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The Impact of Urban Smartification and Urban Security on Achieving Sustainable Urban Development

Hossein Nabipour Marzbali[1], Anahita MohammadAraghi[2*]

[1]Kahne Noore-e-Tooba Higher Education Institute Tehran, Iran

Email: hossein.nabipour73@gmail.com

[2]Islamic Azad University - Central Tehran Branch Tehran, Iran

Email: anahiita72m@gmail.com

Abstract

Urban security is a condition where risks and other factors causing physical harm are controlled, thereby ensuring the health and well-being of individuals. Today, security is considered the most important goal of any country, and its absence or deficiencies in its establishment can challenge the healthy life of citizens. Naturally, places with all their characteristics and the type of human perception and behavior within them can shape spaces with positive or negative security. The city is one of the most prominent manifestations of human life and has undergone many ups and downs since its initial formation. The method of its governance has also evolved significantly throughout history. On the other hand, with the expansion of electronic knowledge and technology, machine thinking, and modern communications, many patterns and qualities of urban life have begun to change at an unprecedented pace, leading to the concept of urban smartification. Thus, the present study aims to examine the impact of urban smartification and urban security on achieving sustainable urban development. The research is descriptive and conducted through a library method. The results show that a smart city is one that can maintain, control, and integrate all infrastructure, such as roads, tunnels, airways, waterways, railways, communication sources, etc. It can also help optimize resources and address security issues. Given the facilities and capabilities that smartification brings to cities, achieving sustainable urban development indicators in communities will be more accessible and readily available to citizens in the urban space.

Keywords: Smartification, Smart City, Sustainable Development, Urban Security

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Introduction

Rapid urban development in recent decades has impacted various aspects of human life, leading to instability for both humans and the environment (Salemi & Salemian Zadeh, 2023). Considering the technological advancements in cities and the consequent expansion of environmental issues, a strategic approach to environmental education and sustainable development within municipalities has become essential. The fragmentation of urban systems and the unique challenges of modern urban life highlight the necessity for comprehensive attention to strategies and solutions that optimize urban living conditions. Among these, the need for a sustainable and ideal city stands out as perhaps the most significant requirement of contemporary humanity. The Urban Development Strategy, introduced by the World Bank and the Cities Alliance, aims at sustainable urban development, poverty reduction, and human community enhancement. This approach is based on four indicators: good governance, banking, competitiveness, and livability (Alireza Khosravi, 2024).

Today's cities face challenges resulting from scientific and industrial advancements and the emergence of new organizational and social needs. One of the recent concepts introduced to address these urban challenges is the development of smart cities. Despite their numerous advantages, the realization of smart cities has been fraught with difficulties and various challenges, leading to the unsuccessful implementation of smart city strategies in many urban areas. A thorough and meticulous evaluation of the factors influencing the realization of smart cities is crucial in identifying the challenges these cities face (Rashidi et al., 2023). Urban smartification is an innovative process aimed at improving the quality of life for citizens and the efficiency of urban resources, embraced enthusiastically in the 21st century due to advancements in technology and information.

In Iran, measures for urban smartification have been in place since the 1970s, prompted by population growth and rural-to-urban migration, particularly in the capital and other major cities. For example, in Tehran, with a population of 8,693,706, projects such as defining 2,907 development plans and completing 723 of them so far, increasing public transportation options with 40 kilometers of metro lines and an increase in the number of stations from 109 to 137, a 13% increase in the number of wagons, and a 67% reduction in residential construction violations have been undertaken. Additionally, there are plans to produce 100 electric buses in recent years (Kamkar et al., 2023).

Cities are one of the most prominent manifestations of human life, having experienced many ups and downs since their initial formation. The methods of their governance have evolved significantly throughout history. In early cities, governance was primarily under central authority and individuals appointed by the central government. Gradually, with the progress of urban life,

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especially after the Industrial and French Revolutions, the idea of cities being governed by their people emerged. The history of thought and practice in urban management and planning indicates that until the industrialization of cities, their organization was almost spontaneous and organic. However, with increasing urban population, the diversity of urban activities and population, and subsequent physical transformations, previous equations governing spatial organization changed, leading to unprecedented issues in environmental, social, economic, and physical domains. This period marked the beginning of theoretical developments in urban planning and management, becoming a central theme in academic research on cities.

