

Recognizing the theory of sustainable urban design in peri-urban areas

Hamed Rahimi^a, Mostafa Behzadfar^{b,*}, Akbar Abdollahzadeh Taraf^a

^aDepartment of Urban Planning and Design, Tabriz Branch, Islamic Azad University, Tabriz, Iran

^bDepartment of Urban Planning and Design, Iran University of Science and Technology, Tehran, Iran

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Abstract

A city is a collection of living and dynamic factors that have been given an identity over time and are transferred to the following periods. In addition, the city grows over time and interacts with its citizens. The ideal of a residential neighborhood in the peri-urban areas of metropolises has been placed in many modern opinions and has been welcomed to solve various urban problems such as management, social and human relations, health and welfare issues, and semantic and identity dimensions. New phenomena have been formed in the spatial organization of the land with the release of the traditional metropolis from the fence of the central city and residential development, shopping and activity centers, and work and recreation to the periphery of the metropolis. On the other hand, different scales have been proposed to implement it in the city with the discussion of sustainable development (international, national, regional-provincial, regional, urban, neighborhood scales, neighborhood units, site, and architectural scale). In recent decades, sustainable urban development has been raised as an essential scientific issue in all societies and has occupied a large part of urban literature. Sustainable urban development approaches and strategies are critical issues and priorities of planning countries and regions of the world. Nearly four-fifths of the world's resources are consumed in cities that occupy only one-fiftieth of the earth's surface. Therefore, this study aimed to evaluate the level of sustainable urban design index/criterion derived from the Iranian city model. This applied, and descriptive-analytical study tried to assess the recreation and adaption of the components of sustainable urban design derived from the Iranian city in the metropolis of Tehran. The results showed that Iranian architecture-urban planning and its governing criteria were consistent with the features and characteristics of sustainable urban development, with more sustainability than today's modern architecture and urban planning in Iranian cities. The Iranian city has a kind of harmony in the physical environment with the climate and natural environment, in the adjacent functions of the environment, with the needs of man and the environment, and the mental and physiological characteristics of humans. Environmental management and planning of peri-cities require the intervention of many actors, from the local communities that work and live in these areas to executive institutions at the national and sub-national levels. The interaction of natural, rural, and urban ecosystems increases the complexity of cooperative strategies but creates new forms of cooperation that expand the border between urban and rural actions.

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*Corresponding author

Email addresses: hrahimi2010@yahoo.com (Hamed Rahimi), behzadfar@iust.ac.ir (Mostafa Behzadfar), taraffarat@yahoo.com (Akbar Abdollahzadeh Taraf)

1 Introduction

The style of production and life of the city dwellers has changed, and texture and concentration changes in its modern meaning have emerged with the beginning of the capitalist period, especially in the last two centuries, and the emergence of issues such as globalization. In recent decades, sustainable urban design patterns have been placed as a solution in new approaches to planning by changing the content concept of the city, increasing the population of cities, and criticizing the indiscriminate expansion and low-density development of cities. Since the late 1990s, international economic policy institutions have proposed a policy called "good governance" as the key to the development puzzle. The condition of sustainable development in developing countries was raised after the failure of the previous plans and policies of international institutions and the loss of this program in achieving sustainable development in the new development approaches of improving governments and empowering them. These countries need to gain a deeper insight into the approaches, methods, and various institutional mechanisms of an active and effective government. Sustainability is simultaneously achieving environmental protection, economic stability, and social justice. Agenda 21 highlights the all-round implementation of the concept of sustainability and emphasizes the transformation in traditional policy-making and the structure of political-administrative systems. Therefore, sustainable development is related to fundamental changes in material flows (such as waste), management of environmental behaviors (such as land use), and a fundamental movement in organizing the political-administrative system and its relationship with urban society. At the local level, urban sustainability is mainly related to implementing Agenda 21 processes in new forms of (mixed) governance. Policy-making and decision-making in the political-administrative system take place through coherent participatory models. In addition, there is much sensitivity in the perspective of urban and regional sustainability in the coalition of different issues in conflicting areas that traditionally deal with separate political sectors.

The upcoming research seeks to discover the criteria of sustainable urban design in peri-urban areas, which is obtained through the examination of the thoughts of different experts and the summarization of these opinions. Every thinker looks at the problem from a certain angle, and of course, the local conditions influence explaining the components.

From the point of view of the experts, sustainability has been one of the essential aspects of the urban system in old Iran, which is currently faced with fundamental challenges both practically and structurally. In the last hundred years, the coherence of the past gradually lost color with the resulting changes in society's social and economic structure. The development and growth of any society are realized as a result of the correct management model, conscious design and planning, and formulation of sustainable development principles, policies, and strategies. If these policies are not implemented, if there is any development, it will not be sustainable. Therefore, sustainable development should be able to reach the stage of action by using only the theoretical state or be transformed from the potential state to the actual condition to achieve the desired result.

2 Statement of the problem

This study evaluated whether the Iranian sustainable city model was destroyed or can be recognized and explained in metropolises like Tehran. The goal of sustainable urban design is to improve environmental quality. Instead of being passive and feeling nostalgic for the past, urban designers, managers, and specialists in this matter should take practical action and make decisive decisions for sustainable urban design in metropolises. In linking theory with practice, attention is paid to how these principles affect a wide range of spatial scales, such as building, space, neighborhood, and the extent of settlements. The method of designing and the designer is essential to realize more sustainable patterns. This historical break requires urban designers to provide a new model regardless of historical principles and roots. Designers should recognize the roots of past culture and history by providing an intermediate model, connecting the distance and roots of Iranian culture with modern bodies and today's lifestyle, and providing an eco-friendly model regarding the model of sustainable urban design.

