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Scoping Review to Investigate the Smart City in Iran

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Abstract:

Introduction: These days, people have turned to using new information tools in order to solve the problems of cities and also to improve the living standards of citizens due to the arrival of tremendous human progress in the field of information and the growing trend of urbanization in the world.

Objective: This study has been carried out with the aim of studying the process of research activities in the field of smart city indicators by domestic researchers in Iranian cities in order to focus on less worked topics by identifying the existing knowledge gap in this field.

Method: The present study is considered as a scoping review about the 6 main indicators of a smart city. 100 articles published in Iran between 2011 and 2022 were studied in order to search, evaluate and complete the databases of domestic articles.

Findings: According to the results of this study, the indicators of smart governance and smart mobility were among the active indicators, and the indicators of smart economy and smart people are less in the attention of researchers.

Results: In general, it can be concluded that a balanced attention to all smart city indicators is necessary to make cities smart, so it is necessary for researchers to focus on other dimensions that have received less attention, in order to have better planning for the future of this field.

Keywords: *smart city, smart governance, smart economy, smart people, smart life*.

Introduction and problem statement

Nowadays, half of human societies are settled in cities and it is predicted to reach 66% by 2050 (Ahvenniemi, 2017: 234). Much progress has been achieved in the field of urban characteristics such as technology, trade, government formation, resource consumption and quality of life due to the migration of most people to the center of big cities. Smart cities refer to a new style of a city that is designed to encourage healthy economic activities with the help of information and communication technology (ICT), while at the same time improving the quality of life and creating sustainable growth. The term smart city is associated with several definitions as a paradigm in global urban development. Smart city is considered as an integrated, innovative and sustainable approach in which information and communication technology as a powerful tool helps to improve the quality of life of citizens, economic growth, social justice and sustainable environment (Ahvenniemi, et al., 2017).

Also, Ojo et al consider smart cities as an innovative urban effort to use physical and social infrastructure for economic reconstruction, social cohesion and infrastructure management, also the

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authors define smart cities as urban innovation that includes innovation and technology, organization and policy-making (Ojo et al., 2015: 12). In another definition, Nam and Pardo defined the smart city as an organic connection between technical, human and organizational components (Nam and Pardo, 2011: 283). While the smart city includes three important aspects of institutional factors, technological factors and human factors, the integrated integration of these three factors leads to shape six main components of smart city, including smart economy, smart people, smart governance, smart life, and smart dynamics. and smart environment (Afzali Neniz, 2019: 17-18). Nowadays, more than 100 smart city projects are underway worldwide. There is a difference between the amount and scale of information and communication technology facilities from one project to another.

The smart city has entered the main fields of energy, public facilities, industry and environmental sustainability. Many countries of the world have turned to the solutions of the virtual world to solve their urban development problems, especially problems that cannot be solved in the conventional professional scientific system. It is possible to change the face of some urban issues in the approaches of the virtual world and reduce the nature of its problem-solving. Many countries in the world have taken effective steps in the field of investment to build smart cities and virtual communities. For example, Dubai acquires telecommunications infrastructure at a cost of $10 million to transmit 8 megabytes per second of data. Although many researchers in Iran have paid a lot of attention to the subject of the smart city and its 6 main components, but by studying various articles, it seems that most of the articles worked on the novelty of the subject have generally dealt with the dimension of the smart city theory and recounted the definitions. and the existing theories in this field, and examining the 6 main components of a smart city separately and professionally has not been considered equally in the researches; In this way, some components are more and more frequently examined and some other components are neglected, and it is still necessary to be examined more, including the components related to social and economic issues in the field of smart cities.

As a result, the investigation of the components of interest in various studies by internal researchers is the main purpose of the present scoping review study, and in the next step, after realizing the existing knowledge gap in this field, other components that are somehow less have been the focus of attention or have not been included in the circle of attention at all, they have been placed in the center of gravity to achieve better planning for the future of this field and research. In this regard, the present study aims to answer the questions "What is the trend of research activities in the field of smart city indicators in Iranian cities?" and "How many indicators and which dimensions of smart city indicators are more prominent in every study".

Theoretical Foundations

The idea of a smart city was an unknown until the mid-1980s when the Japanese created the Science City (Kansai) in their country, and the Australians built a multi-functional city in the late 1980s in Adelaide. This idea gained special importance (Ahmadi, 2019: 4) from the 1980-1990s, when computers and the Internet were used on a large scale in urban life. Therefore, the term smart city and its roots should be traced back to the smart growth movement, which arose in the late 1980s and early 1990s, and supported new urban planning policies. The term smart city was used for the first time about Brisbane, Australia and Blacksburg in the United States; where information and communication technology supports social participation, reducing the digital divide and access to services and information. A city that takes citizens to a two-dimensional world from the world of today's traditional cities, which is the Internet world, the achievement of new technology in information and communication. A smart city is a 24-hour city where city affairs are going on all day and night.

Providing service with high speed and efficiency is envisioned in the area of the city, at the same time as reducing costs, traffic and pollution, etc. A city with remote working, remote shopping, remote banking, remote education and treatment are practical examples and examples of activities that, while providing more freedom for people's time and urban spaces, which transform the existing systems, the overall unit of the city and public areas. In general, in the concept of a smart city, modern information and communication technology (ICT) is used in an intelligent way to create a sustainable urban

environment and improve the quality of life (Collatta and Pau, 2022; quoted by Hosseini et al., 1401: 83).

Major approaches in the sociology of technology can be divided into three general categories. There are a group of theories that can somehow be placed under the "technological determinism" approach. The other group refers to the theories that gather under the "Social Shaping of Technology" approach, and the third group refer to theories that have a synthetic aspect, and emphasize interaction with the mutual relationship between technology and society (Tavakol, 25:2022) In the first category, that is, technological determinism, the discussion of the evolution and ontology of technology is not discussed, instead, in the theories of this category, the emphasis is on the social effects of technology.

In other words, social changes (including economic, cultural and political) occur following technological changes. Among the common people, the general public, and even many properties, this is an established idea in two centuries and even in recent decades, that technology has changed life, society, people and individuals, and there are many examples that express this way of thinking among people. For example, the computer has changed the minds and thoughts of children, the Internet has overshadowed private relationships, destroyed communication across borders, television has manipulated public opinion, even subjugated superior human technologies and the power of leaders... And most importantly, this general trend of impacting and subverting technology is inevitable and irresistible. The second category of theories of the sociology of technology are focused on the presence of social parameters in the shaping technologies, their development, and also in their application.

