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***Cultural and urban transformations in
Algerian society in light of the growing concept
of the smart city***

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ABSTRACT

These research papers aim to address the idea of Algerian smart cities, which is a demand that is emerging on the international and national horizon, with the distinctive effectiveness and dynamism that smart cities possess in light of the growing idea of information and communication technology. These cities work to improve the quality of public services provided to individuals, in line with the developments the world is witnessing today in the fields of computing, digitization, remote sensing systems, and artificial intelligence methods and technologies. What we see today is that smart cities have revolutionized the world, because these cities provide us with a high-quality sustainable environment that offers people a better life and a decent standard of living through the development that has taken place in these cities due to the quality they provide in the cultural, educational, health, industrial, environmental, transportation and public facilities of the state...etc.

Keywords: Smart City, Technology, Applied ethics, artificial intelligence.

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INTRODUCTION

The developments in the fields of media and communication sciences have changed the mechanisms, systems, and cultural, urban, economic, environmental, and governance structures of societies since the beginning of the current century, in line with modern smart technology. This smart transformation has led to the formation of a new pattern, a turning point, and a new challenge in the smart life of individuals and groups in all parts of the world since the beginning of the twentieth century and up to the present day.

The emergence of smart communication tools, various smart robots, smart transportation, sensors, and various systems, and the transition of societies to the world of digitization and artificial intelligence, etc. has formed a distinct turning point in the social, economic, political, religious, educational, and environmental life of the individual.

This has led societies to strive to make their cities more developed in order to advance state institutions and achieve a social environment that encourages creativity and innovation and provides a high-quality sustainable environment. This change has been reflected in various aspects of life, including cultural and urban aspects, in the world, with a change in patterns of human thinking and behavior in light of the growing idea of the smart city in Algeria.

- **Research Question :**

Has the development of the smart city concept altered the cultural and urban landscape in Algeria? What are the cultural and urban dimensions of the smart city? And has the smart city contributed to achieving sustainable development?.

- **Research objective:**

The research seeks to introduce the smart city, focusing on its role in developing intellectual, cultural and urban awareness, because it provides society with a sustainable, advanced and comfortable environment.

2. smart city transformation framework:

2.1 The philosophy of a smart city:

The concept of smart cities varies according to the diverse means, technologies, fields, and societies that have contributed to their development. Through the transformation cities have undergone in the age of information and communication technology, we have witnessed the growth of the smart city concept, from the digital world (the digital city) to the emergence of e-cities, then the virtual city, and finally the knowledge city, which encompasses data collected across various fields and sectors to advance information and

knowledge. Several trends have emerged highlighting the importance of smart cities due to their characteristics that allow people to comfortably simulate reality and achieve well-being in all aspects of life. Some definitions of smart cities include:

The Smart Communities Forum defined them in 2006 as regions that provide innovation systems and information and communication technologies to the local community, combining the intelligence of individuals and institutions that promote learning, innovation, and digital spaces, thus enabling creativity and knowledge management (sanaa rabhi - mustapha aouni, 2023, p. 456).

Smart cities in the modern era are characterized by highly advanced technological and scientific features. This development is evident in various fields, and smart cities work to improve the quality of life for residents by providing innovative smart services. The philosophy of these cities promotes a smart lifestyle by improving air and water quality, and by equipping various public spaces and cultural and recreational facilities with the latest innovative technologies and mechanisms, supported by artificial intelligence. This aims to transform human lifestyles for the better, while simultaneously enhancing social, cultural, economic, political, and environmental aspects of life, among others. This aligns with the roles assigned to this modern era, which offers people a better life thanks to the use of technology to improve public services and facilitate daily life. Smart cities can significantly contribute to enhancing the well-being of their residents and making life more comfortable and enjoyable.

A smart city is one that has an advanced system based on an infrastructure that relies on digital communication and information technology to monitor and track its parts, components, residents, and basic infrastructure of services, equipment, road and railway networks, tunnels, airports, ports, economic and industrial facilities, various buildings and real estate, a communications network, and diverse resources such as water, electricity, gas, and vehicle fuel (Al-Aqeel Mohammed Abdullah, 2014, p. 4).