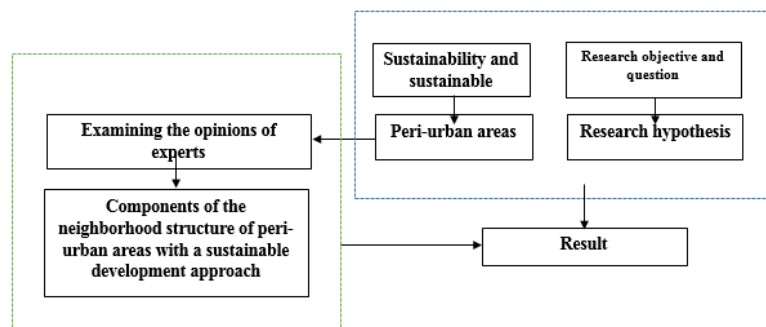
3 Necessity of research

Sustainable development in the new era is considered an essential issue in the design of cities. Sustainable development is a new concept that has been widely proposed since the 80s through the connection of different dimensions of development (economic, cultural, political, and social) and exceptional attention to environmental considerations and environmental protection. Urban design, to beautify the visual space and increase the responsibility of managers to their surrounding environment, has been considered since the 1960s as one of the new issues in today's urban planning.

The Iranian city has almost a fixed organization. The formation of the city is based on the main centers that contain the general functions of the city. The Iranian sustainable city model can manifest in countless forms depending on the region's history, culture, economic base, climate, environment, and policies. The four characteristics that can be emphasized for sustainability in Iranian cities are productivity, justice, flexibility, and stability. Various texts and a review of the writings of thinkers in this field show that Iranian-Islamic architecture and urban planning and its criteria are consistent with the characteristics of sustainable urban development, with more sustainability than the current modern architecture and urban planning in Iranian cities. According to these three perspectives, the Tehran metropolis will be deprived of this quality without considering the basics of sustainable urban design and providing a suitable model in this field. This deprivation will cause social, economic, environmental, and physical crises in Tehran's metropolis.

4 Research hypothesis

Native Iranian elements in creating worthy urban spaces derived from the urban traditions of Iran have been neglected in recent decades. There is a capacity to recreate sustainable urban design components derived from the Iranian city model in the metropolis of Tehran due to the presence of social abilities and a platform for participation in the core of Iranian society.



This article looks for the structural criteria of urban neighborhoods in peri-urban areas with a sustainable development approach, using the ideas of experts. Finally, opinions were compared, and the general criteria of the structure of sustainable urban neighborhoods in peri-urban areas resulted. The current research method is analytical-inferential, and the review of the most reliable external sources on the topic has been used.

5 An overview of the components of the Iranian city according to the principles of sustainability

The meaning and concept of the city are clear to everyone, especially experts and people of opinion in the fields of architecture and urban planning. Further reflection on the texts in the post-modern era shows that there needs to be a universal and acceptable definition of the elements and the general nature of the environment and space for all societies. This issue makes Eastern societies under the domination of Western thinking for years to review their standard definitions in these fields, especially in cases where the accepted reports have shown their inefficiency [6].

The old cities of Iran narrate the power of the governments, the ideology ruling the society, and social interactions and actions. Unlike the European city, the Iranian city has no independent and autonomous existence. In many ways, it has been the interpretation of power relations in the macro-social-political structure that governs Iran [18]. The political structure of Iran, both before Islam and after Islam, was based on the government of different tribes and peoples. Due to the simple social fabric of the clan, there is no need for complex social structures, and the social mechanism of a nation is based on the pure obedience of the clan's members to the chief of the clan [18].

In this system, individual independence is fragile, and the interests of individuals are summed up in the collective interests of the family and clan. Micro-political construction in the form of clan and descent was the shaper of Iran's past political structure, which gave the emperor the role of father, boss, employer, and commander [22].

In a society where the first person monopolizes power, and there is no possibility of forming any institution independent of the government institution, the concept of law could not be anything other than the inspiration and

personal interpretation of the ruling person. In this framework, the legitimacy of the government depends on the ruler's ability to maintain peace, suppress riots, and fulfill other social and economic duties [22].

Economic power and the dependence of all affairs on the personality of the ruler and his governmental organization are the main reasons for the lack of political stability and large and rapid fluctuations in the life of society and the fate of Iran on earth [16].

Sariolghalam introduces autocratic governments as the most crucial political cause of self-control of Iranians with a historical-social perspective and focuses on the political culture of the society while accepting the hypothesis of self-control of Iranians. Sariolghalam believes that the continuation of tribal culture in Iran's political systems caused a delay in the collective understanding of national interests and goals and spread the culture of exclusion, mistrust, and the inability to establish an antagonistic relationship (as a result of non-participation). In tribal life, individuality is dominant in its traditional and even negative sense (compared to individuality in the sense of individual creativity and thought) [29].

The influence of culture on the formation of the body is more or less accepted by those related to urban, human, and human relations issues. In the contemporary urban environments of Iran, culture as a model of human civilization has been neglected in the formation of the body of the urban environment to the point where urban constructions have become more economical and commercial, regardless of the culture of the users [1].