The two main approaches in this category are: a) those who study and examine various social parameters in the emergence, shaping and development of technology, and b) those who focus on the effects, results and consequences of technology on society and its sectors, also on relationships and institutions and its structures (Tavakol, 28:2022). One of the most famous theories included in the first approach is the social construction of technology (also referred to as SCOT), which believes that tools, technologies, and artifacts are socially constructed or socially shaped. Tools and technologies are the result of people's cooperation, using concepts, techniques, and achievements from others in the past and present, and adding new activities and manipulations. According to this explanation, from SCOT's point of view, both physical artifacts and social relations and parameters of producers, owners and consumers of technology are part of the technological system. But the parameters affecting technology are not all affected by political and military issues or negative and critical issues. Let us give an example from a different field - the field of culture. In the recent discussions of technology, technology transfer and technology development, one is the discussion of cultural convergence. If a new technology questions cultural values and norms, or negates and stimulates them, it can face resistance or be rejected. Especially, if the society in which this technology is proposed has a stable culture. Like Japan, which has a complex and advanced medical system, very similar to the Western medical system, but organ transplants are both considered undesirable and rare in Japan, unlike America and Europe. Resistance to this type of treatment is caused by certain beliefs in Japanese culture about the dead body and the integrity of the human person. Human death is a complete and complete reality and not the death of an organ by organ, for example, the heart is dead but the brain is still alive. A person is either dead or alive, and accordingly, all his organs. As a result, it is not acceptable to transplant an organ, for example, taking the heart or brain of a person who has just died in an accident, and transplanting it to a living person. Like Japan, which has a complex and advanced medical system, very similar to the Western medical system, but organ transplants are both considered undesirable and rare in Japan, unlike America and Europe. Resistance to this type of treatment is caused by certain beliefs in Japanese culture about the dead body and the integrity of the human person. Human death is a complete and complete reality and not the death of an organ by organ, for example, the heart is dead but the brain is still alive. A person is either dead or alive, and accordingly, all his organs. As a result, it is not acceptable to transplant an organ, for example, taking the heart or brain of a person who has just died in an accident, and transplanting it to a living person. The story of the dam and dam construction also had a sociological analysis in our own country, Iran, and although less has been done, more is needed to make the routes and plans more comprehensive. Although the

dams have brought many water resources under management in one point of view, they have disrupted the livelihood organization, collective structure, identity and cultural survival of the villagers and communities living in the areas under the dam and adjacent to the dam, and sometimes has caused destruction. It is that it evokes the concept of construction, construction and settlement not for everyone and at some times for many who have been involved, it has been associated with destruction and destruction. Both for humans, society, and the environment. As a result, as the commentators say, "the social formation of technology". In order for technology to be accepted, it must "work", and the point is "for whom should it work?" and "in what sense should it work?" and "at what price should it work?" and... and the point is that SCOT says that the "working of technology" is partly (but not entirely) explained and justified by its technical function, and therefore must be explained by social factors. The above discussions lead us to another issue about technology, and that is the issue of neutrality or non- neutrality of technology. For example, a knife cuts bread and kills a person, and a gun kills both a thief and a good person, and a wall is a protection to preserve privacy, and a barrier to keep people's eyes away from a thousand debaucheries. And there is a lot of talk about its pros and cons, and it has a philosophical basis. The third category of theories in the sociology of technology includes theories that try to reduce or reconcile the duality/contradiction/tension between technology and society and see them together.

In this collection, two major efforts are the activist theory - the ANT network (actually the network of activists), and the hybrid theories of people like Donna Haraway, in their technological opinions the interaction of technology on society and society on technology is at the top of the agenda, but it is controversial how much they have been able to achieve this goal successfully in processing the theory, and introduce and justify the mechanisms of action. As it is evident from the sociological analyzes above, there are different approaches regarding the introduction of technology into human life, but what should not be forgotten are the problems of living in cities, which has made us need the introduction of technology whether we like it or not, and the smart city is considered as one of the platforms for creating technology in urban spaces.

Alvin Toffler's point of view in the book "Future Shock and Third Wave" insists on the short duration of contemporary technological developments and on the difference of the future from the past, and he pays attention to the power of thought and the superiority of information and the period of emergence of new social conditions. In general, the third wave is based on the concept that human history has gone through two revolutions: the agricultural revolution and the industrial revolution, and is currently on the threshold of its third experience, the electronic revolution. Also, William Mitchell is one of the thinkers who follows the presence of ICT in cities with his great interest in this field and the result is a book titled "City of Bits". He emphasizes the concept of distance and space by addressing the elements of modern technology and its consequences in life, and believes that the prevalence of modern virtual technologies allows us to connect with others wherever possible and shape new types of electronic communities based on interest and intimacy to a text based on random geographical placement.

The concept of a smart city, like other concepts, has its own principles, the main principles of a smart city can be categorized as follows:

Smart economy: Smart economy refers to an economy based on smart and technology-based solutions to increase the gross production of cities and use opportunities for their economic growth and self-sufficiency (Cheng et al., 2020 quoted by Hosseini et al., 2022: 84). Also, smart economy is related to cities with smart industries, especially in the application of information and communication technology in their manufacturing and production processes. (Nasution et al., 2020, Mora et al., 2020, Burns et al., 2021) Innovation, productivity and entrepreneurship are important factors in reaching a smart economy. Movement in the direction of these factors can cause the city's dynamism, attractiveness and economic advancement (Wong et al., 2021; quoted by Hosseini et al., 2022: 84).

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Smart governance: A strong relationship between the people and the government and other stakeholders is formed in the smart city through online and internet-based systems, and the possibility of people and stakeholders interacting with the government and with each other has increased to a great extent, and as a result, the level of beneficiaries' participation in the city will increase. The use of technology and intelligence increases the responsiveness, speed, transparency, and effectiveness of government policies and programs, and as a result, it can greatly help the government achieve its goals (Mo et al., 2022; quoted by Hosseini et al., 2022 : 84). In addition, it is often related to the expansion of innovative technologies, such as e-democracy or e-government. (Li et al., 2020, Batchelor & Schnabe, 2020, Althunibat et al., 2021, Ma, 2021).

Smart environment: Smart environment refers to the use of new technologies to preserve and protect the environment. The purpose of creating a smart environment is to create appropriate mechanisms to use energy, water and reduce pollution in the living environment. The smart environment is a concept that includes the possibility of using advanced technologies for urban environments, which results in an increase in the quality of life for citizens, and of course creates value-added services for both the government and citizens (Keeler and Bernstein, 2021; quoted by Hosseini et al., 2022: 84). The main axes of the smart environment include: environmental sustainability, reducing energy consumption with the help of technology and technology, recycling solutions, using renewable energy, architectural design in interaction with the environment and reducing environmental pollution.

Smart transportation: The optimal use of existing facilities and modern technologies is one of the goals of planners in modern traffic management systems. In this regard, one of the ultimate goals of traffic management systems is to increase the efficiency of the network and also increase the safety of vehicles and people and reduce travel time. In order to achieve the above goal, the transportation network needs efficient systems to serve the transportation sector and, on the other hand, proper management of these systems (Jeong et al., 2021; quoted by Hosseini et al., 2022: 84). Also, the existing infrastructure must support the ability of all citizens to process and share information instantly from anywhere in the city (Yang et al., 2021: Paiva et al., 2021, Ivus & Taillon, 2021 Rodrigo-Salazar et al., 2021).

