connecting the city with other cities		1
		Urban transport	Using all types of transportation	The use of bicycles by citizens	2
				Using a private car	1
				Use of public transportation	2
			Appropriate width of sidewalks		1
			There is smooth traffic in the city		1
		Urban land use	Fair distribution of recreational use		1
			Fair distribution of urban schools		1
			Fair distribution of green spaces in the city		4

			Fair distribution of cultural uses in the city		3
			Fair distribution of sports use in the city		1
			Creating commercial use in local streets to increase security		1
		Quality of urban spaces	Appropriate design of urban spaces	The design of the body of the spaces according to the type of use	1
				The willingness of citizens to walk in the city	2
				Not building tall buildings in narrow streets	1
			Use of appropriate materials	The uniformity of the facade of buildings in terms of materials	1
				The use of permeable materials in the flooring of spaces	1
			Urban furniture	The possibility of sitting and stopping in urban spaces	1
			Inclusiveness	Suitable sports facilities for all levels of society	1
				Using the space city by all sections of the society with any physical condition and age	2
			Making the necessary arrangements for citizens' leisure time		3
		The level of safety on footpaths	Flooring suitable for sidewalks		1
		Diversity in urban structure	Placing different users together		3
			Mixing native and modern architecture in urban views		3
			A variety of housing for all classes of society		1
	Visual beauty	Use of vegetation in the city			1
		A beautiful environment			4
	Environmental	Protection of the natural environment	The existence of pure nature		2
			Compatibility with nature		3
			Safety against natural disasters		1
	Clean living environment	Existence of a favorable waste collection and recycling system in the city			3
		Garbage separation			1
		Regular garbage collection			1
	ultural	City identity	The relationship between citizens and cultural heritage		4
			There is a connection with the history of the city		3
			The desire of citizens to participate in cultural activities		2
	Social	Social level	Diversity in social structure		1
			education		2
			The number of literate people in the city		2
	Social Performance	Using the maximum power of citizens			4
		Creating suitable conditions for the activities of citizens			1
	There is a sense of belonging to the city	Establishing an emotional bond between people and the city			3
		A sense of responsibility towards the city			1
	Security	Safe environment to live	Safety of life		4
			Security against unnatural events		1
			Security against natural disasters		1
			Death rate in public transport accidents		1
			Financial Security		1
			Psychological security		1
			Social Security		4
			Absence of social anomalies		1
			Crime rate in the city		1
			Protecting the interests of citizens		1
	The quality of life of citizens	The existence of public welfare			3
		Providing the basic needs of citizens			6

	Social relations	The presence of people in urban spaces			3
		The number of social interactions in urban spaces			1
		Access to news and information			2
		The number of citizens using the Internet			1
	Social participation in urban affairs	Enhancing the role of citizens in decision-making of urban affairs			2
		The level of women's participation in social activities			5
		Partnership between different parts of the city			9
		Cooperation of citizens with each other			2
		Celebrities support each other			13
		Citizens support each other to improve personal skills			3
	New fabric indicators	Cultural index	Holding cultural and religious ceremonies in the new context		1
		New fabric health index	Absence of disease outbreaks among the residents of the new fabric during the disease epidemic		1
			New Baft residents refer to nearby cities for treatment		3
			Lack of healthcare spaces in the new context		2
			Absence of a specialist doctor in the new context		1
		Economic index of the new context	Employment of women in the new context		2
			Employment of more residents in the industry sector in the new context		4
			The state of the average economy in the new context		4
		The social index of the new context	Social level	Residents with different social classes in the new context	1
				The youth of new Baft residents	1
			Housing	The number of households does not match with the dimensions of the houses	1
				Establishment of residential units by various factories for their employees	2
				The difference in the way of building houses in the new context	2
			Giving importance to the position of the family in the new context	Dependence between members of a family in the new context	2
				Willingness to live with family or close to it after marriage in a serious context	3
			Security in the new context	Having high security in the new context	3
				The possibility of women's movement in the late hours of the night in the new context	2
			Participation of Baft New residents in the development and progress of Nayin city	Citizens support each other in the new context	3
				Participation of citizens in the direction of construction and improvement of the new fabric	1
			A sense of responsibility in the new context	A sense of responsibility towards the maintenance of urban spaces in the new context	2
			Lack of recreational and leisure facilities in the new context		1
			Students stay in this context as a dormitory		1
		Physical index of new fabric	land use	There is a park for children to play	1
				The presence of office and commercial space under construction	1

