



Humanizing Smart Cities as an Approach to Enhancing Urban Quality of Life: A Sociological Study of the Humanization of Technology and Urban Space

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Abstract

This article examines the rapid transition towards smart cities amid technological development and the increasing digitalization of urban space, together with the social and human challenges accompanying this process. The study asks how technical intelligence and the human dimension can be balanced in smart cities in ways that enhance urban quality of life. It aims to analyse the concept of smart cities and its principal foundations, highlight the importance of humanizing this urban model, and examine its implications for residents' everyday lives. It also assesses the role of a human-centred approach in reducing social and spatial disparities within smart cities and strengthening urban justice. The study adopts a descriptive-analytical approach, analysing scientific literature and presenting selected international examples. The findings indicate that integrating the human dimension into smart urban planning contributes to improved quality of life, stronger community participation, greater urban justice, and more inclusive urban sustainability. Technology becomes more effective and sustainable when deployed within a comprehensive human-centred vision that places residents' needs and lived experiences at the heart of urban transformation.

Keywords: smart cities; humanization; humanizing smart cities; quality of life; urban life

I. Introduction

Over recent decades, the world has undergone an unprecedented urban transformation, reflected in the accelerating pace of urbanization and the growing number of people living in cities. Cities have consequently become the principal centres of economic, social, cultural, and political activity. This transformation is no longer merely a demographic phenomenon; it has become a central challenge requiring cities to reconsider their planning models, management methods, and capacity to respond to changing urban-living needs. Cities are now expected to develop new solutions that ensure continuity and competitiveness while preserving residents' quality of life. In this context, smart cities have emerged as one of the leading contemporary approaches to urban planning. They use information and communication technologies, digital systems, and data to improve the efficiency of urban services, rationalize resource use, and promote sustainability. Many countries now pursue this model as a means of overcoming traditional urban deficiencies and reorganizing the

city according to more effective and innovative principles.

Despite the technological and developmental dimensions of urban transformation, a city is not merely a technical system or operational infrastructure. It is a historical human creation in which social relations take shape, identities are built, rights are exercised, and quality of life is experienced. Excessive emphasis on smart solutions may therefore redefine the city in terms of efficiency, control, and management at the expense of its social and human dimensions. This approach may deepen social and spatial disparities if differences in residents' ability to access digital services are overlooked or if residents are not genuinely involved in planning and decision-making. A human-centred examination of the smart-city model is therefore needed—one that places people at the centre of urban transformation, not merely as users of technology but as social actors who shape the city.

Against this background, the humanization of cities has emerged as an approach that seeks to restore the human dimension to contemporary urban development by focusing on residents' needs and lived experiences and their right to a safe, just, liveable city that enables interaction, participation, and belonging. Humanization is not presented as the opposite of technology; rather, it is a guiding framework that directs its use and gives it a social dimension.

Humanizing smart cities becomes particularly important when linked to quality of life. Quality of life can no longer be reduced to economic indicators or service levels; it is a multidimensional concept encompassing environmental, social, cultural, and psychological aspects. Urban quality of life is associated with people's satisfaction with their urban environment, their sense of safety, their ability to move around and interact, and their enjoyment of public space, alongside the preservation of resources and their sustainability for future generations.

Previous Studies

In recent years, growing attention has been paid to smart cities, their humanization, and their relationship to urban quality of life. Numerous studies have examined the technological and social dimensions of smart cities, particularly the integration of the human dimension into urban planning. The principal findings of selected studies are summarized below.

The study "Urban Environmental Quality and Human Well-Being: A Social-Geographical Perspective" (Pacione, 2003) showed that quality of life in cities is related to several dimensions, including the built environment, services, health, education, security, and cultural and social opportunities. Improving these dimensions requires comprehensive strategies that connect urban planning with citizens' everyday needs.

The study "Smart Cities in Europe" (Caragliu, 2011) indicated that smart cities use information and communication technologies to improve the quality of urban services, strengthen resource sustainability, and increase managerial efficiency. The researchers nevertheless cautioned that an exclusive focus on technology may neglect the city's social and human dimensions.

The study "Understanding Smart Cities: An Integrative Framework" (Chourabi & Nam, 2012) emphasized that quality of life in smart cities depends on the city's ability to provide an environment that is safe, connected, sustainable, and inclusive of all residents, with particular emphasis on their meaningful participation in decision-making.

The study "Current Trends in Smart City Initiatives: Some Stylised Facts" (Neirotti, 2014) found



that cities applying smart-system principles while focusing on human needs achieve higher levels of resident satisfaction and quality of life than cities that focus exclusively on technology.

The study “The Role of Big Data in Smart Cities” (Hashem et al., 2016) stressed the importance of placing people at the centre of smart cities. It noted that incorporating human dimensions helps strengthen community participation, promote urban justice, and facilitate access to essential services for all residents.

In “Understanding Smart Cities: A Tool for Smart Government or an Industrial Trick?” (Anthopoulos, 2017), the author argued that smart cities require more than the development of digital infrastructure; technology must be integrated with urban policy to ensure genuine social and environmental sustainability.