Some of the most important advantages of using the intelligent transportation system include reducing traffic congestion, increasing safety levels, saving time, reducing fuel consumption, and improving service levels, and some of the significant devices of this system include monitoring and recording violations systems, weather information system, driver warning system and vehicle information system and the ease of quick and timely law enforcement by the police (Tao et al., 2021; quoted by Hosseini et al., 2022: 84).

Smart people: The presence of smart people is the element that distinguishes a digital city from a smart city. Smart people are defined based on their skill and level of education. The quality of social interactions such as integration, collective life and the ability to communicate with the outside world are examples of intelligent people.

Smart life: Talking about smart life refers to bringing together different aspects that greatly help to improve the quality of life of citizens; including: culture, health, safety, housing, tourism, etc. It is obvious that the interaction of all the important components mentioned in a smart way or a smart network leads to the realization of part of the main goals of the smart network, a more harmonious, more satisfying life and More complete, some of the most important benefits of this interaction are: responding to demand, effective feedback and energy exchange, increasing the participation of

interested groups and finally making urban management more efficient and increasing the level of citizens' well-being (Eni et al., 2021; quoted From Hosseini et al., 2021: 85).

Research method

This study is considered as a secondary and review study and has been done using the scoping review method. The scoping review is structured and is done using a systematic search method. Arksey and O'Malley protocol was used for scope review in this study, which includes six steps of identifying the research question, identifying relevant studies, selecting studies, drawing data, collecting, summarizing and reporting the results and optional consultation about the results. The research questions are: "What is the trend of research activities in the field of smart city indicators in Iranian cities?" " and "How many indicators and which aspects of the smart city indicators are most prominent in each study? ".

The research was focused on Persian studies in Iran from 1390 to 1401. At this stage, in order to extract data, from the keywords "smart city", "smart governance", "smart economy", "smart environment", "smart transportation", "smart people" and "smart life" were selected, then with these keywords, the database of SID, NOORMAGS, MAGIRAN and CIVILICA were searched. In order to determine the compatibility of the articles with the research topic, first the title and then the abstract of the articles were examined, and after the approval of the article, all the texts of the articles were studied by the researcher in terms of the place of implementation, the year of implementation and the topic.

Determining the criteria for selecting articles to enter the research is required. In the stage of selecting studies, determining the criteria for entering and exiting studies into the research is one of the features of a systematic review that gives it special credibility. The criteria for selecting articles to be included in the research include: 1- Articles that were published in Persian in the period of 2011 to 2022 in the country 2- Smart or one of the six main components of a smart city, one of the words listed as The title or keywords of the study conducted 3- The study conducted is among published scientific-research articles 4- One of the authors must be an expert in the field of humanities or interdisciplinary field 5- And finally, its full text is easily be available.

The exclusion criteria for excluding articles from the study include the following: 1- Articles that have been published before the period of 2011 to 2022 inside the country 2- The topic of the studies is not clear and specific about the smart city and the six main components of the smart city 3- The study conducted has been among short reports and letters, case studies, Opinion article, book reviews and conference articles. 4- And finally, the articles whose full text was not available. The data extraction form, which included sections such as: authors' profile and year of publication, type of research, purpose of the study, type of index and criterion under study and results, was used to draw the data.

After completing this form, the results obtained from the review of the articles were analyzed, collected, summarized and finally reported. Based on this, 304 articles related to the smart city and its 6 main components were obtained. In the second stage, 61 duplicate articles were removed, then the abstracts of 243 articles were reviewed by two team members, and in case of disagreement, they were referred to a third person knowledgeable about the research topic, and based on the exclusion criteria, 143 unrelated articles Others were also removed, and finally 100 eligible articles were recognized and included in the present study.

Removal of irrelevant articles through exclusion criteria.

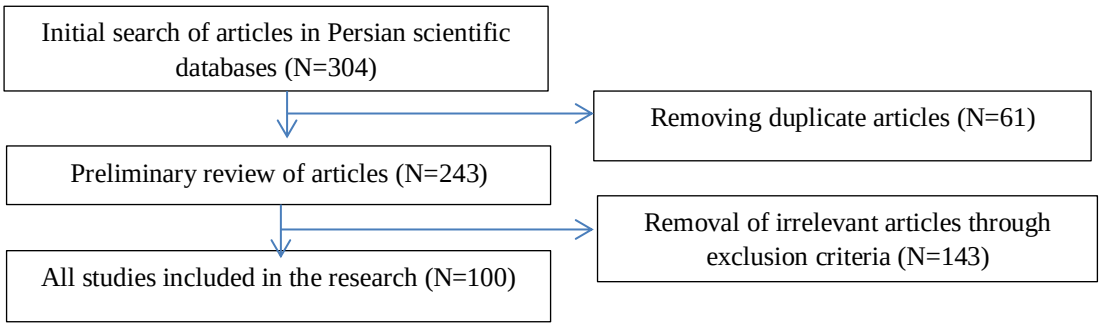

Diagram 1. Branch diagram (flowchart) of article search

Findings

100 articles among the reviewed articles were included in the study and analyzed. All articles were original scientific-research studies. 53 articles were done by quantitative method (53%), 30 articles by qualitative method (30%), 17 articles by combined method (17%). 10 studies (10%) were conducted in Tehran, 6 studies (6%) in Urmia, 5 studies in each of the cities of Zahedan (5%), Shiraz (5%), Semnan (5%), Tabriz (5%), 4 studies in each of the cities of Kerman (4%), Yazd (4%), Ahvaz (4%) and 22 studies (22%) in other cities. The rest of the studies did not choose a specific city as a sample. The type of study in most researches (47 cases) was descriptive-analytical (47%). The data collection method in 13 studies was interview (13%), in 17 studies, questionnaire (17%), in 40 studies, combined method (interview and questionnaire) (40%), in 10 studies, documentary and library method. (10%), and other methods were used in 20 studies (20%). Among the 100 studies between the years 2011 and 2022, 32 articles were related to the year 2022, 22 articles related to the year 2021, 17 articles related to the year 2020 and 29 articles related to the years 2022 to 2019. According to the inclusion criteria, there were no articles which was published in 2011 and 2012. In general, the trend of the years examined in this research indicates that more attention has been paid to the issue of smart cities in recent years.