With the expansion of electronic knowledge and technology, machine thinking, and modern communications, many urban life patterns and qualities have begun to change at an unprecedented pace. Since the early 1990s, there has been a practical movement toward urban smartification, which has extended to all executive policies such as bus operations, university activities, commerce, administrative communications, and banking, all transitioning to smart information exchange. A smart city today is defined as one with smart components including smart economy, smart transportation, smart environment, smart citizens, smart lifestyle, and smart administrative management. Therefore, a smart city can be interpreted as a place where individuals leverage technology to help transform the city and realize their ideals by living in a selected specific location. Cities are capable of providing something for everyone, but only when they are created by everyone.

Today, achieving smart cities and governments is one of the most challenging research topics worldwide, with some researchers believing that in the near future, the wealthiest and most powerful countries will be those that have advanced the most in this area. Generally, a smart city strives to improve efficiency and share information with citizens, offering better quality smart services to enhance citizen satisfaction and welfare (Hamzaei et al., 2023).

Safety is a condition where risks and other factors causing physical harm are controlled, ensuring the health and well-being of individuals. Key organizations in urban safety, such as the fire department, play a crucial role in citizen safety. Smartifying urban safety and fire services is a significant step in risk reduction. In recent years, developed countries have increasingly focused on citizen safety and smartifying urban safety in their city plans, making it a major goal (Pouraskandar, 2001).

Focusing on urban safety and its smartification positively impacts not only citizens but also urban management employees, such as fire department staff. Positive outcomes of smartifying safety for emergency organization staff include creating a sense of psychological security. The importance of psychological security in jobs is due to the frequent exposure to pressures and stressors inherent

Power System Technology
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in the job, making a secure working environment and employee satisfaction essential (Nazari et al., 2020).

A smart city is capable of providing conditions and resources for change. Therefore, urban resources can be interpreted as an innovative ecosystem with specific supply and demand needs of citizens or other stakeholders. In the ideal model, a smart city acts as a transportation engine, a generator of solutions for problems, enabling the city to behave more intelligently for sustainable growth and development. Sustainability and sustainable development mean meeting today's economic and social needs without compromising the environment and the needs of future generations. While sustainable development's message for humanity is to consider quality alongside quantity growth, it also implies that sustainable development does not mean not exploiting resources. Urban management is driven by sustainable and unsustainable revenues, with the highest proportion of sustainable revenues reaching about 30% of total revenues in the country. Therefore, achieving sustainable economic revenues is crucial for local governance.

In recent decades, urban management in Iran has increasingly faced numerous challenges due to various social, cultural, political, executive, financial, and legal factors. Rapid and often uncontrolled urban development, driven by the rapid urban population growth, has exacerbated existing problems and issues. The concept of sustainable development attempts to integrate growing environmental topics with socio-economic issues. Sustainable development can be seen as a change in understanding the relationship between humans and nature and among humans themselves, contrasting with the perspectives of the past two centuries (Naibi, 2024).

Thus, the present study aims to examine the impact of urban smartification and urban security on achieving sustainable urban development.

Research Background

Zahra Ahmadi (2024) conducted a study titled "Formulating Sustainable Urban Development Strategies Using SWOT, ACEPT, TOPSIS Techniques (Case Study: Kermanshah City)." The main objective of this research is to formulate sustainable urban development strategies for Kermanshah. The research method is applied in terms of purpose and descriptive-analytical in terms of method and nature. Data collection was done through documentary-library methods. The sample size of this study is 30 experts and managers. For the analysis of the collected data and providing appropriate strategies, the SWOT model was utilized. Then, to prioritize the strategies derived from the SWOT technique, 5 professors and experts responded to a second questionnaire, and the TOPSIS technique along with the ACEPT model was used for ranking the strategies. The results show that the most important strategies for Kermanshah city fall into the offensive position and include tourism development, agricultural development, service and industrial development, commercial and trade development, and communication development (Ahmadi, 2024).