The physical, social, and cultural identities of society mutually influence each other. The richness of the values that shape the physical identity shows the richness of the social and cultural life in the city because the common identity is the buildings formed by the location of the social life. Researchers consider culture, beliefs, and way of life the most determining factors in architecture formation. Therefore, architecture with a social sustainability approach is derived from the ideology of the people of the society within geographical limits. The physical construction of a city, which considers the cultural and ideological conditions governing human societies and provides a suitable vessel to respond to needs, has more chance to create a sense of belonging and interest in the audience. The provision of quality standards of life, human, and architecture is strengthened by living in such spaces that conform to the culture and behaviors of society, and the culture of public perception towards architecture and urban development is improved [15].

In collectivist cultures, groups are significant for people, and people define many aspects of their identity based on group characteristics. The group's goals usually prevail over the purposes of the individuals, and cooperation with the members of the inner groups is considered very valuable. However, individualistic cultures promote self-improvement and emotional independence from the group. In these cultures, the dominant belief is that people should strive to achieve individual goals and not group goals [11].

In collectivist cultures, people consider interpersonal relationships much more stable than individualistic ones. Individualists consider groups temporary and flexible, and to pursue their interests, entering and leaving the group is permissible. Collectivists consider the group permanent based on individual approach characteristics and prefer group preservation to individual benefits [11].

A theoretical to urban planning in Iran has no history of over half a century. During the same period, some Iranian experts tried to introduce and extract the lessons of traditional Iranian architecture and urban planning. Iranian theoreticians have rarely provided a coherent and comprehensive classification of the dimensions of integration, and they have often been limited to generalities. There is no definition for harmony, continuity, unity, and interconnectedness. Connection and connection are mainly referred to the two concepts of coordination and continuity, and its criteria are often in shape coordination, spatial coordination, and spatial, visual, and physical continuity, and continuity [10].

Social solidarity and public participation are crucial and prominent concepts in social and sociological studies. Social Solidarity means unity, agreement, and loyalty caused by interests, feelings, empathy, and common actions. These words are from the same family: social integration, unity, harmony, and order. Social solidarity is the feeling of mutual responsibility between several people or groups who have awareness and will and includes human bonds and brotherhood between humans in general and even the mutual dependence of their lives and interests. Solidarity is the expression of a phenomenon based on which, at the level of a group or a society, members depend on each other and mutually need each other [21].

On the other hand, physical integrity is a concept that is conceptually related to concepts such as unity, harmony, connection, connection, and continuity in theoretical texts. In addition, one of the most essential characteristics of the historical context is cities with organic growth, especially in cities with a hot and dry climate. In general, the city is a unified whole whose parts are related. In particular, the city is the best example of integration in all its dimensions in the historical contexts of cities with organic growth, especially cities with hot and dry climates such as Yazd, Nain,

and Isfahan with their interconnected contexts, which are tangible and visible [10].

Social cohesion, as one of the indicators of social capital, implies collective agreement among the members of a society and is the result of accepting and internalizing the value and normative system of society and the existence of collective belonging and interaction among the people of a community. Social cohesion indicates a situation where people depend on each other through cultural and social obligations. This concept refers to the agreement between people who participate in a social system and, mainly because of that society’s norms, values, beliefs, and structures, they feel close and depend on its support [26].

Iranian cities have a unique geographical unity in their structure. Dead ends, alleys, crossings, and neighborhood centers have joined hands with public elements and give existence to the neighborhood. Each of these components has its characteristics, which are very important in terms of the traditional fabric of cities. Spaces such as bazaars, mosques, bathhouses, taverns, reservoirs, caravanserais, squares, and sometimes warehouses have been created to meet the needs of the residents of each neighborhood and have given relative independence to their lives. The components of the neighborhood were residential houses, dead ends, alleys, and finally, the public facilities of the center of the neighborhood, such as mosques, places of worship, bazaars, baths, water reservoirs, and sometimes coffee houses. The aforementioned elements were evenly distributed throughout the city and had a limited sphere of influence and performance. The last point of impact and area of operation of these elements was the neighborhood border [8].

The division of cities into several neighborhoods has played an essential role in administrating matters such as tax control and other urban issues such as better management of water-related affairs [17]. Ethnic, religious, and linguistic solidarity has been the reason for the cohesion of the neighborhoods and the key to the stability and survival of the residents. Strong ties between residents have provided psychological security and increased cooperation and cooperation between them. The ethnic, linguistic, and racial correlations of the neighborhoods have been a reflection of the cultural pluralism existing in flat and different ethnic groups on a territorial scale. From the social point of view, urban neighborhoods are a self-governing social system that has been working to restore its relationships and needs. According to Lockhart, in Iranian cities, like other cities in the Middle East, the sense of responsibility for civil cooperation at the city scale has been minimal, and unity in the neighborhood has often not meant unity and integrity in the city [17]. Costello says: "In the neighborhood system, people’s sense of belonging, identification, loyalty, and responsibility towards the neighborhood community is stronger than the urban community. The law followed the codes and principles agreed upon by the neighborhood’s residents."