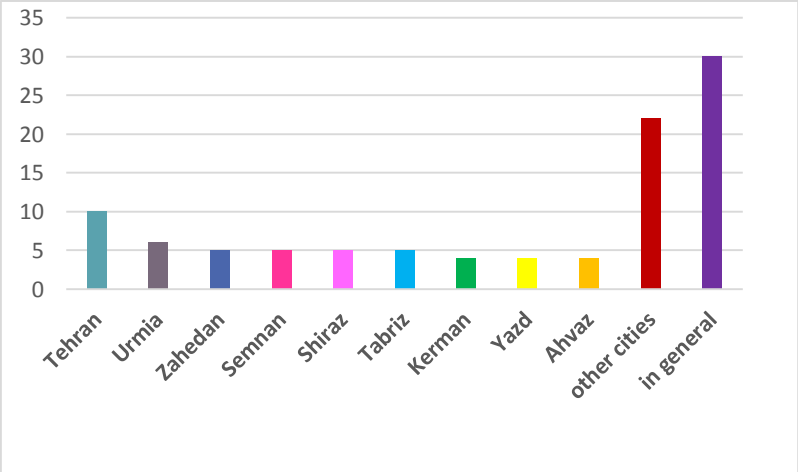

Diagram 2- The diagram of the review of articles in the cities of Iran

Table 1: Partial methods in the research

Abundance	Method	No
13	interview	**1**
17	questionnaire	**2**
40	Interview and questionnaire	**3**
10	Documentation and library	**4**
20	Other methods	**5**
100	total	**6**

Table 2: Main research methods

Abundance	Method	No
53	Quantitative	**1**
30	Qualitative	**2**
17	Hybrid	**3**
100	Total	**4**

Table 3: Smart city indicators

Abundance	Indicators	No
14	Smart governance	**1**
13	Smart mobility	**2**
5	Smart environment	**3**
2	Smart economy	**4**
5	Smart life	**5**
3	smart people	**6**
58	hybrid	**7**
100	total	**8**

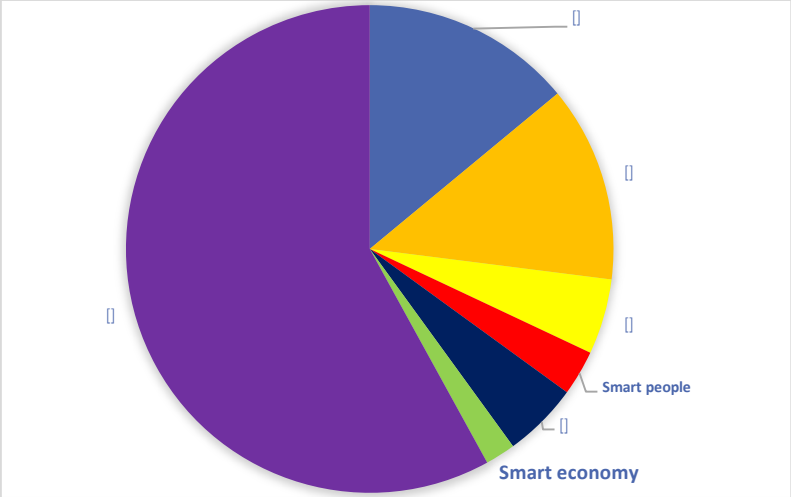

Chart 3: Smart city indicators

Table 4: Number of indicators in articles

Abundance	Indicators	No
40	One indicator	**1**
6	Two indicators	**2**
7	Three indicators	**3**
3	Four indicators	
5	Five indicators	**5**
39	Six indicators	**6**
100	Total	**7**

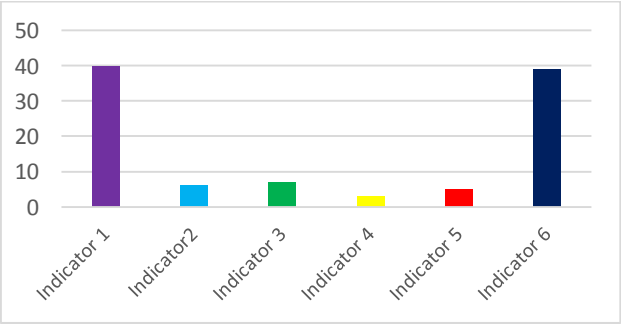

Chart 4: Number of indicators in articles

Some topics have received more attention than others, smart environment with 5 articles and smart life with 5 articles are in the next ranks. After them, the two indicators of smart economy with 3 articles and smart people with 2 articles are ranked fifth and sixth, and as it is known, a small percentage of studies have addressed them, and they have not been given much attention. Finally, 58 articles included in this study, in their research, examined several indicators together and in a combined manner, and allocated a significant percentage to themselves.

According to the table and graph 4, 40 studies (40%) discussed one smart city index, 6 studies (6%) two smart city indicators, 7 studies (7%) three smart city indicators, 3 studies (3%) four smart city indicators, 5 studies (5%) five smart city indicators and 39 studies (39%) six smart city indicators.

Which criteria of smart city indicators have been studied more?

Smart City

According to the research results, more than half of the articles on the topic of the smart city have examined all 6 components due to its novelty and the importance of a comprehensive look at this issue (Hassanabadi et al., 2021; Saif Aldini et al., 2013; Raushi et al. colleagues, 2017; Alwandi and Shams, 2019 and Zainali Azim, 2018; Moradi, 2018; Pourahmad et al., 2017; Alwandi et al., 2019; Mohammadi et al., 2019; Rahnama et al., 2019; Rabbani Arshad et al., 2019; Ismailzadeh et al., 2019; Afzali Neniz, 2018; Akhwan, 2022; Leradran Khanian, 2022; Shokri Ghafarii et al., 2021; Tajri et al., 2021; Farshid et al., 2021; Daneshvar et al., 2021; Azadbakht, 2022; Heydari et al., 2021; Heydari et al., 2021; Sadeghi, 2022; Shams Najafi, 2022; Abbas Shahir et al., 2021; Moqtadari Esfahani, 2020; Mousavi et al., 2020; Jamshid Zahi et al., 2022; Salehi Panahi et al. 2023; Shokri Ghafari et al. This is that most of these researches have examined the six indicators of the smart city in different cities of Iran, and have measured the feasibility and status of each indicator in that city from the point of view of citizens, city managers, elites, etc. using arious quantitative, qualitative or combined methods.

According to the findings of the articles, despite the extensive literature on the concept of smart city, there is still no clear and clear general understanding in this regard, and researchers from different scientific fields have proposed various contents. (Pourahmad et al., 2017). Also, a new concept of smart city is presented from both experimental and conceptual perspectives, the introduction and transformation process of urban environments towards the spread of all-round intelligence, while identifying and examining relevant and effective new concepts so that it can be used as a pioneer and the basis of designs and studies for the transformation of Iranian cities to smart cities (Moqtadari Esfahani, 2019).

The results of the investigations show that the existing platforms in the smart projects of the world's cities have disadvantages, and lead us to develop a new reference platform (Afzali Naniz, 2017) which can be used effectively and abundantly to better realize the smart city indicators, the information and communication technology infrastructures (Khaleqi et al., 2001; Ehsanifard, 2011; Sajjadian et al., 2011; Shafii Nikabadi and Shambiati, 2010; Rezaizadeh Mahabadi, 2018; Rakhshani Nesab et al., 2015; Yazdani et al., 1400; Khodadadai et al., 2015).