Power System Technology
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Fereshteh Nejad (2024) studied "Evaluation of Sustainable Urban Development Strategies: Application of Smart City Services Sustainability Classification." This article defines smart city paradigms comprehensively regarding contemporary urban challenges. This definition includes pursuing sustainable development goals and the need to integrate resilient urban behaviors specifically to respond to climate change impacts. This scenario also defines smart cities as tools to help policymakers and urban managers guide solutions based on emerging information and communication technologies to achieve those strategic urban plans that address these issues. Therefore, an analytical framework is proposed here to address the existing research gap concerning knowledge in this area. This framework allows leveraging smart city ICT to achieve not only the economic goals, which are intrinsic features of smart city initiatives, but also other sustainability dimensions, including environmental, social, organizational, and cultural goals. To achieve this, general sustainability index frameworks as well as a set of smart city indices are reviewed. These are examined as potential resources for specific classifications of smart city services for sustainable urban development. By integrating various options, the sustainability dashboard, once recommended by experts as an index system, is revised. This dashboard is adapted as a framework for analyzing and maintaining strategic targeting of smart city solutions throughout their full lifecycle in terms of sustainability. To complete the qualitative-analytical classification framework, the services provided by a real smart city solution, i.e., the Ilam Operations Center, are chosen as a model. This work enables examining the 9-year transition of this center from a broader, more capacious, strategic, and innovative configuration concerning sustainability dimensions towards a more operational and limited combination that has always been dedicated to the economic dimension (Nejad, 2024).

Tavakolian and Gheirati (2024) studied "Urban Green Space Management in Line with Sustainable Development." This research examines the role of urban green space management in environmental sustainability. The main objective is to assess the impacts of urban green space management on environmental preservation and sustainability enhancement in cities. The research method involves both qualitative and quantitative approaches. Data collection is based on existing resources regarding urban green space management, air quality, water resources management, and tidal analysis. Statistical methods and data analysis are used to analyze the results. Additionally, case studies and comparisons between areas with and without green spaces are employed. The study investigates the effects of urban green space management on air quality, water resource management, and tidal reduction. For air quality, the impacts of different types of urban green spaces on air purification and pollution reduction are assessed by collecting and analyzing air pollution data in areas with abundant green spaces and those with less green space. The impact of green spaces on water resource management is evaluated by comparing water infiltration rates in soils with and without green spaces, assessing their effects on reducing flood risk and improving groundwater quality. The study also examines the effects of green spaces on tidal reduction and runoff control in cities by analyzing hydrometeorological data and the impact of green spaces on flood risk reduction and waterlogging (Tavakolian and Gheirati, 2024).

Power System Technology
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Elahe Mahdi et al. (2023) conducted a study titled "The Impact of Smartification and Urban Resilience on Sustainable Urban Development Mediated by the Flexibility of Urban Spaces with a Crisis Management Approach." The purpose of this research is to examine the impact of smartification and urban resilience on sustainable urban development mediated by the flexibility of urban spaces with a crisis management approach. The research is applied in terms of purpose and quantitative in nature, executed through a correlational survey method. The statistical population consists of Tehran citizens, with a sample size of 300 selected through cluster random sampling. The data collection tool is a researcher-made questionnaire with 88 items, with reliability confirmed by a Cronbach's alpha of 0.813. Data analysis was performed using SPSS 26 and R 9.2 software. The goodness-of-fit index (GOF = 0.725) indicated that the model had an appropriate fit with the data. Smart city ($\beta = 0.973$) and urban resilience ($\beta = 0.861$) had the most significant impact on sustainable urban development through the mediation of flexible urban spaces ($\beta = 0.471$). Thus, leveraging smart technologies can design spaces that are resilient and flexible, capable of adapting to various environmental and public needs. Designing such spaces leads to sustainable urban development, enhances urban capacities during crises, supports management institutions, and improves the quality of life by reducing the damage caused by crises (Mahdi et al., 2023).

Bagheri Mehrabadi (2023) studied "Sustainable Development and Analysis of Indicators and Explanation of Strategies for Achieving Urban Smartification." This research aims to explore the movement towards smart cities: strategies for the framework of becoming a smart city. The research is applied in terms of purpose and descriptive-survey and correlational in terms of research method. The research population includes all experts, specialists, and elites in the field of urban planning and management, with a purposive sampling method used to select individuals in Esfarayen. Data collection was done using a questionnaire derived from Kumar et al.'s studies (2018). Data analysis employed the F-AHP technique and Expert Choice software. Results showed that the human factor (citizenship) with a relative weight of 0.553 ranked first, followed by the governmental factor (governance) with a relative weight of 0.447. The smart transportation factor ranked first with a relative weight of 0.488, followed by smart people with a relative weight of 0.311, and smart living with a relative weight of 0.201. Additionally, results indicated that the smart economy factor ranked first with a relative weight of 0.369, followed by the smart environment factor with a relative weight of 0.324, and the smart security factor with a relative weight of 0.306 (Mehrabadi, 2023).