				The difference in the quality of construction in different residential blocks in the new context	2
			Quality of urban spaces	Appropriate design of urban spaces	3
				Facade coordination of buildings in the new context	3
				The use of asphalt in the main roads in the new context	2
		Environmental index	Lack of green space in the new context		3
			Cleanliness of the environment in the new context		2
			Garbage collection at specified times by the municipality in the new context		1
			Use of reservoir for drinking water supply		1
			Residents of the new fabric refer to the old fabric for training		2
			The new fabric of the living quarters of industrial sector employees		3
		Cultural index of Nain's old fabric	Adherence of the inhabitants of the old context to religion	The prevalence of the tradition of endowment among the residents of the old context	1
				The cooperation of the residents of old Baft in the performance of religious ceremonies	1
				Holding religious ceremonies in the old context	2
		Environmental indicators of the old fabric of Nain	Water sources in the city of Nain	Providing drinking water with storage water in the old context	2
				Planting trees that need little water	1
				Economic limitation due to lack of water resources	1
				Water supply for agriculture from underground sources, springs and aqueducts	1
			Clean living environment		0
			Protection of the natural environment		0
		Social indicators of Nain old context	A sense of responsibility towards each other among the citizens of the old context	Support of the rich class from low-income people in the old context	1
				Neighbors supporting each other in matters of life in the old context	1
			social relations	The desire to do collective manual work in the old context	1
				Qaragiri Hosseinieh of each neighborhood in the center of the neighborhood and the gathering place of the residents	2
				Gathering of citizens in the public spaces of the city in the old context	1
		Social relations	The desire to do collective manual work in the old context		1
			Qaragiri Hosseinieh of each neighborhood in the center of the neighborhood and the gathering place of the residents		2
			Gathering of citizens in the public spaces of the city in the old context		1

		The quality of life of the residents of old Baft	Proportionality of the dimensions of the residential spaces with the social class of the residents		1
		Participation of residents in the development and progress of Nayin city	Participation of neighborhood residents in civil and social activities in the old context		1
		A sense of belonging to the old context among people who have migrated from it	The participation of immigrants from the old context in the decisions of that context		1
			The presence of people who migrated from the old context in it during ceremonies		1
		Giving importance to the position of the family in the old context	Grandparents living with their children and grandchildren in the same house		1
			Coexistence of members of a family after marriage in the old context		2
	Physical indicators of the old fabric of Nayn	Land use in the old context	Access to applications within the old context		0
			Use of green space		0
			Mixing of uses in the old context		0
		Quality of urban spaces	Compliance with hierarchy in urban spaces		0
			Matching the architecture with the climate in the old context		6
			Readability in the old fabric with the presence of elements as signs in the fabric		1
			Maintaining climatic comfort in the old context		0
			Using suitable urban furniture in any urban space		1
			Appropriate placement of urban furniture in the old context		1
			The use of canvas materials in the construction of buildings in the old context		1
		Appropriate design of urban spaces	The presence of symmetry in the facade of buildings in the old context		6
			Maintaining balance in the construction of urban spaces in the old context		1
			Mixing large and small seeds in a compact form in the old fabric		1
			Decorations in the architecture of spaces		0
			The geometric shape of the open spaces within the spaces in Nayn fabric	The rectangular shape of the neighborhood square in the old context	5
				The square shape of the courtyard of the mosque in Nayin fabric	3
			Appropriate design of urban spaces	Proportion of dimensions of public spaces with its function and location	1
				Coordination between the architecture of urban spaces with their function in the old context	1
				Suitable flooring in public spaces in the old context	2
				Construction of urban elements with a specific pattern in the old context	1
				Designing some urban spaces with an inhuman scale	1
				Designing urban spaces based on human scale	2
				The presence of at least one king's residence in the interior	1