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Also, the 3 main factors in creating a smart city are: policy management (institutional factors), human resources and social capital (human factors), and information and communication technology (technological factors) (Roustaei et al., 2017). According to the results of the research, the components of the smart city are: 1- Information technology 2- Dynamic economy 3- Quality of life 4- Smart governance 5- Smart environment 6- Smart security 7- Smart transportation. According to this research, urban management specialists can help by strengthening these components to establish and expand smart cities (Akhavan, 2022).

According to other results, the components of altruism, work conscience, chivalry, socio-political behavior, religious and national teachings-based behavior, environment, sustainable development and finally, smart governance with their indicators, dimensions, components and indicators Citizenship education has been accepted in the management of future smart cities in municipalities (Akhvan et al., 2022).

Also, the results show that smart urban infrastructures and smart governance are considered as the two basic elements of the model that have the greatest impact in creating a smart city based on sustainable development, in this way, the level of influence on the next levels is reduced, and the variables at the same level have interaction. are mutually exclusive. These factors by affecting the smartness of transportation and technology-based smart businesses help the smart economy and smart environment to achieve sustainable urban development through smart structures and smart people, and sustainable urban development ends in smart city (Shams Najafi, 2022)

Finally, it can be said that the smart city does not have a significant direct impact on urban vandalism, but it has an indirect and significant impact on urban vandalism through the happy city and social justice. Also, a smart city has a direct and significant effect on a happy city and social justice (Mousavi et al., 2019).

Smart governance

Smart governance as "political and active participation, citizen services and smart use of electronic government" (Gifinger, 2007; quoted by Hosseini et al., 1959: 1400) have addressed this dimension in studies (Hosseini et al., 2018; Afzali Neniz et al, 2019; Khamjani et al., 2021; Balochi et al., 2021; Hashemi et al., 2020; Ahmadi Nohadani et al., 2020; Sajjadian et al., 2022; Ziyari et al., 2022; Noorabad et al., 2022; Raushit et al. 2022; Mohammadi Dah Cheshme et al., 2022; Amin Nejad et al., 2019).

In the articles related to this index, the investigated criteria include: smart management, cyber security, transparency, motivation and participation, electronic municipality, modern government services, political vision and strategy, institutional ability, intelligent decision making, the power of organizational actors, smart infrastructures, electronic government, availability of information and communication technology, public and social services, fight against corruption and crimes, government performance, participation in elections, administrative officials, participation in decision making, public and social services, transparent governance.

According to the findings of some articles, the following items gained the most points in reaching a forward-looking smart urban governance model: direct citizenship education, designing opportunities for public participation, formulating local policies, integrated urban management, creating a financial model for appropriate budget allocation, development of infrastructure for data-access network relationship, encouraging investors by providing profitable licenses, creating open data portals for freeing data and information, establishing strong laws to protect the privacy of individuals and

organizations, providing services online and eliminating bureaucracy and detailed planning of the smart government at the national level (Ziyari et al., 2022).

It is necessary to prepare software and hardware infrastructures, form a database, continue to use innovation in related organizations and institutions, exchange data and information among all stakeholders, etc (Hosseini et al., 2018). Also, according to the results and findings, eight internal variables influence each other, including: transparency, accountability, participation, effectiveness, consensus, legality, accountability, justice; on three external variables: human factors, social capital of management and politics, technology factors. (Roustaei et al., 2022).

Three threats "legislative challenge", "lack of secure communication" and "insecure API and protocols" were determined as the most key threats (Sadighi et al., 2022). Also, according to the results, although many countries in the world have taken steps towards adopting the smart city paradigm in order to improve the efficiency and accountability of metropolitan management, Iran still has not been able to choose and implement this metropolitan management paradigm, even in the capital, which is its most important metropolis (Hashmi et al., 2019).

Smart mobility

Smart mobility as "Intelligentization of transportation and communication system" was highlighted in more studies than other indicators (Farji et al., 2019; Eskandari Sani et al., 2017; Kavousi and Mohammadi, 2014; Baradaran et al., 2019; Khaleghi et al. 1401; Parhizgar, 1401; Lotfi et al., 2017; Ahmadi et al., 2019; Tahmasabi et al., 2022; Kaveh et al., 2022).

The criteria examined in the articles related to this index include: local access, national and international access, availability of information and communication technology infrastructure, sustainable, modern and safe transportation systems, public parking lots, intelligent transportation systems, transportation infrastructure, traffic-related problems, pedestrian path, bicycle path, use of affordable cars, the amount of Internet access in public spaces, intelligent monitoring.

According to the results of some articles, walking was identified as the best option. Walking and bicycling are non-motorized smart transportation methods, which have been assigned the highest points in this research. The use of buses, minibuses and taxis as public and semi-public intelligent transportation, and ranked next and the lowest points are also assigned to personal motorized intelligent transportation means the use of private cars and motorcycles (Kaveh et al, 2022).

Some of the most important topics investigated in this dimension are the analysis of vehicle speed monitoring and controlling process, the analysis of the monitoring process of the vehicle entering and moving in the odd-even traffic areas, the design of the vehicle monitoring process during the technical failure of the car, and smart informing to the emergency center, smart system, vehicle monitoring and notification, and sending text messages to the owner and the police force during and after theft to prevent and locate stolen cars (Baradaran et al., 2015). According to the results, some of the important challenges in this dimension include the lack of necessary infrastructure in the ITS industry, the inapplicability of science production, and the main obstacles to the cooperation of the industry and the university in the direction of developing smart urban transportation infrastructure (Tahmasebi et al., 2022). Also, the coordination strategy of all government organizations and bodies regarding the improvement of public infrastructure and the development of intelligent transportation systems is a priority (Ahmadi et al., 2018).

Smart life

There are a number of documents in the field of smart living entitled "Helping to improve the quality of life of citizens by gathering different aspects of life" (Keshavarz Turk and Qolizadeh, 2014; Mohammadi et al., 2016; Rashki and Arab Anani, 2019). As it is known, this dimension has not been investigated separately in the articles, and it has been investigated in general in the topic of smart city.

The criteria examined in the articles related to this index include: cultural equipment, health conditions, personal and social security, housing quality, educational facilities, tourist attractions, social cohesion, recreational facilities, privacy, smart tourism, smart school, health system quality, satisfaction with the educational system, quality of life, life expectancy, health related facilities per capita, health personnel per capita, social cohesion and unity.

According to the results of one of the articles, the poverty rate index and the preparedness for poverty index (both subsets of the intelligent life component); employment rate index and unemployment rate index (both subsets of the smart economy component) (Afzali, 2017)

Smart environment

The smart environment (Goharkhah, 2021; Khawarzmi et al., 2022; Rezaizadeh Mahabadi, 2018; Ansari et al., 2016; has been investigated in articles entitled "Technology of using clean energies" (Gifinger, 2007; quoted From Hosseini et al., 2021).

Some criteria examined in the articles related to this index are: the attractiveness of the natural environment, pollution, environmental protection, sustainable resource management, smart and renewable energy, environmental effects, dust, environmental pollution, natural resources, buildings Smart and green, sustainable development, smart lighting, natural attraction, percentage of covered area for public vehicles, waste separation, water and sewage facilities, sanitary systems and treatment plants, light pollution, green space, worn texture and park area.