Taghavi and Shafiei (2023) studied "Analysis of Effective Indicators on Urban Smartification Achievement in Urban Areas (Case Study: Isfahan City)." The aim of this research is to prioritize the indicators affecting the achievement of urban smartification and rank the areas relative to these indicators in Isfahan. The research is applied-developmental in terms of purpose and descriptive-analytical and survey in terms of method. The statistical population consists of experts in urban planning (urban services, urban development and architecture, urban transportation, ICT, human

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resource planning and development, and municipal services). Using the snowball method, 50 experts were selected as the sample. Data collection was done through library-documentary sources and field studies, and data analysis utilized the AHP method. Results indicated that the indicator of improving urban pollution status had the highest priority with a coefficient of 0.41, while the indicator of citizens' trust in service-oriented organizations had the lowest priority with a coefficient of 0.024. Areas 5 and 6 ranked first, and areas 14 and 11 ranked last concerning the desired indicators. Finally, recommendations were provided to improve the status of areas relative to the desired indicators (Taghavi and Shafiei, 2023).

Argasi et al. (2022) in their research stated that today, creating a smart city without considering sustainable development, and vice versa, will pose problems for future city management because the two terms "development" and "sustainable" are appropriate and desirable together. This research, using descriptive and analytical methods and studies of related documents and books, examines smartification and its role in sustainable urban development. The results of the research and studies indicate that the solution to creating real smart cities is attention to human and social factors alongside smartification. Comprehensive cultural, social, political, and economic development is necessary for creating a perfect smart city (Argasi et al., 2022).

Research Methodology

The present study is descriptive and has been conducted using library research methods. Data has been collected from books, articles, and reputable scientific and research databases.

Discussion

Sustainable Smart City

A sustainable smart city is a novel concept of a sustainable, livable, and efficient city that integrates new generations of technologies and information, such as the Internet of Things (IoT), cloud computing, big data integration, and geographic information, to expedite planning, construction, management, and smart city services (Abdoli & Moradi Asl, 2015).

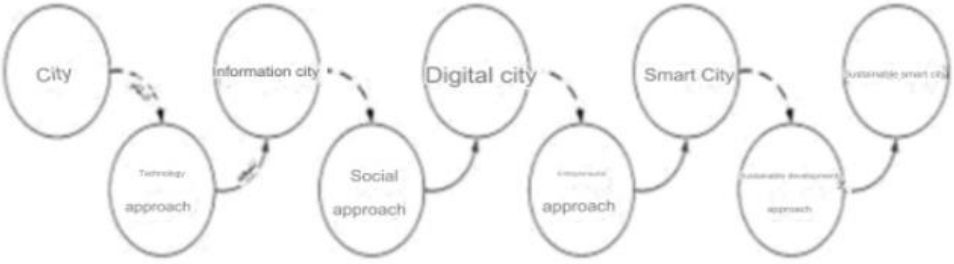

Figure 1: Sustainable Smart City

Power System Technology
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The development of a sustainable smart city can offer simultaneous benefits, including industrialization, informatization, and sustainable urban development. This concept has also been introduced as a tool to achieve sustainability amidst advancements in information and communication technology. The idea of transforming a city into a sustainable smart city has recently emerged as an integrated model to address urban issues and make cities more livable. The formation of the sustainable smart city concept can be attributed to five global trends: environmental issues and sustainable development, urbanization and urban growth, sustainable urban development and sustainable cities, information and communication technology, and smart cities. More broadly, the challenges of sustainability and rapid, increasing urbanization, along with the growth and expansion of information and communication technology, have led to the emergence of the sustainable smart city. There are three groups regarding the definition of smart sustainable cities:

1. One group advocates the development of technological infrastructure and focuses on sustainable development policies.

2. The second group views the implementation of electronic government services as a prerequisite for the development of smart sustainable cities.