Previous studies suggest that integrating the human dimension into smart cities is not an optional addition but a necessity for improving urban quality of life. Successful strategies combine technology, urban planning, and social policies to create sustainable and liveable cities while enabling residents to participate actively in shaping their city.

Research Problem:

Amid rapid urban change and continuing technological progress, smart cities have emerged as a major contemporary approach to addressing urban, environmental, and social challenges. Yet, despite their promises of efficiency and innovation, this transformation raises fundamental questions about the place of people within these cities and the extent to which smart solutions improve urban quality of life. Accordingly, this study addresses the following question: How does the humanization of smart cities contribute to enhancing urban quality of life?

Hypotheses

- 1-1. Integrating the human dimension into smart cities improves quality of life by strengthening community participation, promoting urban justice, and supporting more inclusive urban sustainability.
- 2-2. Smart cities become more effective and sustainable when they are developed within a comprehensive human-centred vision that places residents’ needs and lived experiences at the heart of urban planning.

Significance of the Study

The significance of this topic stems from its relevance to one of the principal challenges of contemporary urban development. The success of cities is no longer measured solely by their level of technological advancement, but also by their ability to provide a just, safe, and sustainable urban environment that ensures a high quality of life for different social groups. The study has both academic and practical significance because it contributes to:

- 1- Understanding the role that humanizing smart cities can play in improving quality of life.
- 2- Providing a conceptual and methodological framework linking technology with the social and cultural dimensions of people in smart cities.
- 3- Drawing on international models to offer recommendations that can be applied to future local cities.



Objectives of the Study

This study seeks to achieve the following objectives:

- 1- Analyse the concept and nature of smart cities.
- 2- Examine the concept of humanizing smart cities and its implications for residents' everyday lives.
- 3- Highlight the relationship between humanizing smart cities and urban quality of life.
- 4- Evaluate how humanizing smart cities can improve quality of life in light of international examples.

Methodology

The study adopts a descriptive-analytical approach based on a theoretical analysis of scientific literature on smart cities, the humanization of smart cities, and urban quality of life. It also presents international applied examples to understand how human-centred principles can be implemented in smart cities.

II. Cities of the Future: The Shift towards Smart Cities

Unprecedented urban growth has created new challenges for cities, which are now home to more than half of the world's population. In 2019, an estimated 55.72% of the global population lived in cities, and this proportion is expected to reach 68% by 2050 (United Nations Economic and Social Commission for Western Asia, February 2022). Urbanization places pressure on growth, competitiveness, performance, livelihoods, infrastructure, the environment, natural resources, water and energy management, and climate change. These pressures call for smart solutions based on information and communication technologies that can improve cities and reduce the economic, social, and environmental effects of urban-development challenges (Doran, 2014), while encouraging a reconsideration of the city in the age of modern technologies.

Smart cities emerged as one possible response to urban challenges and have become a priority for many countries seeking to increase efficiency and improve the use of limited resources in order to create a high-quality living environment and conditions for sustainable development. New information and communication technologies enhance services across sectors and provide smart digital systems to support urban operations (Doran, 2014). What, then, is a smart city, and what are its foundations?

2.1. The Conceptual Framework and Foundations of the Smart City

A review of academic literature on smart cities reveals a variety of definitions. Key terms associated with the concept include "sustainability," "strategy," "resources," "innovation," "security," "systems," "information and communication technologies," "management," "administration," and "governance." The International Telecommunication Union (ITU) has highlighted this diversity by analysing more than one hundred definitions. Although the term has become widespread in public discourse and the media in recent years, it is also a subject of research at conferences and in scholarly publications and is used by authorities around the world.

Nevertheless, no single, universally accepted definition of a smart city has yet emerged. Nor is there scientific consensus on what makes a city "smart" or on the elements required to ensure a high quality of life and favourable living conditions. The implementation of the concept depends on several variables, including the country, region, context, and local issues.

Researchers have proposed different definitions of the smart city, although many agree that its distinguishing feature is the systematic implementation and use of information technology (Saouli Rim Amina, 2021).

Definitions emphasizing the technological dimension describe a smart city as one that uses information and communication technologies (ICTs) across sectors to develop technological solutions to the difficulties faced by large cities, particularly in managing essential infrastructure, public transport, and construction in response to population growth (Simard, 2015). A smart city can also be defined as an innovative city that uses ICTs and other means to improve quality of life, ensure efficient urban operations and services, enhance competitiveness, and meet the economic, social, environmental, and cultural needs of present and future generations (United Nations Economic and Social Commission for Western Asia, February 2022). The European Union describes smart cities as places where cities, industry, and citizens work together to improve urban life through integrated, more sustainable solutions, including applied innovation, better planning, and intelligent use of ICTs. A smart city is thus resilient and performs well across sectors through interaction among the economy, government, transport, the environment, and everyday life, supported by aware and autonomous citizens (Vargas, May 2014).