			facade of the old-style Hosseiniyeh	
		Design of residential spaces	The existence of high porches to connect the spaces in the houses	2
			Creating a summer and winter atmosphere in residential units in Baft	2
			Having the geometric shape of the yard of residential units in the old context	1
		Communication network in the old context	Connecting the Hosseinieh to the main road with a roofed arch in the old context	1
			Access to other cities by roads around the city	1
			The organic shape of the streets in the context of Nain	1
		Diversity in the body of old fabric	Variation in the color and fabric of the surfaces of urban spaces in the old context	1
			The presence of diversity in the walls of movement paths	1
			Creating diversity in the external appearance of urban spaces with different architecture	1
			Diversity in movement paths	1
		Valuable historical spaces in the old context	The existence of historical and spectacular buildings with special architectures	1
			Ancient castles	1
			Preservation of valuable old buildings in the old context	1
			Restoration and reconstruction of valuable and historical buildings in the old context	1
		Maintaining pedestrian safety in the road network	Flooring suitable for sidewalks in the old context	4
	Economic indicators of old Nain context	Economic potential	Creation of mining industries due to the presence of mineral resources in Nayin	1
			Exporting Nayn products to other cities and countries	2
			An opportunity for the prosperity of the tourism industry	1
			Occupation of women in carpet weaving	1
			Supplying raw materials for handicrafts inside the fabric	1
		Employment in different jobs	Carpet weaving	1
			Employment in agriculture and animal husbandry	1
			Carpet weaving industry as an economic activity	1
			Tiling	1
			Pottery	1
			Bag weaving	1
			Commerce	1

etc. Therefore, according to the characteristics and conditions mentioned above, a healthy city can improve the health of citizens in all social, economic, cultural, sanitary and physical aspects, and improving their living conditions can also improve their physical and mental health. Quantitative criteria that can be divided into social, economic, environmental, physical and sanitary sectors include the following:

Social index: number of population, number of households below the poverty line, number of students in each class, proportion of population with university level of literacy, level of education of residents, number of literates, rate of crime and crimes, percentage of population with drinking water supply system, percentage of population with electricity service , the education rate per capita, the population over 65 years old, the participation rate of residents in urban planning, the number of cultural uses in the region, the number of meetings and socializing of residents with each other, the amount of education of residents to improve health, the amount of activities such as delinquency and trafficking, the amount of dependency to the place of residence, the degree of satisfaction with police performance to create security, the rate of car ownership.

Economic index: average personal income, female employment rate, male employment rate, unemployment rate, economically active population, inactive population, number of households below the poverty line, low-income families' access to housing, housing prices, type of housing ownership, feeling of satisfaction from job, percentage of homeless people.

Environmental index: number of days with good air quality, quality of drinking water, amount of use of private vehicles, amount of use of public vehicles, quality of public vehicles, amount of daily waste production, quality of garbage collection, surface water collection, the amount of communication between residents and nature, the amount of noise pollution in the area, the state of air quality in terms of dust and fine particles

Physical index: the number of green spaces, the number of green spaces with high facilities and environmental quality and desirability, the number of sports spaces, the type of transportation to reach the workplace, per capita bicycle route index, the quality of pedestrian infrastructure, the degree of proximity to local uses such as retail stores, quality of housing, city lighting rate, access to recreational and sports facilities, degree of desirability of access to green spaces and parks, facilities of public urban parks for disabled and elderly people, transit and transportation facilities for disabled and elderly people , the quality of historical spaces, the type of use of historical spaces.