3. The third group argues that existing urban development models do not meet the needs, resources, and priorities of cities.

The International Telecommunication Union (2013) defines smart sustainable cities as innovative cities that use information and communication technology and other tools to enhance the quality of life, the efficiency of urban activities and services, and competitiveness, while meeting the needs of the present generation without compromising the ability of future generations to meet their own needs, considering social, economic, and environmental dimensions. Major et al. (2013) assert that a smart sustainable city is one where investments in human and social capital, as well as new and old infrastructures, lead to sustainable economic growth, high quality of life, and prudent resource management through participatory governance. Hojer and Wangel (2015) also believe that such a city meets the needs of the present generation without compromising the ability of future generations to meet their own needs and avoids using the environment beyond its local limits, utilizing information and communication technology (Moqaddari Isfahani, 2020).

Performance of Smart Cities

The evolution of smart city projects indicates a fundamental shift in the approach and design process of smart cities. By reviewing definitions and approaches to smart cities over the past two decades, three distinct stages can be identified in how cities have engaged with information and communication technology and used it in urban development. The transformation of smart cities

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began with technology-focused approaches from large technology companies introducing smart solutions into cities. Subsequently, urban management entered the arena of smart cities, and eventually, citizens became central to the smart city concept. Today, many cities are still in the first or second stages of the smart city transformation process, while leading cities have entered the third stage. In the latest studies, traces of the fourth generation of smart cities can also be observed.

First Generation of Smart Cities: Technology-Centric Vision

This stage emerged from international technology companies' approach to cities, introducing smart technologies and solutions. The emphasis on maximizing the use of advanced technologies became the basis for urban transformation, with cities required to purchase and implement the offerings of these companies. This technology-centric vision led to increased job opportunities and economic growth. However, many cities adopted and advanced towards smart technologies without a comprehensive understanding of the impact of these technologies on urban life quality. This first generation, driven by large technology companies, faced criticisms for not involving citizen engagement and vibrant urban spaces. For instance, the vision of Cyberjaya in Malaysia aimed to create a smart version of Silicon Valley but was never fully realized (Hasani & Ahmadi, 2020).

Second Generation of Smart Cities: City Management-Centric Vision

In this stage, city management, rather than large technology companies, assumed responsibility for planning and designing smart city initiatives. Cities with visionary mayors sought to understand how to utilize smart technology to enhance urban life and developed creative urban solutions. One of the earliest examples of this generation is Rio de Janeiro, where the then-mayor, with IBM's assistance, developed a comprehensive smart sensor plan in 2002. Recent examples include Barcelona, with over 20 smart city programs and more than 100 projects, including wireless internet access, smart lighting, and improved transportation infrastructure. This generation still operated under a top-down approach, where information and communication technology was a tool rather than the core of smart city development (Ishaqi & Bahraini, 2015).

Third Generation of Smart Cities: Citizen-Centric and Public Participation Vision

In the third stage, the focus shifted from technology and urban management to citizen involvement and public participation. This generation of smart cities began using co-creation (Creation-Co) with direct citizen involvement to achieve new urban solutions and improve quality of life. The emphasis is on social equity, providing local communities with greater opportunities to be active and influential. Examples include Vienna, transitioning from the second to the third generation of smart cities by utilizing citizens as primary assets, and Vancouver, which engaged over 30,000 citizens in designing its Green City 2030 plan. Barcelona also used citizen participation to address

Power System Technology
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urban challenges and gather ideas and suggestions. Today, very few cities rely solely on large technology companies for smart city initiatives. Many cities now employ comprehensive plans led by urban management to create efficient and innovative urban environments (Rajabi & Khosravi, 2017).