Table 1: Understanding the concept of neighborhood based on its main elements and components in different scientific fields [27]

Scientific fields	Main elements s	Common themes
Urban sociology	Having solidarity and mutual relations, having certain limits and privacy, the neighborhood as a social unit	<ul style="list-style-type: none"> ❖ Specific area in the city ❖ Sense of solidarity and mutual relations between residents ❖ Collective identity ❖ Integration of space and activity within the neighborhood
Social Sciences	Small-scale residential area, people living in a residential area, relationships between residents, quality of relationships and interactions	
Urban and Social Geography	Specific limits in the city context of face-to-face confrontation, cooperation in efforts to resolve common issues, and the purposefulness of living in a particular location.	
Urban planning	Identifiable area in the city, dynamic economic and social identity, paying attention to physical and social criteria in an integrated manner, definite urban area, balanced combination of activities, solid center, social relations in a spatial container	

A suitable body in the traditional cities of Iran is one of the critical factors that support social cohesion. The body of the city is the result of human tendencies and activities. In a neighborhood where there is a possibility of effective presence of residents in its different parts, residents should have more effective collective actions and social interactions in a way that gives meaning to the concept of forming social interactions. In the traditional cities of Iran, the body has been a suitable tool for organizing mutual relations in a neighborhood and strengthening social ties. Therefore, recognizing body and community cohesion in new Iranian neighborhoods is a scientific and fundamental task. In addition, the basics of material and spiritual culture elements are essential as a strategy in the local development of the new society.

Table 2:

The essential criteria of sustainability in Iranian cities			
Dimensions	Criteria	Related urban design dimensions	Related Urban Design Norms
Social solidarity	Social solidarity, public participation, harmony, collective belonging, internalization of society's value system, sense of mutual responsibility, face-to-face interaction, Collective memory, the connection of cultural values from the past to the future, the rule of law, equal opportunities, mutual trust, the power of social organizations, the spirit of cooperation, and cooperation.	Contextualism, morphology, spatial, perceptual, aesthetic, sustainability, functional, temporal, visual	Unity, identity, diversity, sense of belonging, sense of place, vitality, security, permanence, peace
Physical integrity	Hierarchy, spatial continuity, and connection, coordination of components, continuity, visual signs, the relationship of elements, human scale, spatial contrast, the composition of mass and space, enclosure, privacy, territory, symmetry, arrangement, functional compatibility, size		Ability, flexibility, permeability, freshness, safety and security, efficiency, visual appeal, comfort
Compatibility with the ecosystem	Attention to light, air, water, climate	viability, vitality, morphology,	Savings, durability, flexibility

6 Concepts and approaches of sustainable development and sustainable city

The emergence of sustainable development as the main slogan of the third millennium is also due to the effects of cities on the biosphere and various dimensions of human life. Discussing sustainability and sustainable development without considering cities and urbanization will be meaningless. The root of the attitude towards sustainable development goes back to dissatisfaction with the results of socio-economic development and growth in cities from the point of view of ecology or ecology [28].

Sustainable development is the process of protecting the planet Earth and the ecosystems in it, which leads to favorable and fair human development [33].

Sustainable development is a new approach that considers economic development strategy as a half-finished and failed process without considering environmental sustainability and social justice.

The macro strategies of sustainable development are:

- Reducing the consumption of natural resources and more efficiency in their use
- Decreasing the production of pollutants and recycling more waste
- Protection of life support systems and more biomass production
- Giving priority to basic human needs and local communities
- Protecting and promoting diversity while justice between people, communities, countries, and cultures, as well as ensuring justice between generations (15)[28]

Many challenges in the world today, including extreme poverty, unemployment, environmental degradation, and climate change, are attributed to urban settlements. Urbanization was one of the main trends in forming the built environment during the 20th and 21st centuries. Therefore, this change towards the increase of urban environments in the world can and should be considered a driving force to ensure the sustainable development of people and places in

all countries. The United Nations Human Settlements Program points out that about 2,000 metropolitan areas house a third of the world's population. As predicted, most of the world's population will live in urban areas by 2035 [31].

The central concept of sustainability is in the main currents of thinking in social, environmental, and economic fields and depends on the beliefs, awareness, and political position of the individual in various ways. Sometimes, sustainability is defined by living in dense settlements using the public transportation network, minimizing energy, and recycling waste. For others, sustainability is defined by social life in agricultural communities, wide open spaces, and strong social connections, and therefore, sustainability is spatial and temporal [25]. As a result, sustainability is more of a process than a set of dry dogmatic perceptions, a process whose fundamental concepts are formed by changing conditions, ideas, ideals, and technological capabilities [25].



The theory of sustainable urban development suggests preventing urban and regional pollution, reducing the production capacity of the local, regional, and national environment, supporting recycling, not supporting harmful developments, and eliminating the gap between the rich and the poor.

Physically, sustainable urban development means changes in land use and density levels to meet the needs of city residents in terms of housing, transportation, leisure, and food. These changes over time make the city habitable from an environmental point of view (clean air, healthy drinking water, unpolluted land, and surface and underground water). In addition, the city becomes economically sustainable (the urban economy is coordinated with technical and industrial changes to maintain basic jobs and provide suitable housing within the residents' affordability, with a fair tax burden per capita). Moreover, the city becomes socially connected (land use patterns promote social solidarity and citizens' sense of belonging to the city's heritage) [19].

The criteria of a sustainable city in terms of Power are as follows:

- Active, comprehensive, and secure
- With social justice
- Environmentally sensitive
- Proper design and implementation
- Responsive service delivery
- Proper and coherent communication network
- Potentials for progress and development (creating jobs and taking advantage of potential)
- Correct management [24].