From a social perspective, a smart city is also creative and knowledge-based. It focuses on knowledge activities and high levels of education and creativity, relying on individual creativity, knowledge-producing institutions, digital communications infrastructure, and knowledge management. A smart city can therefore be understood as one that responds to residents' needs, ensures their well-being and safety, and protects resources and the environment within a sustainable system. It draws on people and technology to create services and uses management mechanisms such as optimization, facilitation, organization, anticipation, and adaptation to achieve sustainable economic development and a high quality of life. Its principal domains include the economy, mobility, the environment, living conditions, and governance. All these should be grounded in people and technology and guided by sustainability so that resources are preserved for future generations. This is the challenge facing the cities of the future.

The establishment of smart cities is intended to achieve several objectives:

- • Develop technological solutions to address the difficulties faced by major cities.
- • Improve quality of life by collecting, using, and analysing data to enhance the lives of people in cities (Asbar International Forum, 4–6 November 2019).
- • Ensure the efficiency of urban operations and services. In this context, smart-city planning and urban policy concern how new information and communication technologies are used in public administration to improve the city's current condition across different urban domains (Simard, 2015).
- • Ensure productivity and competitiveness.
- • Meet citizens' economic, social, environmental, and cultural needs, particularly in the management of essential infrastructure, public transport, and construction in response to population growth.
- In general, through participatory governance and ICT-based solutions, the smart city seeks to achieve sustainable urban development, with significant effects on quality of life, productivity, and competitiveness (Thomas, 2018).

2.2. Main Dimensions of the Smart City

Research by Rudolf Giffinger, an expert in analytical research on urban and regional development at Vienna University of Technology, indicates that a smart city should perform well in six domains. His model identifies six pillars: a smart economy (competitiveness), a smart environment (natural resources), smart governance (participation), smart living (quality of life), smart mobility (transport and ICT), and smart people (social and human capital) (Ludovic, 2014).

Diagram of the six dimensions of the smart city (inspired by Giffinger).



Source: Prepared by the researcher.

- • Smart economy: the city's economic competitiveness, measured through factors such as innovation, entrepreneurship, productivity, labour-market flexibility, and integration into national and international markets.
- • Smart people: citizens constitute the city's human and social capital. This dimension concerns residents' qualifications as well as their diversity, openness, creativity, the quality of social interaction, and participation in public life.
- • Smart governance: a transparent approach to city management that incorporates citizens' participation in managing their city's affairs.
- • Smart mobility: local and international accessibility, the quality of infrastructure connected to ICT use, and innovative, sustainable, and safe transport systems.
- • Smart environment: environmental quality and resource management. A smart city should promote green spaces and good air quality, manage resources sustainably, and protect the environment. Eco-neighbourhoods are local examples of intelligently managed environments.
- • Smart living: factors related to quality of life, including culture, health, safety, education, tourism, and social cohesion.

Some researchers have adapted Rudolf Giffinger's model to propose other smart-city frameworks (Ludovic, 2014). Marie-Andrée Doran proposes three fundamental dimensions:

- ✓ • The economic dimension (public administrations and economic actors).
- ✓ • The social dimension (centred on citizens).
- ✓ • The environmental dimension (natural resources and infrastructure management).

The three-dimensional model of the smart city.



Source: Marie-Andrée Doran, “Qu’est-ce qu’une ville intelligente?”, Le Sablier, Votre ville est-elle SMART? Regard sur les communautés intelligentes, vol. 21, no. 1, 2014, p. 20.

2.3. Modern Technologies as a Tool for Transitioning to a Smart City

The idea of the smart city is not entirely new. It forms part of the broader trend over the past two decades towards the gradual and widespread use of information and communication technologies across activities such as computing, geomatics, positioning systems, the Internet, and social media. These technologies aim to simplify citizens’ everyday lives as much as possible by bringing together and enabling interaction among three elements (Gérard Divay, 2014). Intelligence lies in the ability to produce something new through this intersection: the technological dimension (big data, wireless technologies, sensors), the social and economic dimensions (citizens as co-producers of services rather than passive recipients), and the institutional dimension (cooperation and integration among systems and actors from different environments).

This interaction creates a collectively organized and integrated smart city, combining imagination with strong potential for mobilization. It brings together experimentation in areas such as energy economics, sustainable mobility, efficient information networks, infrastructure, functional relationships, interdepartmental and citizen-facing policies, and services of all kinds.

The world’s most advanced cities aspire to connect devices, buildings, and vehicles through the Internet of Things (IoT), which links physical objects to the Internet. These range from everyday objects such as light bulbs to medical devices, mobile devices, smart appliances, and traffic signals (Red Hat, 2019). The purpose is to improve citizens’ lives and increase sustainability through environmental monitoring, energy-saving devices, renewable energy, water technologies, and other green technologies. Smart-city applications also support traffic management, water and wastewater systems, security, and emergency response.

Experts estimate that by 2040, 65% of the world’s population will live in cities, bringing increased emissions, water and energy consumption, and waste. Through smart technologies such as sensors, wireless networks, and communications devices, cities can develop integrated systems to manage and improve essential urban services and facilities.

Most smart cities are classified according to factors combining the economy, human capital, technology, sustainability, social cohesion, transport, leadership, urban planning, innovative thinking, and the deployment of technologies. They also use the Internet of Things to improve residents’ lives today and in the future. Among the world’s leading smart cities are London



(England), Zurich (Switzerland), Taipei (Taiwan), New York (United States), Barcelona (Spain), Singapore, Paris (France), Oslo (Norway), Amsterdam (the Netherlands), and Surat (India) (Locke, 2023).