Health index: the number of general practitioners, the number of medical centers, the number of hospital beds per 1000 people, adult mortality rate, child mortality rate, access to medical centers, vaccination coverage of children under 6 years old, low birth weight babies, the number of smokers, the amount of family diseases, the amount of physical activity, the management of the spread of infectious diseases.

And the considered qualitative indicators include: meeting the basic needs of citizens, creating partnerships between people and between people and the government in urban affairs, creating safety and security in the city, having a high level of culture among citizens, the existence of suitable economic conditions for citizens in the city. Creating suitable housing for all sections of society, reducing poverty in the city, creating social bonds (Table 4).

In order to plan for cities with a healthy city approach, then to identify the quantitative and qualitative indicators of a healthy city, it is necessary to identify the quantitative and qualitative indicators of the studied cities based on the indicators of a healthy city, and based on that, check the degree of proximity of the index to the indicators of a healthy city. In this research, we first investigated the quantitative and qualitative indicators of the a health city and in the next step, by identifying the quantitative and qualitative indicators of the old and new fabrics, it will be compared the urban fabrics based on the indicators of the healthy city , and based on that, the degree of enjoyment of each from these fabrics, we will measure the criteria of a healthy city, and as a result, we will determine the fabric that is better in terms of the criteria of a healthy city. The planning process is briefly outlined in the diagram below (Figure 1).

Table 4. Dimensions, indicators and indexes of structural model for healthy city comparative method

Dimensions	Component	Index
Social	Population	The number of populations
		Population over 65 years old
		Population over 65 years old
	Education	The proportion of the population that has a university level of literacy
		The level of education of residents
		The number of literates
		The amount of education per capita
		The number of staff training to promote health
	Safety-security	The amount of crime and crimes
		The number of activities such as crime and smuggling
		The degree of satisfaction with police performance to create security
	Participation and social links	Residents' participation in urban planning
		The number of meetings and socializing of residents with each other
	Access to municipal equipment	Percentage of population with drinking water supply system
		Percentage of population with electricity service
	Ownership	Car ownership rate
	Cultural background	The number of cultural uses in the region
	A sense of attachment	The degree of dependence on the place of residence
Economical	Employment	Average personal income
		Women's employment rate
		Male employment rate
		Unemployment rate
		Economically active population
		Inactive population
		Job satisfaction
	Housing	Access to housing for low-income families
		House price
		Type of housing ownership
	Poverty	The number of households below The poverty line
		The percentage of homeless people