According to the results of some articles, it is necessary to use information technology and science in cities and start an electronic city and at the same time create a sustainable city. It is inevitable to move towards sustainable smart cities due to the increase in global population and limited resources and changing the structure of relationships between people (Rezaizadeh Mahabadi, 2018). Also, some of the important results of this research include the management of electricity consumption, heating system, ventilation and air circulation, reducing water consumption, ensuring the security of the building and the neighborhood, health monitoring, managing critical events in the building and automation of household appliances (Ansari et al., 2016).), as well as the dimensions of waste management, water management, integrated environmental management, urban improvement, culture and identity, smart building, wastewater management and green electricity development are of great importance in this index, and the culture and identity have a special place in the maintenance of smart environment by citizens (Khwarizmi et al., 2022). Also, the use of ICT in environmental protection and the use of ICT to solve environmental pollution in management were placed at a high level of importance among the criteria. (Sajadian et al., 2018).

Smart economy

Smart economy (Soltaninejad et al., 2019; Yazdani et al., 2021; Farjoud et al., 2014) is defined as "An economy based on smart strategies to increase the gross production of cities" and "using opportunities for economic growth and self-sufficiency." (Jifinger, 2007; quoted by Hosseini et al., 2021: 1338).

The criteria examined in the articles related to this index include: spirit of creativity and innovation, entrepreneurship, economic and commercial image, production, workforce flexibility, international acceptability, ability to change, smart business, dynamic economy, entrepreneurial economy, competitive economy, productive economy, efficient economy, agile banking, digital banking, productivity.

According to the results of some articles, the dimension of smart economy consists of four components: entrepreneurial economy, competitive economy, productive economy and efficient economy (Fadaei et al., 2021). Smart economy strategies (moving towards agile banking, focusing on digital banking, moving towards cognitive technology, using new technologies from other industries for banks) are in the process of product design and development in the country's banking industry

(Soltaninejad et al., 2019). Also, it is necessary to identify and eliminate the identified barriers including managerial, structural, legal, social, political, cultural, economic, policy and planning barriers to create a smart city. There are some economic obstacles related to the allocation of low budget to intelligence, and one of the best ways to overcome this obstacle is for the government to create a suitable financial model to obtain financial resources for the development of intelligence (Jabarzadeh et al., 2019).

Smart people

Some researchers have investigated intelligent people (Rokhshani Nesab et al., 2015; Falah Tafti, 2017). Articles related to this index have examined criteria such as: level of competence, interest in long-term learning, social and ethnic diversity, flexibility, creativity, worldview/enlightenment, participation in social life, educational facilities, citizen satisfaction, citizen transparency, the performance of citizens, the amount of education, the amount of study hours, the amount of participation in voluntary work, the desire to participate in elections, lifelong learning, the literate population, the amount of knowledge about laws, talent and innovation and creativity, the desire to participate in education, the level of awareness, using electronic banking services, using technology tools, enrolling in schools, enrolling in universities and mastering a foreign language.

According to some results, the law-abiding factor is more important than other factors, and citizens believe that the role of law-abiding in the characteristics of an intelligent citizen is more important. From the point of view of the citizens, the optimal use of information and communication technology and the formation of a smart city have effects based on various economic, social and bio-oriented aspects of the city. (Tafti, 2017) Also, the use of smart mobile phones, computers and faxes by employees accounts for the highest amount of use, and chat, email and Internet account for the lowest amount of ICT facilities at work. There is also a significant relationship between the level of access to ICT facilities in the workplace and the level of use of these facilities to perform common urban tasks. Also, the level of information literacy of citizens and the acceptance of ICT manifestations indicate the desired level of information literacy of citizens. Therefore, we can expect the reduction of urban problems and proper urban planning in the future by strengthening the infrastructure in order to create a smart city (Rokhshani Nesab et al., 2015).

Table 5: Titles, author's name and the most important indicators examined in 100 articles

No	Title	Author	The most important index examined
1	The necessary strategies for setting up smart camera-based parking	Faraji et al. (2019)	Smart mobility
2	A methodology for future forecasting of smart cities (a case study of Tabriz smart city road map in the horizon of 2025)	Keshavarz Tork and Qolizadeh (2014)	Smart life
3	Evaluating the potentials of implementing a smart city with an emphasis on transportation. Case study: Birjand	Eskandari Sani et al (2017)	Smart mobility
4	Evaluation of mobility and smart mobility from the perspective of citizens (case example: Shiraz city)	Kavousi and Mohammadi (2019)	Smart mobility
5	Evaluation of smart city indicators in the four regions of Kerman city	Kamandari and Rahnama (2016)	Smart mobility, smart people, smart life, smart environment, smart governance
6	Evaluation of smartness indicators in Yazd using ANP model and GIS analysis	Hassanabadi et al (2021)	6 indicators
7	Prioritizing the role of intermediate (endogenous) development components in the physical development of the city with the approach of realizing a smart city (case study: Yazd city)	Hikmat Nia (2018)	Smart environment, smart governance
8	Investigating the thematic course of smart city studies	Moradi (2018)	6 indicators
9	Investigating and analyzing obstacles to smartening Ahvaz intra-city transportation	Guderzi et al. (2018)	Smart mobility
10	Investigating the foundations and obstacles of smart city growth in middle cities (case study: Khorramabad)	Saif al-Dini et al. (2012)	6 indicators