III. From Humanization to the Humanization of Smart Cities

The city is a historical human creation and a record of the history of urban life. It is a setting for social and cultural life and for economic and political activities. The history and changing built forms of cities tell the story of human beings as thinkers and creators, capable of producing urban environments in particular times and places in response to their needs and in pursuit of improved spaces and quality of life.

In the ongoing effort to improve cities, enhance residents' quality of life, and reduce the economic, social, and environmental effects of urban-development challenges, new ideas have been proposed, concepts implemented, and technologies developed. This is particularly significant in the current technological revolution, which has affected many fields and transformed—and continues to transform—forms of construction, production, and the organization of life.

Smart cities are one expression of the technological revolution, artificial intelligence, and new information and communication technologies. These have enabled cities to improve services across sectors, build smart digital systems to support urban operations, increase efficiency, and improve the use of limited resources. The goal is to create a high-quality living environment and conditions for sustainable development in which people remain the central concern and active driving force.

Against this background, the concept of “humanizing cities” has recently gained prominence. It seeks to strengthen the human dimension in the development of cities, including smart cities, and to support vibrant, sustainable communities in which urban life is more attractive and humane. What, then, is meant by “humanization,” and more specifically, by “the humanization of cities”?

3.1. Examining the Dimensions of Humanization

“Humanization” is a contemporary philosophical term used in different intellectual contexts. It carries a range of epistemological and cultural meanings with global implications, emerging from a Western intellectual tradition shaped by its own historical and geographical circumstances. Its historical and philosophical roots are associated with the Enlightenment and the shift away from ecclesiastical and theological thought towards rationalism and science. Humanization sought to restore to Western people the rational thought, intellectual production, and creative capacities that theological thought was perceived to have constrained, recognizing the human being as capable, distinctive, and different from other beings. Ali Harb writes that “humanization is the fruit of the Enlightenment and the overturning of the theological vision of the world and humanity” (Harb, 2004).

The term “humanization” is among the most ambiguous and complex concepts, with multiple meanings and a breadth that allows different interpretations depending on intellectual traditions and historical contexts. Its meaning varies among philosophers, religious scholars, and scientists. As a result, it can appear normative, vague, and open to appropriation by different parties (Harold & Chatelan, 2017). Its complexity is increased by related and commonly used terms such as “humanity,” “humanism,” “humanist orientation,” and “humanistic doctrine.”



To understand and unpack the concept, it is necessary to examine the linguistic dictionaries from which it emerged, identify the words and derivations used to express it, and then consider its contexts and intellectual meanings. The Arabic term is used to translate “Humanism,” derived from the Latin “Humanitas,” referring to a person’s cultivation of the sciences through which human nature becomes clear and the human being is distinguished from other animals (Al-Hanafi, 1986). In Lalande’s well-known philosophical dictionary, it is described as a considered form of human-centred thought that begins with understanding and evaluating the human being and excludes anything that alienates people from themselves, whether by subjecting them to supernatural forces or by degrading them through treatment below the dignity of human nature (André Lalande, 1986). Hashem Saleh describes it as an ethic of human nobility that recognizes the genius of humankind, celebrates human creativity, and confronts the inert forces of nature with the living power of human beings. Humanism, in this view, is the disciplined effort through which people develop their inner capacities and all human potential, allowing nothing to be wasted (Saleh, 2005). Humanity is thus placed at the centre of the universe. On the basis of these perspectives, humanization may be understood as concern for human beings and their capacities for giving, communication, creativity, and continuous production.

3.2. Humanizing Cities: Giving Smart Cities a Human Dimension

Humanizing a city means making it “human” or “more humane,” which implies that the city has not yet reached that condition or has achieved it only inadequately. What meaning is assigned to “the human” in this context? Does humanization condemn material and moral disorder in urban life, defending the weak against the powerful? Does it address functional problems, such as creating centrality or cohesion across urban expansion; social problems, such as housing crises; health problems, such as reducing unhealthy conditions; or aesthetic concerns, such as beautifying the city? Does humanizing a city mean creating a place where individuals can live and exercise their freedom and rights, or building a harmonious city reconciled with itself—a way of recovering the city that has been lost?

Humanizing a city is a call to strengthen the human dimension in the construction of cities, including smart cities. It means integrating human considerations into urban planning and smart technologies (Rahbarianyazd, 2024), thereby supporting community vitality and sustainability and making urban life more attractive and humane. Humanization has been defined as applying a human orientation to something that is not inherently human so that it becomes compatible with human nature and better suited to human behaviour and needs (Shaaban, 2022). In another formulation, it means making the city more suitable and attractive to people, serving them and enabling them to enjoy life and develop their intellectual, scientific, and social capacities (Asbar Forum, 4–6 November 2019). In **Strengthening the Human Dimension in Municipal Work: Riyadh as a Model**, Dr Abdulaziz bin Ayyaf describes it as a concept and way of life that transforms a silent place into an active place whose vitality arises from its position within an urban fabric that enables individuals to shape their personal paths and communities to form their social identities (Osama Saad, 2025). This approach supports vibrant communities by transforming inert spaces into active places within a sustainable urban fabric. It places people’s functional, sensory, social, cultural, health-related, and aesthetic needs at the forefront of development, with the aim of improving well-being and strengthening local identity and the social specificity of place-users. Transforming a



“silent place” into an “active place” requires understanding the cultural, social, economic, and environmental dimensions of the place and their relationship with its users, as well as establishing a framework that can activate the space.