Based on the discussions held by the Smart Communities Forum, they believe that a smart city must include the services and features that are available in a city, such as:

- a)** It works to activate the role of information and communication technologies in all fields and sectors.
- b)** It ensures high-quality education and effective training for individuals and groups, while motivating individuals to learn digital processing techniques and methods.
- c)** It attracts a qualified workforce and provides ongoing training for all segments of society to achieve the concept of smart citizens.
- d)** It develops strategies and future plans to improve digital, electronic, knowledge-based, and technological services.
- e)** It works to support smart cities in all aspects to achieve a smart environment, a smart economy, smart living, smart mobility, smart governance, etc.

In view of what the author “Harir Ahmed” wrote, the thinker – Eric Robinson – believes that the smart city systematically seeks to find and encourage innovations in the field of city systems through technology (Ahmed Harir, 2020, p. 55).

2.2 Smart cities and sustainable urban planning:

The transformation of the city is a new pattern for man in light of the technological acceleration - because it provides him with a sustainable environment dominated by innovation, development, advancement and intelligence. Given the importance of media and communication technologies and modern technology, the Ishraq Technology Center in the Kingdom of Saudi Arabia took the initiative to formulate the annual report on the importance of smart cities in improving the quality of social, economic, political, social, service, knowledge, health and environmental life, cyber security, protection of the privacy of individuals and institutions, electronic data processing, smart transportation and smart public institutions services.

For more information, please refer to the annual report issued by the Technology Foresight Center – Kingdom of Saudi Arabia via the following link:

<https://www.mcit.gov.sa/sites/default/files/202307/>

What we find in the introduction to the report issued by the Technology Foresight Center is that: “Smart cities work to improve the use of resources and reduce energy consumption and waste, leading to a more sustainable urban environment after sustainable urban planning, which has been a major focus for smart city officials. It is likely that by integrating modern technologies and making data-driven decisions, smart cities create more environmentally friendly and resource-efficient urban environments” (Smart Cities Report - The Future of Smart Cities in the Age of Modern Technologies, 2023, Technology Foresight Center, Ministry of Communications and Information Technology, Kingdom of Saudi Arabia, p. 18).

Although smart cities offer many solutions to cultural, social, economic, political, environmental, and knowledge-related problems, etc., they also pose a challenge to humanity and impose different ethical standards on us, including, for example:

- a) Medical and biological ethics.
- b) Information ethics.
- c) Environmental ethics.
- d) Technology ethics or e-ethics.
- e) Space technology ethics.
- f) Information and communication technology ethics.

- **Privacy and security risks:**

The technical processing of data in smart cities exposes the privacy of citizens through random uses or exposes the city's infrastructure to cyber attacks and data breaches. This necessitates the development of smart cities through the protection of user and institutional data, strengthening cyber security from cyber attacks and hacking, and preserving the electronic privacy of these smart cities, which have provided individuals with a better life than cities that do not rely on smart technology. Despite what has been said and is being said about the nature of smart cities, they have become the main concern of all segments of society because of the gaps they create in various fields and areas.

- **Increasing socioeconomic gaps:**

Regarding what was presented in the report on smart cities, we focused on what happens as a result of the increase in various problems within smart cities. According to their vision, this may lead to the inability of countries to pay for their readiness to transform cities into smart cities for several reasons, including the cost of transforming homes, businesses, or educational institutions into smart cities... This creates a digital divide that shows us the disparities in the ability to access the services included in smart cities (Report on Smart Cities - The Future of Smart Cities in the Age of Modern Technologies, 2023, Technology Foresight Center, Ministry of Communications and Information Technology, Kingdom of Saudi Arabia, p. 20).

3. The Smart City Project in Algeria: Transformations and Challenges:

3.1 smart cities research papers in Algeria:

The Algerian state initiated the smart cities project, as the Minister of the Interior, Local Authorities and Urban Planning, Mr. noureddine bedoui, participated on Wednesday, June 27, 2018, in the opening of the proceedings of the World Smart Cities Investment and Technology Summit 2018, organized within the framework of the "Algeria Smart City" project launched by the province of Algiers, at the International Conference Center in Algiers. The new project also focused on the prevalence of a culture of digitalization among the Algerian citizen in order to improve the quality of public life.