Importance of Smart City Safety

Every year, numerous incidents, ranging from fires and collapses to accidents, earthquakes, and floods, result in significant financial and human losses. Thousands are injured, and many lose their homes. Additionally, new technological advancements pose risks to human lives. Despite improvements in health indicators and advancements in public health, people now face greater threats from natural disasters and accidents such as traffic accidents, plane crashes, and environmental pollution (Ebrahimi & Hosseini Janab). Urban management must effectively manage and continually enhance its capabilities to mitigate the effects of natural disasters in cities. Recently, enhancing urban safety, particularly against fires and unexpected incidents, has gained attention. One method to improve safety and facility protection is through the implementation and updating of management and technology methods and smart solutions. According to research on quality of life, the factors of "human happiness" can be summarized into three comprehensive categories: a sense of security, social integration, and self-respect. These fundamental needs of human societies, referred to as the "human happiness triangle," can be broken down in urban management into: the sense of security for citizens, the ability to communicate and engage in social activities with others, and involvement in social and urban affairs where citizens' opinions and needs are valued. Including vulnerability reduction programs in urban development plans for citizens exposed to hazards and natural disasters is essential. Protecting lives, valuable knowledge, skills, production tools, industrial facilities, and urban services from the effects of fires, accidents, and natural disasters should be integral to national planning and urban management. "Acting for safety benefits society. Ignoring basic principles incurs irreversible costs and damages to individuals and the broader community. When a fire occurs, seconds are valuable and can make the difference between life and death. Safety, like an umbrella, covers the entire community and is related to public culture. Where culture is fostered, a safer future community can be hoped for. Citizens should perform tasks with all safety aspects in mind, as the benefits and returns of this are reflected back to themselves. Some think that safety measures are a cost, whereas investing in safety is an investment."

Urban Safety Plans and Smart City Solutions

In cities worldwide, safety plans addressing fires are studied and implemented in various ways. These plans can be categorized as follows:

1. Plans specifically focused on fire prevention.

Power System Technology
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2. Plans where fire safety is one component.

3. Plans focusing on rescue and emergency response.

4. Plans focusing on prevention.

5. Plans integrating prevention, rescue, and emergency response.

6. Plans enhancing urban safety against fire incidents.

7. Plans focusing on smart safety and firefighting.

Given that most environmental damage and unsustainable development result from urbanization and industrial growth, the most impactful points for achieving sustainable development stem from urban centers. As technologies and communication systems develop, tools, machines, and management systems become increasingly smart and automated. In urban contexts, smart management of systems and services leads to substantial savings. Intelligent transportation and traffic control, spatial data utilization, smart materials, e-banking and online shopping, virtual administrative sites, remote education and healthcare, and remote security and safety control are methods and systems that are continuously developing and becoming more prevalent. Intelligent control of urban safety and a transformative approach to urban design using new systems are crucial and necessary (Ministry of Interior, 1993).

Discussion and Conclusion

The concept of smart cities and smartification has become very prevalent today. This concept includes improving the quality of life in terms of services, increasing attractiveness for tourists, and promoting social cohesion and safety. Smart living encompasses cultural amenities, electronic health services, social services, and public safety tools such as surveillance systems and emergency networks. In the past century, with the rapid growth of urbanization and associated problems and considering the impact of industry and modernization on urban life, attention to creative urban areas, electronic innovations, and computer hardware is essential for accelerating and optimizing tasks. One of the driving forces is globalization or technological revolution, which usually revolves around information and communication technology. Therefore, a smart city is one where municipal services, including government and private sector services, are conducted online and around the clock with high quality and safety using information and communication technology tools and applications. This eliminates the need for citizens to physically move to access government and private sector services.