A review of the academic literature on humanizing smart cities suggests that this process expresses people’s rejection of cities dominated by steel and concrete and calls for the humanization of concrete (Harold & Chatelan, 2017). It seeks to return the city—its buildings, streets, spaces, air, and greenery—to its inhabitants, enabling them to regain agency, movement, identity, thought, freedom, rights, comfort, recreation, familiarity, and safety. A humanized smart city responds to residents’ needs, safeguards their well-being and security, and preserves resources and the environment within a sustainable system. The principal dimensions of humanizing smart cities can be outlined as follows:

- Social dimension: strengthen interaction among residents, promote inclusion, and enable local communities to participate in urban decision-making. This ensures that smart cities address social well-being rather than technical efficiency alone.
- Human and psychological dimension: improve residents’ psychological comfort and public health by designing comfortable, safe urban spaces and providing environments that reduce everyday stress and strain.
- Cultural dimension: protect local identity and urban heritage and ensure that technology does not erase a city’s cultural character. Respecting local culture in smart-city design strengthens citizens’ sense of belonging and identity.
- Environmental dimension: designing smart urban environments in accordance with environmental sustainability contributes to residents’ health and quality of life (Alexander Prado Lara, 2016).

For several years, urban-planning policies around the world have expressed ambitions to build and develop cities in more humane ways. UNESCO (June 1996) identified the humanization of contemporary cities as a major challenge requiring three components: the right to the city, participatory forms of governance, and active solidarity.

- First, the right to the city means fair use of urban space in accordance with sustainability, democracy, equality, and social justice. It is a collective right of all city residents, with priority given to vulnerable and disadvantaged groups. In practice, it includes self-determination and a decent standard of living; decent work; social security; the highest attainable standard of health; drinking water and other social services; adequate food, housing, and clothing; quality education; cultural participation; access to information; political participation; justice and peace; and the protection of minority rights, ethnic, racial, and cultural pluralism, gender equality, and migrants’ rights (Baghrish, 2022).

- Second, participatory governance is an innovative approach intended to make community members’ participation in decision-making more effective and inclusive, supporting the formulation, implementation, and evaluation of public policies, national strategies, and plans. It requires transparency and public accountability, stronger community dialogue, improved public policies and services, and clear commitments to citizens.



▪ Third, active solidarity is a core value in building a cohesive and prosperous society. Solidarity is not limited to a feeling; it is expressed through practical actions such as cooperation and supporting others. Such behaviour strengthens social responsibility and participation in projects that benefit everyone.

The primary aim of humanizing cities is to create a way of life suited to people and to plan urban environments in accordance with human needs while preserving a city's core identity and heritage. It seeks to increase recreational opportunities and urban prosperity and to prioritize human concerns in order to raise quality of life. It also improves the built environment socially and physically, supports growth and urbanization, increases residents' overall satisfaction, expands green spaces, adds trees and plants, reduces visual pollution, enhances natural scenery, and pays attention to the visual composition of cities in ways that improve comfort and happiness. Benefits include more opportunities for recreation and comfort for all social groups, a modern lifestyle, and better public health through dedicated spaces for sports and walking. Reduced dependence on different forms of transport and the availability of convenient facilities and services can also attract residents and stimulate commerce. Meeting on walking paths and in sports and recreational areas can strengthen social ties and help balance authenticity with modernity (Al-Zamil, 2024).

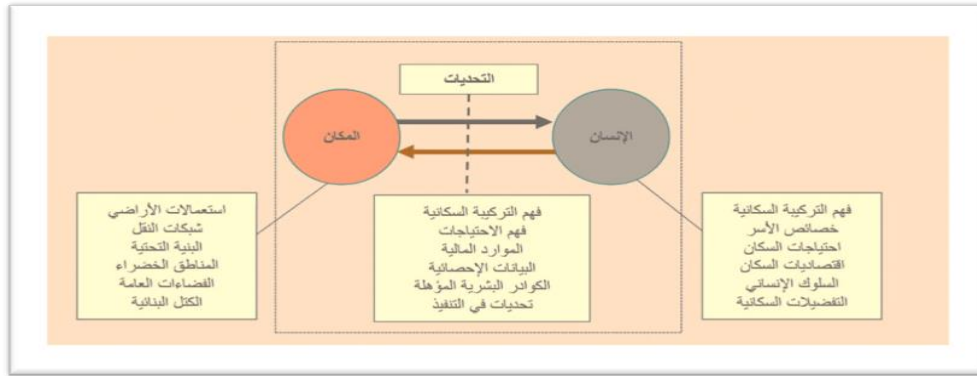
3.3. Humanizing Cities and Quality of Life: What Is the Relationship?