The strategic policies of the sustainable city from the ecological perspective are as follows:

- Minimizing the negative environmental messages of urban production, distribution, and consumption patterns for residents and its region.
- Minimizing the use of non-renewable resources (such as fossil energy) and gradually replacing them with renewable resources
- Regulating the use of renewable resources according to their reproduction rate [14].

From the socio-economic point of view, the emphasis is on the proper distribution of opportunities to use resources for all people of a city, region, or the world. The sustainable development of cities and the environment cannot be expected

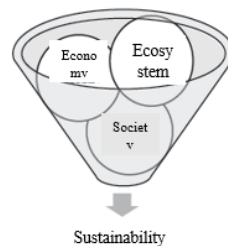
despite the differences between social classes or countries with unbalanced economic growth. The sustainability category was taken into consideration with emphasis on natural resources and from the ecological aspect, but its correlation was quickly realized with social and economic dimensions. In many cases, the issue of fair access to resources and the organization of different sections of society and nations in the face of environmental problems and lack of resources has become far more critical. Hence, sustainability is strongly linked with the categories of power and justice to the extent that Harvey considers social justice and environmental balance to be necessary and necessary for each other and the realization that each is not possible without the other [30].

The origin of sustainability is closely related to environmental issues, and the program is simply green, which has evolved over the years and moved away from the focus on the natural ecosystem. The most important asset of the sustainability approach is to present a new way of thinking that involves avoiding the distinction between environmental factors of development and giving the same value to social, economic, and environmental rules [25].

A sustainable city is organized so that all citizens meet their needs and improve their living conditions without causing any harm to nature and not endangering the living conditions of other people. A sustainable city is a place that minimizes the harmful effects on nature, where landscapes and buildings are in balance. Buildings and infrastructures are safe and have reached the optimal level in terms of energy consumption. A sustainable city is a fair city, a beautiful city, a creative city, an ecological city, a dense and multi-centered city, a diverse city, a city with easy access, and a city with people's participation [13].

The most critical role of urban planners is to allow society to take control of its future destiny and facilitate listening to society. The most important thing is to start a process that changes the direction of the local community towards a sustainable mindset. Sustainable development is formed based on a local community's understanding of planning activities, and evaluating the local community organization and assessing available human resources to participate in the program is essential [25].

Based on ecological principles, city managers should transform the linear flow of materials, goods, and wastes into a self-regulating and rotating flow to create a sustainable ecosystem. This control process should not negatively affect the quality of life, but should be the basis for increasing the city's livability [14].



A sustainable city can survive due to the economical use of resources, avoiding excessive waste production, recycling them as much as possible, and adopting long-term beneficial policies. The stable city is placed against the modern cities with characteristics such as a large volume of input versus a large volume of output. Sustainable city planners should focus on creating cities with less energy and materials input and less waste and pollution output.

The sustainable city is a reasonable replacement for the destructive urbanism of the 20th century, and its parallel attention to environmental, human, and social issues, such as suitable housing and minimal living, is also considered [7]. Examples of sustainable cities in practice include compact cities, green cities, urban villages, and pedestrian-oriented cities.

The increase in the population of cities and the strong tendency to urbanization (for various reasons, including the concentration of more services) is a phenomenon that the metropolises of developing countries are dealing with. Following global warming and climate change increase, many thinkers and theorists sought different solutions, including introducing the sustainable development theory. In the last decade, with the emergence of the slogan "think globally, act locally," the role of this theory has increased in local and local aspects.

The stability of Iran's traditional cities in the past resulted from physical cohesion and attention to the city as a place for its residents to live. The critical sustainability features in cities are social and geographical equality (individual welfare and meeting the basic needs of people in society), protection of natural resources and minimal use of non-renewable resources, economic survival, and diversity. The concept of sustainability in the city means sustainability in all human activities. Meanwhile, the city should be considered the result of an overall process concerned with the continuous changes of cultures and economies on the natural-physical environment of the city as a product. Therefore,

urban sustainability over time, on the one hand, focuses on understanding the impact of economic, social, and cultural activities on the physical environment, and on the other hand, on how the physical environment requires and is sufficient for certain types of social, cultural, and economic behaviors.

7 The concepts of peri-urban areas

In many less-developed countries, urbanization occurs much faster than expanding industrial employment. This trend does not mean migration does not happen, but it confirms that direct investment from agricultural to service activities occurs. Many cities have either passed through such an era, are passing through, or will pass through in the future. In the state of transformation, the socio-economic differences of the peri-urban environment become more apparent. Although agricultural activity has dominated for some time, the structure of land ownership, activities, and use of space has changed over time [9].

Until the beginning of the 20th century, using two distinct concepts of city and village seemed sufficient to describe spatial and residential development. However, accelerated urbanization and population growth have led to new phenomena in the spatial organization of the land on the scale of metropolises and megacities. Cities cause the transformation of cities of various sizes from a rural nature to an urban one in the transition stage and the emergence of peri-urban by advancing toward living spaces, agricultural lands, and the natural environment [5].

New phenomena have been formed in the spatial organization of the land with the release of the traditional metropolis from the fence of the central city and the development of residential, shopping, and activity centers, work, and recreation to the periphery of the metropolises [4].