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References

1. Ahmadi, Z. (2024). Development of urban sustainable strategies using SWOT, ACEPT, and TOPSIS techniques (Case Study: Kermanshah City). *Geography and Human Relations Quarterly*, 6(4). Retrieved from https://civilica.com/doc/2024628
2. Arghasi, H., & Ghaasemi, M. (2023). Smartification and its role in urban sustainable development. In *5th National Conference on New Technologies in Architecture, Civil Engineering, and Urban Planning*, Tehran. Retrieved from https://civilica.com/doc/1661268
3. Esfahani, M., & Bahraini, G. (2015). Sustainable development of cities with an energy consumption reduction approach based on regional climatic characteristics. In *3rd National Conference on Climate, Building, and Energy Consumption Optimization with a Sustainable Development Approach*.
4. Bagheri Mehrabadi, M. (2024). Sustainable development and analysis of indicators and strategies for achieving urban smartification. In *6th International Conference on Strategic Ideas in Architecture, Civil Engineering, and Urban Planning*, Mashhad. Retrieved from https://civilica.com/doc/1873700
5. Taghavi, M., & Shafiei, M. (2024). Analysis of factors affecting urban smartification (Case Study: Isfahan City). *Journal of Geography and Urban Space Development*, 10(3). Retrieved from https://civilica.com/doc/1855069
6. Tavakolian, M., & Arani Ghayrati, L. (2024). Examination of urban green space management towards sustainable development. In *12th National Conference on Environment, Energy, and Natural Resources*, Tehran. Retrieved from https://civilica.com/doc/2018538
7. Hatami, A., Sasanpour, F., Zepiyazu, A., & Soleimani, M. (2021). Sustainable smart cities: Concepts, dimensions, and indicators. *Journal of Applied Geography Research*, 21(60).
8. Hosseini, Z., & Ahmadi, F. (2020). Definition of criteria and indicators for smart cities in new cities with an emphasis on smart living. In *National Conference on Civil Engineering, Architecture, and Information Technology in Urban Life*.
9. Hamzei, A. M., Bandarabad, A., & Shahabian, P. (2024). Definition of indicators and key components for urban smartification. In *3rd International Conference on Architecture, Civil Engineering, Urban Planning, Environment, and Islamic Art Horizons in the Second Step of the Revolution Statement*, Tabriz. Retrieved from https://civilica.com/doc/1960985
10. Khosravi, A. (2024). Estimation of sustainable urban development strategy. In *23rd National Conference on Urban Planning, Architecture, Civil Engineering, and Environment*, Shirvan. Retrieved from https://civilica.com/doc/2021641
11. Rashidi, M., Adib, J., Arabshahi, Z., & Yadollahi Movahed, F. (2024). Development of evaluation indicators for achieving smart cities and proposing a local model in Qom Metropolitan Area. In *22nd International Conference on Information Technology, Computer, and Telecommunications*. Retrieved from https://civilica.com/doc/2009629
12. Rajabi, A., & Khosravi, M. (2017). Smart cities: Concepts, indicators, and implementation. In *International Conference on Civil Engineering, Architecture, and Urban Planning*.
13. Salemi, S., & Salimanzadeh, L. (2024). Examining the relationship between social capital and urban sustainable development (Case Study: Khuzestan Province). In *4th International Conference on New Approaches to Public Relations in Iran*, Isfahan. Retrieved from https://civilica.com/doc/2025161

Power System Technology
ISSN:1000-3673
Received: 06-04-2024 Revised: 15-05-2024 Accepted: 28-06-2024

14. Abdoli, S. F., & Moradi Asl, A. (2015). The role of e-city in achieving smart city infrastructure. In *1st International Conference on Geographical Sciences*, Khwarizmi Institute of Higher Education, Shiraz.
15. Farshtan, M. (2024). Evaluation of urban sustainable development strategies: Application of smart city service sustainability classification. In *11th National Conference on Civil Engineering, Architecture, and Sustainable Urban Development*, Tehran. Retrieved from https://civilica.com/doc/2018823
16. Kamkar, M., Shams, M., Heydarpour, F., & Ghorbani, Sh. (2024). Smart grid and IoT for future smart cities in Iran. In *1st National Conference on Urban Regeneration, Safety, and Crisis Management*, Islamshahr. Retrieved from https://civilica.com/doc/1976683
17. Moqaddari Isfahani, F. (2020). Redefining the concept of smart cities and the process of city smartification. *Humanities and Cultural Studies Research Institute*, 1(2).
18. Mahdi, E., Mahdi, A., & Saadati Khomsheh, M. (2024). Examining the impact of smartification and urban resilience on urban sustainable development with the mediation of urban space flexibility from a crisis management perspective. In *3rd International Conference on Architecture, Civil Engineering, Urban Planning, Environment, and Islamic Art Horizons in the Second Step of the Revolution Statement*, Tabriz. Retrieved from https://civilica.com/doc/1961156
19. Naibi, A. (2024). The role of urban services in sustainable urban development from an economic perspective. In *21st National Conference on Civil Engineering, Architecture, and Urban Planning*, Shirvan. Retrieved from https://civilica.com/doc/2019236
20. Nazari, F., Kashef, S. M., & Behnam, M. (2020). Modeling the role of humble leadership style in employee voice behavior at the Ministry of Sports and Youth: The mediating role of psychological empowerment and psychological safety. *Studies in Organizational Behavior and Management in Sports*, 7(25), 78-65.