Participants at the conference emphasized the need to leverage digital technologies for sustainable development, capitalizing on the advantages of the digital economy, which has become the global economy of today. They also highlighted Algeria's readiness to provide better conditions and incentives for investors in new information technologies, starting with supporting young people in establishing their own small businesses by

making readily available financial resources accessible to them. Furthermore, they stressed the importance of attracting skilled Algerian expatriates to contribute effectively, from their countries of residence, to Algeria's development across all sectors. These initiatives are among the recent proactive measures taken by the Algerian authorities to benefit the national community abroad in the areas of housing, employment, and investment.

This meeting provides an opportunity to showcase the latest technological advancements and investment strategies. It will also allow for discussions on current trends, challenges, and the objectives of creating smart cities, as well as the exchange of expertise related to technologies and the smart city environment. Furthermore, it will facilitate coordination among various experts to attract Algerian expatriates to transfer their skills and expertise to their homeland.

This summit will see the participation of approximately 40 countries and 15 internationally renowned institutions in the field of new and advanced technologies, startups, and pioneers in smart city investment. (Ministry of the Interior, Local Authorities, and Transport, Opening of the World Smart Cities Investment and Technology Summit. Article presented on the occasion of the opening of the 2018 World Smart Cities Investment and Technology Summit, Algiers, accessed on 30/11/2025, 21:00, at <https://www.interieur.gov.dz/index.php/ar/80>).

The summit was attended by numerous experts, leaders, and economic stakeholders from major cities around the world, including Paris, Seoul, Caracas, Kigali, San Francisco, Vancouver, and London, as well as representatives of decision-makers seeking to explore avenues for cooperation between different countries. International institutions and organizations such as NASA, the World Economic Forum, the World Bank, the United Nations, and academic institutions like MIT and the University of Toronto also participated, along with technology leaders from Silicon Valley and other global technology hubs (Sabah Belkaidoum - Hayat Maman, 2019, p. 75).

The Algerian city of Sidi Abdallah, a city of dreams, is considered a significant hub in the current century, as it is the first model of a smart city. It houses massive housing projects, most notably the public housing development program with more than 5,000 units and the "AADL" (sale-lease) program with more than 44,000 housing units. This city is the first smart city model to be completed since independence (Article "Sidi Abdallah City: A Model for the First Smart City in Algeria," accessed on 30/11/2025 at 22:26 at <https://radioalgerie.dz/news/ar/reportage/96311.html>).

They end up considering it a "dream city" because it boasts state-of-the-art industrial and technological hubs. This city relied on precision and adherence to specific international standards and well-defined plans, involving all relevant disciplines, in developing these smart neighborhoods.

Smart cities rely primarily on the Internet of Things (IoT), in addition to applications, user interfaces (UI), and communication networks. The Internet of Things is a network of computers, smart devices, and sensors that can communicate with each other, collect and exchange massive amounts of data, send this data to a central cloud-based service, process this data, and share it with end users in a useful way.

4. CONCLUSION:

Improving the quality of life in smart cities in Algeria requires us to develop theoretical, practical, scientific, and field-based strategies in multiple areas. These strategies must be based on a culture of security and peace, which is fundamental to protecting the public and private privacy of citizens and various institutions in the Algerian state. To implement smart city applications, we must have a comprehensive awareness of digital citizenship and e-governance, and utilize modern technologies such as artificial intelligence, various advanced devices that operate on remote control systems, block chain, etc.

In response to the demands of the times, digital and communication transformations, sensor systems, artificial intelligence mechanisms, and various robotics, we must work to improve environmental quality, promote safety, and make the smart lifestyle of individuals more efficient.

This will be achieved by striving to build a smart city system that includes smart science, universities, institutes, colleges, schools, hospitals, institutions, smart homes, smart mobility, a smart environment, a smart economy, smart energy, and smart water management, while maintaining the safety and security of individuals through awareness campaigns, regulations governing the process, and benefiting from leading international and national experiences and ideas in the field of modern smart cities, in order to strive to achieve more organized and developed smart cities.

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