|		
Environmental	Pollution	The number of days with good air quality
		The amount of daily waste production
		The amount of noise pollution in the area
		The state of air quality in terms of dust, fine particles
	Environmental	The extent of residents' connection with nature
	Water quality	Drinking water quality
	Urban equipment	Quality of public transport
		The quality of garbage collection
		Collect surface water
	Environmental Protection	The amount of use of personal vehicles
		The amount of use of public transport
Physical	Green infrastructure	The number of green spaces
		The number of green spaces with high facilities and environmental quality and desirability
	Transportation	Type of transportation to get to work
		Per capita bicycle route index
		Pedestrian infrastructure quality
		Proximity to local uses such as retail stores
	Access to urban spaces	Access to recreational and sports facilities
		The degree of desirability of access to green spaces and parks
		Access to sports facilities
	Features of urban spaces	The facilities of parks and public spaces for disabled and elderly people
		Facilities for the passage and transportation of disabled and elderly people
	Quality of urban spaces	The quality of housing
		The quality of historical spaces
	Security and safety of urban spaces	City lighting rate
Sanitary	Health Services	The number of general practitioners
		The number of medical centers
		The number of hospital beds per 1000 people
		Vaccination level coverage of children under 6 years old
	Birth and death	Adult mortality rate
		Child mortality rate
		Low birth weight babies
	Access to health services	Access to medical centers
		The number of smokers
	Health promotion	The amount of family diseases
		The amount of physical activity
		Management of infectious disease outbreaks
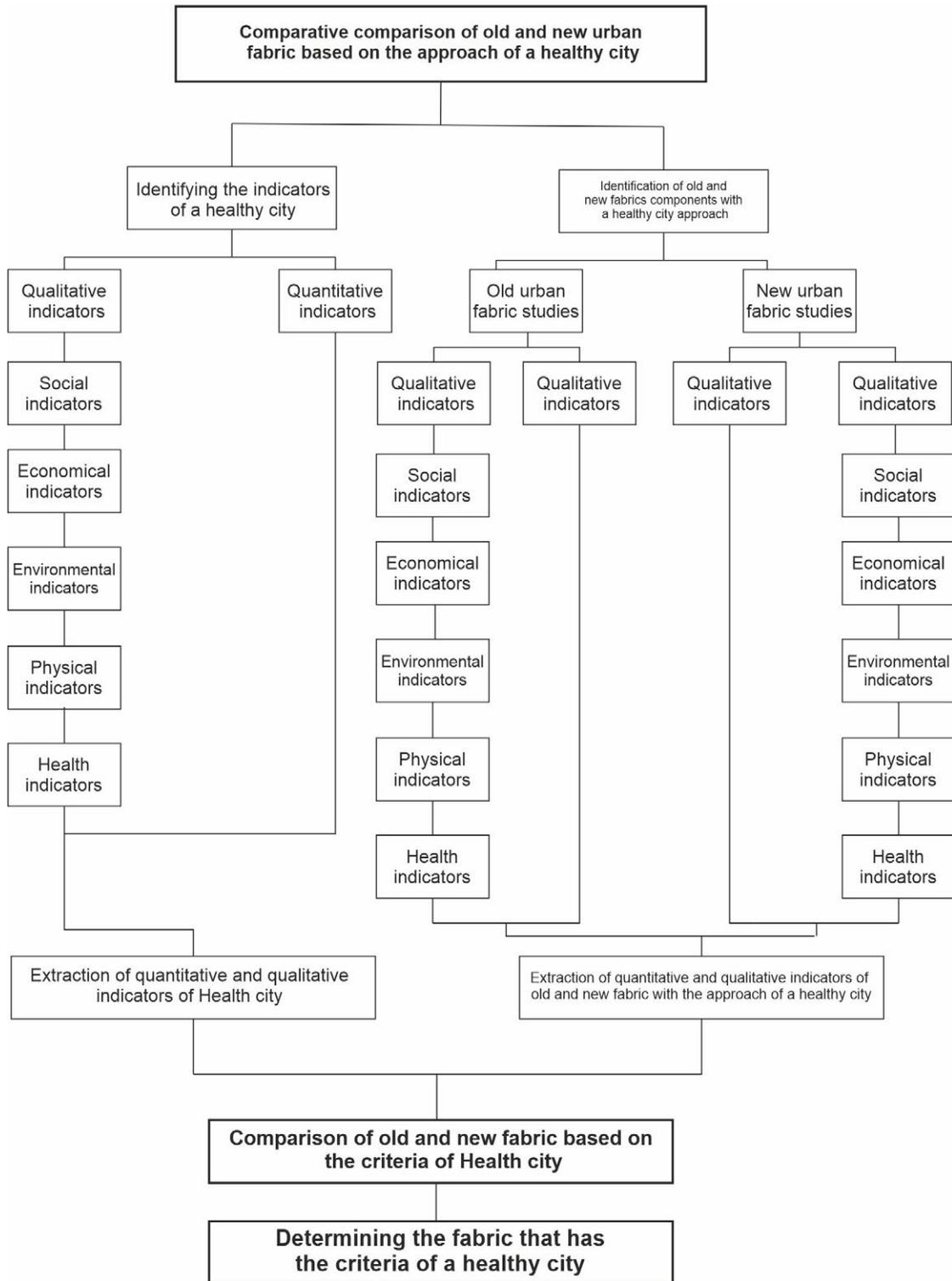
Figure 1: Structural model of comparative comparison of old and new urban fabric based on the approach of a healthy city

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