Humanizing cities requires incorporating essential human values and principles related to basic needs and attending to the city's social, economic, and environmental sustainability. Its aim is to enhance and humanize quality of life through dimensions that integrate sustainability, innovation, creative ideas, and technology.

Conceptual discussions of quality of life offer several definitions. Quality of life can be understood as the set of social, economic, and environmental factors that interact to affect a person's feelings, enjoyment of life, or happiness in the surrounding environment. It also refers to an individual's perception of their position in life within the cultural and value context in which they live and the extent to which that position corresponds to their goals, expectations, values, and concerns relating to physical health, psychological state, independence, social relationships, personal beliefs, and relationship with the environment. In this sense, quality of life refers to an individual's subjective assessment of their living conditions (Al-Ghannam, 2020).

Definitions generally agree that urban quality of life results from the interaction between people and the social, economic, and environmental conditions of the urban community in which they live. It reflects the degree to which people enjoy their lives and their happiness and satisfaction with the external environment (Shaaban, 2022). Quality of life is therefore a comprehensive concept grounded in the integration of place development and human development, enabling people to benefit from both the material and intangible dimensions of life.

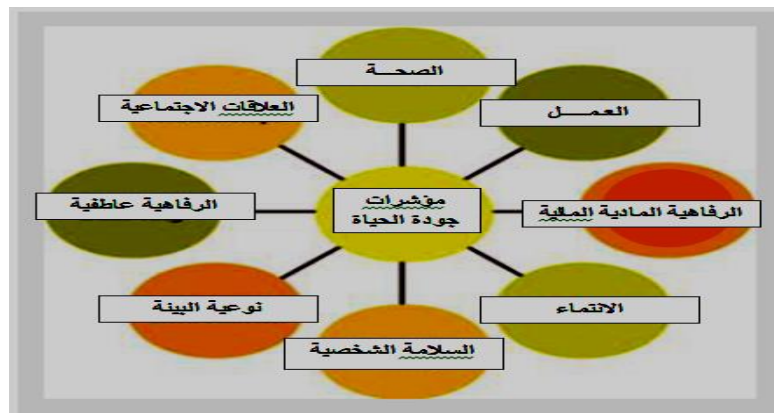
The principle of integrating place development and human development to achieve quality of life.



Source: Waleed bin Saad Al-Zamil and Nayef bin Fahd Al-Ghannam, “Planning and Designing Residential Environments within the Framework of Humanizing Cities and Quality of Life,” paper presented at the Housing Symposium, “Celebrating a Better Life,” Jeddah, Saudi Arabia, 20 February 2020.

Indicators used to measure urban quality of life include environmental quality and sustainability; levels of satisfaction, happiness, and well-being; educational and cultural attainment; diversity and prosperity; and community safety and security. These indicators are summarized in the following figure.

Indicators for Measuring Quality of Life in the City



Source: Waleed bin Saad Al-Zamil and Nayef bin Fahd Al-Ghannam, “Planning and Designing Residential Environments within the Framework of Humanizing Cities and Quality of Life,” paper presented at the Housing Symposium, “Celebrating a Better Life,” Jeddah, Saudi Arabia, 20 February 2020.

Quality of life depends on developing lifestyles by providing choices that increase well-being, improve living conditions and liveability, and create the conditions for a satisfying life. A vision for improving cities and making them more prosperous and humane can be based on the following foundations (Asbar Forum, 4–6 November 2019):

- • Partnership among stakeholders: the private sector, governments, and users.
- • Improving the quality of housing products and making them more attractive.
- • Giving developers scope to innovate through technology and new ideas.
- • Supporting active developers and creating more high-quality employment opportunities.

- • Effective participation in achieving quality of life.

Humanizing cities helps improve urban quality of life. Quality of life can be measured by people's satisfaction with the city's external environment and by whether the urban environment accommodates different human needs and provides a good level of comfort and happiness. Humanization is therefore a key indicator of urban quality of life, since both share the same objective: human well-being.

The humanization of smart cities contributes to improving urban quality of life through the following:

- • Human-centred design: pedestrian-friendly streets and comfortable public spaces that reduce stress and encourage physical activity.
- • Nearby, accessible services: planning that shortens distances and saves time and effort.
- • Stronger social interaction: squares, parks, and facilities that encourage people to meet and communicate.
- • A healthy and sustainable environment: reduced pollution, more green spaces, and improved air quality.
- • Inclusion and justice: attention to the needs of all age and social groups.
- • A sense of belonging and identity: respect for local culture strengthens people's connection to place.

IV. The Impact of Humanizing Smart Cities on Urban Quality of Life: International Examples

Experiences in cities such as Singapore, Paris, and Barcelona show that humanizing smart cities represents a qualitative shift in urban planning: technology is no longer an end in itself but a means of improving quality of life. These cities have focused on smart services that respond to everyday human needs, including easier mobility, expanded green spaces, and stronger social interaction. This approach has helped improve well-being, reduce pollution, and balance technical efficiency with the human dimension, making the humanization of smart cities essential to building sustainable and more liveable cities.