According to the Organization for Economic Development and Cooperation definition, "peri-city" entered the public domain and was used in Europe in the 80s. The organization uses the term "grey areas" for these areas, which are neither completely urban nor completely rural in the traditional sense and often seen as a "middle strip" on the ground with irregular features. Unbalanced mixing of urban and rural functions in the peri-urban areas, the interaction of the city and the countryside is at its peak. In this area, pastoral activities and their life forms are isolated by the vast influence of urban lands (for this reason, the city is said to expand physically and functionally in rural areas).

Peri-cities have unique characteristics that distinguish them from urban and rural areas, including expansion of urban residential and commercial uses and the reduction of pastoral activities, rapid but unplanned growth with insufficient infrastructure services, residents with low and medium incomes, and the development of trading markets.

The surrounding urban area, heavily influenced by urban activities, is often known as the urban periphery or peri-urban environment. The peri-urban environment is a spatial continuum formed by the city's impact and urbanization on the countryside and the natural environment. In recent decades, the intermingling of urban, rural, and natural systems with the expansion of metropolises in peripheral and peri-urban areas was the focus of many countries, especially less developed countries. The advance of the metropolis towards the peripheral areas has always been accompanied by the formation and transformation of the peri-urban environment [9].

In the process of urbanization, rural centers located in the surrounding areas of cities gradually acquire urban characteristics and the city's social, economic, and physical conditions. The development of the peri-urban regions is usually faced with severe social changes. High-level immigration is one of the main factors influencing such social changes [32].

Periurbanization is a form of metropolitan growth in the surrounding environment and response to complex economic, social, and political pressures in the geographical body in this environment and is the result of the external dispersion of various activities, especially residential activities [12].

The area between their urban and rural settlements is known as peri-city. Larger peri-urban areas can include cities and villages within the boundaries of a city with complex patterns of land use and urban landscape between regional and local boundaries undergoing rapid changes. The population of peri-cities in Europe is usually less than 20,000 people, with a density of 40 people per square kilometer [23].

Peri-urban areas are defined as the meeting place of urban and rural activities, which can be considered where the city, the village, and the natural ecosystem mix in the environmental sense [20].

Urban sprawl was first seen in rapid urban growth and then peri-urban development in American cities in the 1950s and 1960s. The peri-cities continued to move forward without problems as long as they were manageable. Gradually, the city and its natural values began to be destroyed with the expansion of the peri-cities. Therefore, the history of urban sprawl goes back to this time. The discussion about the effects of urban sprawl is very recent and goes back to the mid-1990s. At this time, for the first time, concerns regarding the rapid growth of social and primarily

Table 3:

Different species of peri-urban areas		
1	Rural villages (rural places with awareness and citizenship thinking)	They are not geographically close to the city center, they are geographically far from the city, but they experience a kind of urban life.
2	Scattered peri-city	It is located near the city, and due to migration and the purpose of settlement, they have a lot of ethnic diversity and diverse beliefs and opinions.
3	Chain peri-city	It is an ancestral migration process, such as the transfer of the geographical location of the population of one village to another place, ethnic and family chain migrations, having ethnic integrity, beliefs, and opinions.
4	peri-city in situ (Surrounding the city in a suitable position and in its place)	They are close to urban centers, resulting from urban development, connected to urban areas and urbanization in their place, and located in the areas of complete absorption in the city.
5	Absorbed peri-city	The old resident group is replaced by new successors, maintaining the original residents' customary or traditional institutional arrangements.

environmental consequences of urban development were raised [2]. Therefore, peri-urban areas have many issues, problems, inadequacies, and complications that require special management as an emerging urban phenomenon.

Table 4:

The concepts of peri-urban areas	
Peri-city in terms of location	As the geographical edge of the city and its surrounding environment, the space surrounding the city, waste disposal areas, and sewage or large-scale recreational and entertainment facilities such as a zoo or game city and some agricultural activities.
Peri-city in terms of concept	Peri-urban areas are spaces with rapid social growth, interdependence between natural resources, agriculture, and urban processes, conflicts between the housing needs of low-income people, and the general need to preserve the environment.
Peri-city in terms of institutional perspective	Very complex, confusion in legal justifications, and management of peri-urban areas, often without any explicit coordination with the government management structure, under the administration of more than one administrative area.

Strategic planning and management seek to balance long-term and mid-term strategies and devise short-term intervention methods. The difference between strategic management and other approaches is to pay attention to all areas of decision-making and areas with interactive potential and base strategies on understanding current policies. A few environmental policies focused on these areas can be found due to the absence or weakness of institutions with agendas, special duties, and the legal/political/organizational power necessary to intervene in such an environment.

Long-term environmental strategies for peri-cities should be based on understanding current policies that directly and indirectly affect change processes in peri-cities. Environmental policies or interventions explicitly focusing on peri-urban areas are still rare. Part of this is the lack of institutions with particular attention to suburbs. Therefore, it is necessary to adopt a broader goal when examining policies affecting peri-urban areas, which rapidly impact peri-urban areas and affect different flows between rural and urban areas [3].

The involvement of the strategic management mechanism in the peri-urban environment requires the participation of many actors. Integrated dealing with such environments requires complex partnership strategies, new cooperation arrangements, or collaborative approaches that require crossing the legal and organizational boundaries of the involved agents. There is a need for a comprehensive environmental discussion field suitable for achieving consensus between the involved elements' vision, goals, and strategies, which can only work with the existence and continuity of multiple organizational structures.