No	Title	Author	The most important index examined
11	Smart city theory and evaluation of its infrastructure components in urban management. Case Study: Tabriz Municipality	Roustaei et al. (2017)	6 indicators
12	Explaining the smart urban management model, a new solution to improve urban governance	Hosseini et al. (2018)	Smart governance
13	Smart City: Explaining the needs and requirements of Tehran city for smartness	Pourahmad et al. (2017)	6 indicators
14	Smart mobility and social sustainability: evaluation of mutual relations (case study: Shiraz city)	Kavossi and Mohammadi (1400)	Smart mobility
15	Statistical analysis of the occurrence of dust hazard and presentation of a conceptual model of a smart city to deal with it (case study: Ilam and Dehlran cities)	Nasiri et al. (2013)	Smart environment
16	Analyzing the requirements of the management process in the smartening of the city (case study: Kerman city)	Afzali Neniz et al (2018)	Smart governance
17	Analysis of the relationship between smartness and sustainability in the urban space, a case study (Tehran District 6)	Ismailzadeh (2016)	Smart life, smart environment, smart mobility
18	Comparative analysis of good urban governance (case study: districts 2 and 10 of Tehran)	Khomjani et al (2021)	Smart governance
19	Multidimensional analysis of smart city indicators during the covid-19 epidemic period (case study: smart city)	Hosseini et al (2022)	Smart dynamics, smart economy, smart governance, smart environment, smart people
20	An analysis of the requirements and needs of smart urban growth (case study: Tuysarkan city)	Alwandi and Shams (2019)	6 indicators
21	Compilation and validation of smart city development criteria and indicators (Study case: Isfahan's three cities)	Nestern and Pirani (2017)	6 indicators
22	Determining the suitable areas for placement among CCTVS in order to realize a smart city (case study: Zanjan city)	Mohammadi et al. (2016)	Smart life
23	Investigating the extent of the three districts of Semnan municipality with infrastructure and FAVA indicators in order to realize a smart city	Khodadadi et al. (2015)	Smart people, smart life, smart governance
24	Measuring the effectiveness of the city from smart city indicators (case study: Zanjan city)	Mohammadi et al (2021)	6 indicators
25	Measurement and evaluation of smart city indicators in Ahvaz metropolis	Rahnama et al. (2019)	6 indicators
26	Identifying and interpreting mental patterns in urban managers regarding the smart city with Q methodology (Study case: Hamadan city)	Rabbani Arshad et al (2019)	6 indicators
27	Identification and assessment of cyber security and privacy challenges in the transition of Tehran metropolis to a smart city under conditions of uncertainty	Sediqi et al. (2021)	Smart people, smart life, smart governance
28	Identification and ranking of factors affecting the establishment of a smart city with the approach of high school education in Zahedan	Rashiki and Arab Anani (2019)	Smart life
29	Sustainable smart city: concepts, dimensions and indicators	Hatami et al (2021)	6 indicators
30	The smart city is a necessity of the third millennium in the integrated interactions of electronic municipality (presenting a conceptual-executive model with an emphasis on Iranian cities).	Kiani (2021)	Smart governance, smart citizen, smart transportation, smart life
31	Designing a model for a smart city inspired by the assumptions of modern government services and evaluating its infrastructure components in Bandar Abbas Municipality.	Baluchi et al. (2021)	Smart governance
32	Scenarios for intelligent control and monitoring of vehicles using the Internet of Things	Baradaran et al (2015)	Smart mobility
33	The concept and characteristics of a smart city	Pourahmad et al. (2017)	6 indicators
34	Proportion of good governance and smart city (case study of Tehran city)	Hashemi et al. (2019)	Smart governance
35	Smartening, an approach to sustainable urban realization (Case study: District 6 of Tehran)	Esmailzadeh et al. (2018)	6 indicators
36	Identifying the applications of Internet of Things in the smart	Ansari et al. (2016)	Smart environment

No	Title	Author	The most important index examined
	home using metacomposition method		
37	Providing a framework for assessing cybersecurity and privacy threats and investigating their impact on smart city performance	Sediqi et al. (2022)	Smart life, smart people, smart governance
38	Evaluation of urban and environmental sustainability through smart urban growth, a case study: Jolfa city		6 indicators
39	Evaluation of the relationship between the smart city and the reduction of public transportation problems in the city of Sari	-Zinali Azim (2021)	Smart mobility
40	Evaluation of the integration of building information modeling (BIM) and geographic information system (GIS) in order to develop a smart city		Smart mobility
41	Modeling smart city policy in national and urban dimensions based on cyber space models	- Lotfi et al. (2016)	Smart governance
42	Feasibility of creating sustainable and smart cities in Iran studied: Southeast region of Iran	Khaleghi et al. (2021)	Smart environment
43	Assessing the feasibility of using information and communication technology in urban planning and management(Case study: Zahedan city)	- Ahmadi Nouhdani et al (2019)	smart people
44	Prioritizing indicators in the process of smartening cities (case study: Kerman city)	Rezaiezadeh Mahabadi (2018)	6 indicators
45	Investigating the indicators of a sustainable smart city (case study: Shiraz city)	Rakhshani Nesab et al. (2015)	Smart governance, smart energy, smart construction, smart transportation
46	Investigating and identifying the components of a smart city	-Afzali Tamiz (2017)	6 indicators
47	Investigating the current state of smart transformation in Tabriz metropolis	Furozesh (2021)	6 indicators
48	Smart cities planning with emphasis on scenario writing approach, case study: Urmia city	Shokri Ghafari (2021)	6 indicators
49	The impact of a smart and sustainable city on the quality of life in Yazd	Akhavan et al (2019)	Smart life
50	Explaining the sustainable development model in the border areas with an emphasis on the components of the smart city (Case study: the border city of Urmia)	Tajri et al. (1400)	6 indicators
51	Analysis of the effects of creating a pedestrian path in a smart city with a foresight approach	Parhizkar (2022)	Smart mobility
52	Content analysis of global smart city studies in dealing with the covid 19 epidemic	Farshid et al. (2022)	6 indicators
53	Measuring the institutional capacity of realizing a smart city in Ahvaz metropolis	Sajjadian et al. (2022)	Smart governance
54	Recognizing convergence and divergence between smart city stakeholders (case study: Isfahan city)	Daneshvar et al. (2022)	6 indicators
55	Identifying effective qualitative indicators on the evaluation of Internet of Things business models based on big data analysis in the smart city	Yazdani et al. (1400)	Smart economy
56	Identifying the indicators of the smart city in the context of effective key components before its implementation in the suburbs of Qom city	Azad Bakht (1401)	6 index
57	Identifying and analyzing the institutional barriers of a smart city (case study: Tabriz city)	Jabarzadeh et al. (2019)	Smart governance
58	The combination of business models in the smart city	Farjoud et al. (2019)	Smart economy
59	The structural model of the smart city with an adaptive approach and citizenship logic	Heydari et al. (2022)	6 indicators
60	A comparative study of the smart city with the information-communication technology organizational architecture of the municipality	Heydari et al. (2021)	6 indicators
61	Investigating the components of the smart city in improving the quality of urban life in the studied city: Babolsar	Sadeghi (2022)	6 indicators
62	Analysis of the smartness indicators of Semnan city and municipality by combining the best-worst BWM technique and Delphi Fuzzy	Ehsani Fard (2022)	Smart mobility, smart governance, smart people
63	Scrutiny on the obstacles to the realization of a smart city in	Firoozi et al.	Smart people, smart