4.1. Arab and International Models of Humanizing Smart Cities

Many Arab cities are undergoing important transformations towards humanized smart-city development, integrating technology with human needs to improve quality of life rather than merely achieve technical efficiency. Key examples follow.

1.1.4Dubai—A Global Smart-City Model. Dubai is one of the region's leading examples of linking technology with everyday quality of life. Its smart-city approach is not merely a slogan but an integrated system of digital initiatives and applications designed to improve government services, simplify residents' daily lives, and enhance well-being. These initiatives include:

- • Dubai's digital platform, which brings hundreds of smart services together in one place, including DubaiNow, Rashed, and happiness-index services.
- • Converting more than 1,000 government services into smart electronic services, saving time and effort for citizens and residents.
- • Using smart data and analytics to improve public transport, traffic, and energy management.

- • Developing public spaces that are friendly to pedestrians and cyclists.
- • Emphasizing humanization to make residents' lives easier and improve the quality of everyday services (Dubai Government Media Office, 2023).
- The effects of Dubai's smart-city initiatives on quality of life include shorter waiting times for transactions, improved health and education services, increased resident satisfaction, and better environmental and social services. Dubai ranked fourth globally and first in the Arab region and Asia in the 2025 Smart City Index, with high satisfaction reported for health services, digital services, and green spaces (Dubai Government Media Office, 2025).

Dubai: A Global Smart-City Model



Source: Dubai Government Media Office.

4.1.2. Saudi Arabia: NEOM and Riyadh

▪NEOM: The City of the Future in Northwestern Saudi Arabia

NEOM is a large, innovative Saudi project described in the source as extending towards areas near the Egyptian and Jordanian borders and close to maritime trade routes (Al-Wefaq, 2018).

Under Saudi Vision 2030, NEOM aims to achieve three principal goals: exceptional liveability and a reimagining of urban life through advanced, environmentally friendly approaches; a thriving business environment; and a renewed concept of sustainability (Al-Hussein, 2023). It is considered one of the world's most ambitious smart-city projects.

NEOM is described as a 170-kilometre linear city without cars or conventional roads, designed so that services are within a five-minute reach. It is intended to operate on renewable energy and reduce carbon emissions. The project includes a floating smart industrial centre that uses automation and artificial intelligence to operate ports and logistics, as well as a smart mountain destination combining sports, hotels, and tourism activities. Smart systems are intended to control climate and facilities. Expected quality-of-life benefits include reduced pollution, environmental protection, integrated living with essential services nearby, and employment and educational opportunities in technology and energy. A city without conventional cars is also intended to reduce congestion (Al-Bahar, 2022).

NEOM: The City of the Future



Source: DealApp, “NEOM City Project

▪ **Riyadh: Transformation into a Smart and Human-Centred City**

Saudi Arabia’s capital, Riyadh, is experiencing major projects intended to improve quality of life and make the city more humane and sustainable under Vision 2030. These include planting millions of trees and expanding green spaces to improve air quality and provide places for relaxation; developing a large, modern downtown with distinctive architecture and smart residential and service areas; and creating major recreational, sporting, and cultural destinations. Expected benefits include more green spaces and public areas, easier mobility through smart infrastructure, recreational and cultural facilities that improve community well-being, and reduced congestion through public-transport plans and modern urban planning.

▪ **Riyadh: Transformation into a Smart and Human-Centred City**



Source: Not specified in the original document.

Saudi Arabia is working to transform its traditional cities into smart cities that focus on people and quality of life through:

- ✓ • Using renewable energy and reducing emissions.
- ✓ • Developing integrated digital infrastructure.
- ✓ • Improving transport and smart mobility.
- ✓ • Expanding green spaces and public facilities.
- ✓ • Supporting cultural, recreational, and economic activities.

3.1.4. Lusail City, Qatar: An Expanding Urban Model

Lusail is one of Qatar’s largest smart-city projects. It invests in advanced infrastructure and smart services intended to improve quality of life. Its features include smart traffic management, connected utility networks, and centralized data control, which are intended to reduce congestion

and increase service efficiency. Green spaces, modern public facilities, and broad pedestrian routes are intended to provide a healthy and safe environment.

Its expected quality-of-life effects include reduced pollution, greater comfort for residents and visitors, and modern urban facilities that support recreation, education, and mobility.

These examples show that smart cities in the Arab world are not merely technological projects. They can improve people's lives through simpler and faster government services, a clean and sustainable environment, convenient smart mobility, better housing and social services, and meaningful public participation in decision-making.

4.2. Western International Models of Humanizing Smart Cities

Modern smart cities seek to integrate digital technology with human needs so that they become more efficient and sustainable while improving residents' everyday quality of life. The following Western and international examples illustrate efforts to humanize urban environments, focusing on social interaction, environmental sustainability, and residents' comfort, with examples from Barcelona, Amsterdam, and Singapore.

4.2.1. Barcelona, Spain

Barcelona is a leading example of a human-centred smart city. Initiatives such as Superblocks reduce car traffic and increase space for pedestrians and cyclists, improving air quality and encouraging social interaction (Editorial Team, 2021). The city also uses participatory digital platforms such as Decidim Barcelona, which allow citizens to propose urban projects, participate in decision-making, and follow the implementation of public policies. These initiatives demonstrate the integration of the human dimension with smart infrastructure and strengthen participatory governance and urban quality of life.