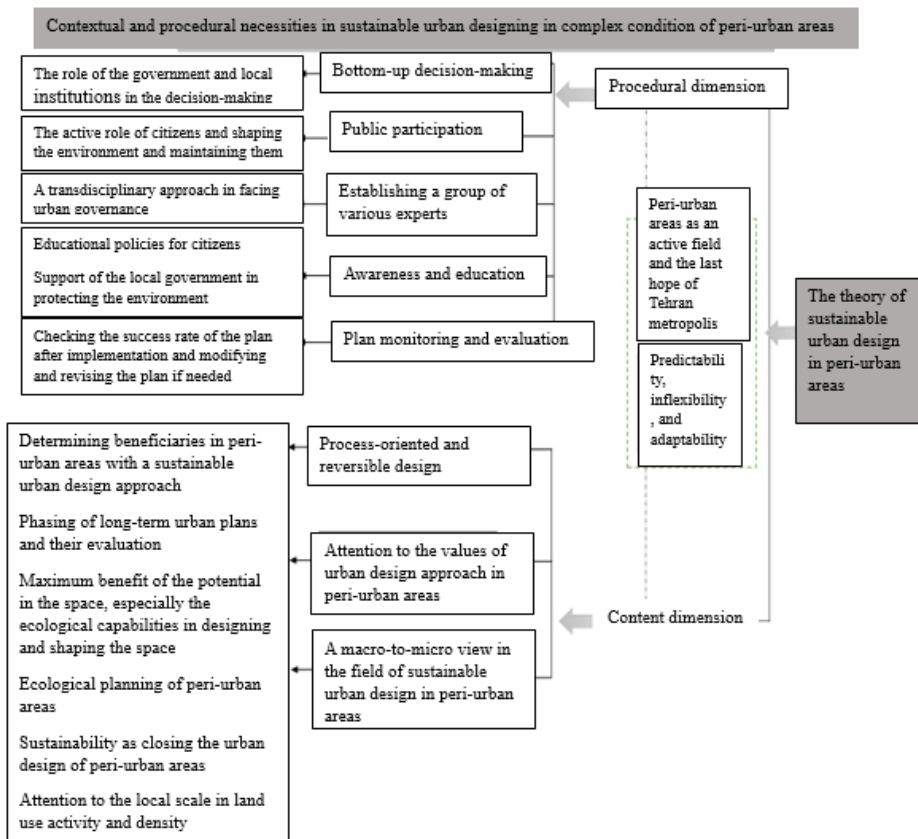
8 Conclusion

Following the formation of the sustainability paradigm following the energy crisis in the 1970s, the efficiency of the environment and man-made environments in such a way as to use natural resources optimally and minimize the amount of pollution production has received attention. Today, sustainable city development, which is one of the theories of the recent era, has occupied a significant part of the urban planning literature.

Sustainable urban development aims to draw solutions to reach a favorable future for human societies, which provides the living conditions and use of resources without harming the integrity, beauty, and stability of the vital systems of human needs. Sustainable urban development offers solutions to structural, social, and economic development patterns to prevent the destruction of natural resources, biological systems, pollution, climate change, excessive population growth, injustice, and the decline in the quality of urban life now and in the future. The three economic, environmental, and social aspects are examined in an integrated manner in sustainability issues. On the other hand, the continuous growth of urbanization, along with the emergence of social, economic, and environmental problems in today’s cities, has led to a decrease in living standards and, as a result, a decline in the sustainability and livability of cities. Approaches such as livability and sustainable development are inevitable for today’s cities as concepts that play an essential role in reducing cities’ social, economic, and environmental problems. Livability with sustainable urban design refers to an urban system in which all its residents’ social, economic, physical, and mental health aspects are considered. From this point of view, urban livability deals with all aspects and subjective and objective dimensions of urban settlements and seeks to create a healthy urban environment for current citizens and future generations.

For this reason, sustainable urban design is a new concept and approach to sustainable urban development, and the concept of livability can be considered one of the most significant urban planning ideas in the contemporary era. Considering the expansion of cities in the suburbs, peri-urban areas can be the target point of sustainable urban design. In these areas, the increase of social cohesion, spatial justice, health, environmental health, economic sustainability, greenness, and housing value are discussed.

Table 5:



References

- [1] A. Ahmedpour Yazdi, B. Haddad Shakri, and Mohammad Reza Khatibi, *Investigation of the effects of cultural diversity of different social groups on the formation of the body of urban neighborhoods*, Nat. Culture-Oriented Urban Dev. Conf., Sheikh Bahai University of Isfahan, 2016.
- [2] Gh. Amirinejad, *Planning to reduce the negative environmental effects caused by urban development in the peri-urban intersection by using the environmental assessment method (EIA); case example: District 18 of Tehran*, Master's Thesis- Department of Urban and Regional Planning, Shahid Beheshti University, Faculty of Architecture and Urban Planning, Tehran, 2009.
- [3] A. Allen, *Environmental planning and management of the peri-urban interface*, Perspect. Emerg. Field Envir. Urban. **15** (2003), no. 1.
- [4] I. Asadi and E. Zebardast, *Typology of city-foundation areas in urban and regional studies: with a comment on the analysis of the concept of the urban complex in Iran*, J. Fine Arts-Architect. Urban Dev. **43** (2010).
- [5] T. Ashenaee, *Analysis of the consequences of policies to guide and control the growth of peri-urbanization in the halo of the metropolis of Tehran*, Master's thesis in urban planning, Iran University of Science and Technology, Faculty of Architecture-Urban Planning, Tehran, 2013.
- [6] N. Barati, *A new look at the concept of the city from the perspective of Persian language and culture*, Scientific-research journal of fine arts, Tehran. (2009).
- [7] S.H. Bahraini, *Urbanization and Sustainable Development*, Rehiyaf Publishing House **17** (1997).
- [8] A.H. Daneshpour and E. Shiri, *Physical-functional components comprising the identity of historical texture of Iranian-Islamic city*, Naqshejahan- Basic Stud. New Technol. Architect. Plann. **5** (2015), no. 1, 17–25.
- [9] Z. Daneshpour, *An introduction to planning theories with special reference to urban planning theories*, Center for Urban Studies, Iran, 2008, pp. 420–430. [In Persian]
- [10] S.M. Emami and E. Zebardast, *The evaluation of urban development plans based on interconnectedness and connectivity principle using AHP model Case study: Imam Ali Square Revitalization Plan in Isfahan*, Motaleate Shari **3** (2014), no. 11, 19–36.
- [11] G.W. England, *Japanese and American management: Theory Z and beyond*, J. Int. Bus. Stud. **14** (1983), 131–141.
- [12] A. German, *Theories and Models of the Peri-urban Interface: A Changing Conceptual Landscape, Strategic Environmental Planning, and Management for the Peri-Urban Interface*, Research Project, Development Planning Unit (DPU) University College London, 1999.
- [13] H. Hataminejad, *An approach to a sustainable urban form*, Sepehr Mag. **21** (2017).
- [14] S. Huang, *Urban ecosystems, energetic hierarchies, and ecological economics of Taipei*, Metropolis J. Envir. Manag. **52** (2020), 39–51.
- [15] K. Iszadeh, *Recognizing the impact of culture on body analysis and design of complex biological design cities with an emphasis on cultural theory*, Int. J. Urban Rural Manag. **16** (2017), no. 46, 71–96
- [16] H. Katouzian, *State and Society in Iran: The Eclipse of the Qajars and the Emergence of the Pahlavis*, London: I.B.Tauris., 2000.
- [17] M. Kheyraadi, *Iranian Cities: Formation and Development*, Syracuse University Press, 2000.
- [18] H. Maroufi, *Restudying the Iranian (Islamic) city analyzing the institutions of urban governmentality in Iranian cities and their influences on urban space during Qajar and Safavid era*, J. Iran. Architect. Urban. **9** (2018), no. 1, 35–45.
- [19] S. Mukomoo, *On sustainable urban development in sub-Saharan Africa*, Cities **13** (1996), no. 4, 265–271.
- [20] Nairobi Peri-urban Research Project Team, *Guidelines for Strategic Environmental Planning and Management of the Peri-Urban Interface*, Development Planning Unit (DPU), University College London, 2001.
- [21] A. Nasrabadi, *Social solidarity and public participation (perspectives, strengthening factors, threats, and solutions)*, Hason **6** (2005). [In Persian]

- [22] J. Pakzad, *History of the City and Urbanization in Iran (From the Beginning to the Qajar era)*, First Edition, Armanshahr Publishing House, Tehran, 2011.
- [23] A. Piorr, J. Ravetz, and I. Tosics, *Peri-urbanization in Europ towards European Policies to Sustain Urban-Rural Futures*, A Synthesis Report, University of Copenhagen., 2011.
- [24] A. Power, *Estates on the Edge: The Social Consequences of Mass Housing in Northern Europe*, Macmillan, London, 1999.
- [25] K.J. Krizek and J. Power, *A Planners Guide to Sustainable Development*, PAS Report No. 467, 1996.
- [26] R. Rezazadeh, F. Mohammadi Aydghmish and M. Rafiyan, *Analysis of social capitals affecting participation in the improvement of urban disordered structures; case example: Imamzadeh Hassan neighborhood, district 17 of Tehran*, Architecture and urban planning letter, scientific and specialized journal of Art University, Tehran, 2011.
- [27] M. Sarafi and J. Tavakolinia, *Theoretical study of the concept of neighborhood and its redefinition with an emphasis on the conditions of urban neighborhoods in Iran*, J. Human Geog. Res. 42 (2010), no. 2, 82–103.
- [28] M. Sarafi, *Sustainable development and responsibility of urban planners*, J. Architect. Urban. **35** (1996).
- [29] M. Sariolghalam, *Tribal Foundations of Iranian Political Culture*, Basic Research Center of the Ministry of Culture and Islamic Guidance, Tehran, 1997.
- [30] J.A. Tarr, *The metabolism of the industrial city: the case of Pittsburgh*, J. Urban Hist. **28** (2002), no. 5, 511–545.
- [31] United Nations Human Settlements Program. *The New Urban Agenda*, UN-Habitat, 2020.
- [32] D. Webster and L. Muller, *Challenges of peri-urbanization in the lower Yangtze region: The Case of the Hangzhou Ningbo Corridor*, Asia/Pacific Research Center, Stanford University, <http://APARC.Stanford>, 2002.
- [33] M. Yousefinejad, *Examining the viewpoints of natural resource managers towards sustainable development*, Jangal Marateh Month. **50** (2001).