No	Title	Author	The most important index examined
	Ahvaz metropolis from the perspective of chaos theory	(2021)	governance
64	Presenting the optimal model of a smart city from the perspective of sustainable urban development (case study: Ray city)	Shams Najafi (2022)	6 indicators
65	Understanding the components of a smart citizen in an urban environment with a technological approach (case study: Yazd city)	Falah Tafti (2017)	smart people
66	Future study of the urban growth of Tabriz metropolis with emphasis on the smart city approach	Abbas Shahir and colleagues (2022)	6 indicators
67	Presenting a model of smart urban governance with a future research approach; Study case of Rasht city	Ziyari et al. (2022)	Smart government
68	Evaluation of the level of intelligence of the studied urban areas of Urmia: the five areas of Urmia city	Hosseini et al. (2021)	6 indicators
69	Redefining the concept of smart cities and the process of making cities smart	Moqtadari Isfahani (2019)	6 indicators
70	Investigating the impact of the smart city on urban vandalism with the mediating role of the happy city and social justice (case study: Shiraz city)	Mousavi et al. (2019)	6 indicators
71	Explaining the model of smart governance with the approach of people's participation in decision-making (case example: Tehran Metropolis)	Noorabad et al. (2022)	Smart governance
72	Analysis of smart city indicators in Zahedan city	Jamshid Zahi et al (1401)	6 indicators
73	Analysis of the requirements and problems of developing a reference platform for the development of smart cities (case study: Kerman city)	Afzali Naniz (2017)	6 indicators
74	Analysis of the key barriers to the use of Internet of Things in Iran's smart cities	Fallahi et al. (2021)	6 indicators
75	Analysis and investigation of factors affecting the smartness of cities (case study: Tabriz city)	Salehi Panahi et al (2022)	6 indicators
76	Developing a native and paradigmatic knowledge management model for monitoring urban information in smart cities	Esfandiari and Musa Khani (2019)	6 indicators
77	Compilation of smart city strategies in Iran (case study: Urmia city):	Shokri Ghaffari et al (2022)	6 indicators
78	Ranking of smart city components and indicators in the 22nd district of Tehran	Mahdizadeh et al. (2021)	6 indicators
79	Identifying dimensions, components and indicators of citizenship education in the management of future smart cities using factor analysis method	Akhan et al(2022)	6 indicators
80	Identifying the policy solutions for the transition to a smart city (case study: Ahvaz metropolis)	Sajjadian et al. (2021)	6 indicators
81	Identifying the components of smart sustainable development in the field of urban management with an entrepreneurial approach	Fadaei et al. (2021)	Smart economy, smart society, smart environment, smart management
82	Shari smart city design based on features and knowledge and technologies (cognitive, communication, information, media)	Abtahi et al. (2022)	6 indicators
83	Structural modeling of smart city theory based on urban governance in Iran (Tabriz Municipality):	Raushi et al. (2022)	Smart governance
84	The role of smart urban governance in the post-corona period for the purpose of sustainable urban development with exploratory-confirmatory factor analysis model and SEM modeling with AMOS (case study: Semnan city)	Ziari and Ehsani Fard (2021)	Smart governance
85	Presenting the smart environment model of Qeshm Island	Gharkhah (2022)	Smart environment
86	Challenges of smart environment in Mashhad metropolis using DPSIR model	Kharazmi et al. (2022)	Smart environment
87	Identifying factors affecting the adoption of Internet of Things in smart urban transportation (Semnan province case study)	Shafii Nikabadi and Shambiati (2021)	Smart mobility
88	Designing smart urban transportation development scenarios with an information environment analysis approach (Case study: Hamadan city)	Nosrati et al. (2019)	Smart mobility
89	The hybrid model of prioritizing smart transportation strategies under study: Tabriz metropolis	Ahmadi et al. (2018)	Smart mobility

No	Title	Author	The most important index examined
90	Raeh model of the product design and development process based on the smart economy paradigm in the banking industry	Soltaninejad et al. (2019)	Smart economy
91	Evaluation of the realization of the smart city with an emphasis on the quality of urban life under study: District 2 of Tehran	Rajabi et al. (1400)	6 indicators
92	Investigating and analyzing the role of smart urban services in improving the quality of life (case study: Semnan city)	Khodadadi et al. (2016)	Smart life, smart environment, smart transportation, smart governance
93	Examining the barriers of cooperation between industry and university in the development of intelligent transportation systems	Tahmasabi and Ghorbani (2022)	Smart transportation
94	Strategies for realizing the vision of smart governance in Iranian cities	Mohammadi De Cheshme and Moradi (1401)	Smart governance
95	Analysis of platforms and obstacles to the realization of smart governance (case study: Sanandaj city)	Aminnejad et al. (2018)	Smart governance
96	Spatial analysis of urban smart city indicators (case study: Zahedan city)	Tajri et al. (2021)	6 indicators
97	Analyzing and examining the role of development dimensions in identifying smart transportation methods (case study: Zahedan city)	Pious (2022)	6 indicators
98	The effective factors of smart economy in tourism industry using best-worst multi-criteria decision making method	Farshid et al. (2022)	Smart life, smart economy
99	The action of maturity of business intelligence on intelligent transportation	Azad Bakht (2022)	Smart transportation, smart economy
100	The influencing factors on cloud computing technology in providing intelligent services in the transportation system	Jabarzadeh et al. (2019)	Smart transportation, smart life

Conclusion and Recommendations

According to the results of studies in the field of smart cities, this topic has been considered since 1970 until today, and these studies have focused on various dimensions of smartness, and the relationship between the components is intertwined. However, the investigation of this issue in Iran is not very old. The present study has been carried out with the aim of investigating the trend of research activities in the field of smart city indicators in Iranian cities.

Different researchers used smart city indicators as a single indicator, a hybrid indicator or a total of 6 indicators in their research. For example, the indicators of smart people and smart economy had the least frequent, respectively, the indicators of governance and smart mobility had the most frequent, respectively, and the indicators of smart life and smart environment had equal conditions in domestic studies in the field of smart city. Also, most of the researches focus on "intelligence" which means digitalization, taking care of technological infrastructures, as well as optimal use of capacities and capabilities; Therefore, it is necessary to pay attention to other dimensions of the smart city in the study of these studies. It should be noted that the need to pay attention to all the components of the smart city, to rely on innovation and technology with the power of collective participation of citizens, and also to pay attention to the priority of cities to achieve smartness, it can help policymakers and urban planners in the quick and effective implementation of smartness-related researches and plans.

Cities such as Tehran, Urmia, Zahedan, Semnan, Shiraz and Tabriz have been active in smart city research. Since there is a tough competition between smart cities in the field of economic activities and ranking, in recent decades due to economic and technological changes, focusing more on the issue of economy can be effective; Because getting a better rating helps to attract investors.

The topic of smart people is one of the other topics that has received less attention. Considering that, the importance of smartening in the form of technology and technology, without the support and participation of the people, will not move forward; It is necessary that smart people be implemented as a main component, completely and in connection with other components, and be given more attention

in studies. It should be noted that the need to pay equal attention to all 6 components of a smart city should be in the horizon of the future researchers of the smart city.

Also, cities should pay attention to one of the dimensions of the smart city according to their priorities and capacities, and start related research in a specialized way, and this seems to be the best option for starting smart city projects. Also, the study and comparison of smart city indicators in Iran and other countries of the world can help to localize some dimensions of smart city based on the necessity and needs of Iranian cities, and plans can be determined and implemented based on that. On the other hand, since the only solution for sustainable cities in the future is the optimal use of fuel, energy, capacities, along with creating people and intelligent life, it is necessary that budgeting and planning for this issue should be considered by policy makers and urban planners in cities in order to move today's cities towards greener cities, with more comfort, better quality and a more pleasant environment.

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