Barcelona: A Leading Human-Centred Smart-City Model



Source cited in the original: "Barcelona becomes the world's second smart city," Hespress website. <https://www.hespress.com>

4.2.2. Amsterdam, the Netherlands

Amsterdam emphasizes community participation through the Amsterdam Smart City platform, which brings together government, companies, academic institutions, and citizens to develop smart solutions and more sustainable urban environments.

- Smart transport network: an integrated transport system that uses data to improve traffic flow and public transport.

- • Promotion of sustainable mobility: increase cycling and pedestrian routes and reduce private cars in urban neighbourhoods.
- • Human dimension: provide a healthy and safe urban environment that improves quality of life and reduces pollution.
- • Cultural dimension: incorporate art and cultural spaces into urban design, strengthening community belonging and identity.

These initiatives aim to improve quality of life through environmental sustainability and social inclusion.

4.2.3. Singapore

Singapore, located in Southeast Asia, is one of the leading countries using modern technology to manage urban affairs. It implements the Smart Nation strategy, which seeks to integrate digital technology and artificial intelligence to improve residents' lives.

Singapore uses intelligent transport systems, advanced digital health services, and sophisticated tools for managing resources such as energy and water, while focusing on citizens' well-being and happiness. This approach makes Singapore a leading model for humanizing smart cities, using technology not only to increase efficiency but also to improve urban quality of life comprehensively and sustainably.

Singapore's Smart City: A Vision of the Urban Future Combining Technology and Sustainability



Source: "Singapore is the World's 5th Smartest City, Top in Asia: Global Index."

<https://www.bing.com/images/search?view=detailV2>

V. Conclusion

The humanization of smart cities is one of the most important concepts for improving urban quality of life because it goes beyond a focus on technology to include human and environmental dimensions. By integrating advanced technology with human needs, cities can improve urban services and create more sustainable and liveable environments.

Cities that have adopted this concept, such as Barcelona, Singapore, and Amsterdam, demonstrate that humanizing smart cities involves more than increasing infrastructure efficiency; it also means enhancing residents' well-being and creating a healthy and safe urban environment.

The greatest challenge is to achieve a balance among technology, the environment, and people, so that cities are not merely technically smart but also places that support human life and improve



urban quality of life. Humanizing smart cities is therefore a fundamental approach to enhancing quality of life and making cities more liveable in the future.

Study Findings

The study concludes that the transition towards smart cities is insufficient if limited to technology alone. A human-centred approach that places citizens' well-being at the heart of urban planning is necessary.

The study also finds that humanizing smart cities improves urban quality of life by providing a healthy environment, effective services, interactive spaces, and environmental sustainability. The success of a smart city should therefore be measured by its ability to balance technological innovation with human needs in ways that strengthen residents' sense of belonging and comfort.

Responses to the Hypotheses

Hypothesis 1: Confirmed. Integrating the human dimension into smart cities helps improve quality of life by strengthening community participation, promoting urban justice, and supporting more inclusive urban sustainability.

Hypothesis 2: Confirmed. Smart cities become more effective and sustainable when developed within a comprehensive human-centred vision that places residents' needs and lived experiences at the heart of urban planning.

Key Challenges Facing the Humanization of Smart Cities and the Improvement of Urban Quality of Life

Smart cities that aim to humanize the urban environment and improve quality of life face several key challenges, which can be summarized and analysed as follows:

- • The digital divide: unequal access to technology and smart services affects not only individuals' technical capabilities but also social justice and economic opportunities. Smart cities that neglect groups unable to access technology risk reinforcing, rather than reducing, social inequality.
- • Privacy and digital security: smart cities collect large amounts of data about residents, from mobility patterns to health and energy use. Failure to protect these data can undermine trust in institutions and reduce community participation, contradicting the principles of humanized cities.
- • Technological bias: artificial intelligence and smart systems may reproduce biases embedded in data or algorithm design, leading to the exclusion of certain groups or unfair decisions.
- • Resistance to change: communities or officials may sometimes hesitate to adopt technological changes because of cultural factors or fear of losing control or employment.

Recommendations

To humanize smart cities effectively and improve urban quality of life, the following measures are proposed:

- ✓• Strengthen human-centred planning.
- ✓• Adopt urban policies focused on residents' everyday needs rather than smart infrastructure alone.
- ✓• Expand community participation by involving citizens in decision-making through digital platforms and local consultations.



- ✓• Achieve digital justice by narrowing the digital divide and ensuring that all groups can access smart services.
- ✓• Support environmental sustainability by investing in renewable energy, increasing green spaces, and reducing pollution.
- ✓• Develop sustainable transport by strengthening smart and environmentally friendly transport options and reducing dependence on cars.
- ✓• Protect data and privacy.
- ✓• Establish legal and regulatory frameworks that ensure information security and user trust.
- ✓• Learn from successful experiences by studying models such as Singapore and Barcelona and adapting them to local circumstances.

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