

# Towards More Human Cities in Egypt: Human-City Urban Planning Model HCUPM

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**Abstract** Cities accommodate over 50% of the world's population, a percentage that is expected to increase to 70% by 2050. Despite the indisputable significance of cities for our future, living in some cities has been a challenge; 91% of city residents live in polluted areas and face human casualties resulting from car accidents and health crises. In Egypt, new cities are being built aiming to create healthier environments. However, those cities are not always better places to live due to the lack of the human dimension in their planning. There is hence a great need for an approach that focuses on the ability to revive and restore this dimension in Egyptian cities. Based on a number of theoretical and analytical studies, the paper aims to develop a model that can measure the degree of the humanity of cities, thus, providing planners with a human-city urban planning model (HCUP Model). The model is expected to act as a contingency proactive planning tool for mitigating the negative impacts of our cities on human life and ensuring the integration of the human dimension in the planning process of our future cities. The research methodology includes an analytical examination of the most pressing issues confronting cities today, followed by the definition and principles of human cities, based on the theoretical study and analytical study of the most important global human city experiences, a proposed model for the human city (HCUPM) that can be applied in Egyptian cities will be developed. The model will be audited using a questionnaire for Egyptian experts in the field of urban planning.

**Keywords** Human Cities, Human-Scale,

Human-Oriented Planning, People-Centered Cities, Planning Cities, Human City Urban Planning Model

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## 1. Introduction

Shakespeare [1] wrote in *Coriolanus* "What is the city but the people?". A city is more than just the built environment. It is a mixture of people with all their cultures, complexities, differences, needs, hopes, fears, and aspirations. With the catastrophic problems that cities face, urban development models are more vital than ever before; sustainability, safety, inclusion, resilience, and putting people at the heart of the planning process are increasingly fundamental goals [2, 3]. To attain these objectives, city planners must confront those issues, and adopt an approach that emphasizes people and their needs while keeping the human dimension in mind. This is what human cities strive for.

Based on a number of theoretical and analytical studies, the paper seeks to develop a model capable of measuring the degree of humanity in cities. As a result, planners can have access to a human-city urban planning model (HCUP-Model). The model is intended to serve as a proactive contingency planning tool for mitigating the negative effects of our cities on human life and ensuring the integration of the human dimension in the planning process of our future cities.

## 2. Methodology

The research methodology includes an analytical study of the most important problems confronting cities today, followed by defining the concept and principles of the human city approach. An analytical study of the most important global case studies of human cities will be conducted; Accordingly, the proposed model for the Human City (HCUPM) will be produced. Case studies will be chosen based on a set of criteria. The most important pioneering case studies in the field of human cities, as well as case studies that are like Egyptian reality in terms of economic level, customs, and traditions will be selected.

The model will be audited using a questionnaire based on the Model developed through a literature review, and case studies, and it will also be reviewed by Egyptian experts in the field of urban planning. The questionnaire is aimed at assessing the model's applicability to the Egyptian case; Google Forms is used to distribute the questionnaires to respondents. The questionnaire community is a group of experts in urban planning, urban design, and sustainable development. The respondents' feedback was analyzed using SPSS and Microsoft Excel applications. The result will be a Human City Urban Planning model that can be applied in Egypt to restore the human dimension of our cities.

## 3. City Inhumane Conditions

Human city empathizes with its residents, respects them, and meets the needs of all segments of society; Provides a beautiful, healthy, human-friendly environment, accessible green areas, and social public spaces [4], however, our cities have moved away from being human, and they are becoming disdainful of people. 50% of the world's population lives in cities, a percentage that is expected to increase to 70 percent by 2050 [5], With this acceleration and expansion of cities' growth, there have been significant changes in city design and formation, the entire planning

process, including comprehensive planning, zoning planning, and so on, were dependent on city planning based on the concept of vehicle movement, and ignored the human dimension. As a result, residents, suffer from a lack of a pedestrian environment, a scarcity and maybe disappearance of green spaces, climate impact, pollution, inadequate housing, and services, traffic jams, unemployment, social inequality, societal tension, and insecurity are just a few of the aspects of city life that are detrimental to people's well-being [6, 7, 8].

### 3.1. Air pollution and Climate Change

Air pollution is estimated to kill seven million people every year. According to WHO data, nearly all of the world's population (99 percent) breathes air that exceeds WHO guidelines and contains high levels of pollution. As a result, air pollution is by far the most serious threat to human health. Around 70 percent of global energy consumption and greenhouse gas emissions are attributed to cities. Transportation accounts for half of a city's GHG emissions. Polluting emissions (SO<sub>2</sub>, CO, PM, NO<sub>x</sub>) are produced by automobile use in cities (ozone, among others), in addition to traffic congestion, noise, and the encroachment of public space [7, 9].

For decades, Egyptians have suffered from air pollution, especially in large cities like Cairo. PM<sub>10</sub> and PM<sub>2.5</sub> fine particulate matter levels, which pose the greatest risk to people's health, are several times higher in Greater Cairo than the World Health Organization (WHO) recommends. According to Egypt's Ministry of Health, every year, up to 2 million people seek medical treatment for respiratory problems caused by poor air quality. Climate change is another issue for Egypt, according to climate models. Egypt's average annual temperatures will rise by 2 to 3 degrees Celsius by 2050. The lengthening heat waves and increasing the frequency and severity of droughts [10, 11, 12], figure (1) illustrates air pollution in Cairo.



Source: Authors

**Figure 1.** Air Pollution in Cairo

### 3.2. Mobility and Transportation Problems

Cities today suffer from many problems because of planning that prioritizes cars over people. The most serious of these issues is the dominance of motorized, individual traffic as an alternative to pedestrian movement in the city, which causes a slew of issues, including increased pollution, health and psychological issues, and the risks associated with car accidents [7].

#### 3.2.1. Individual motorized traffic dominance

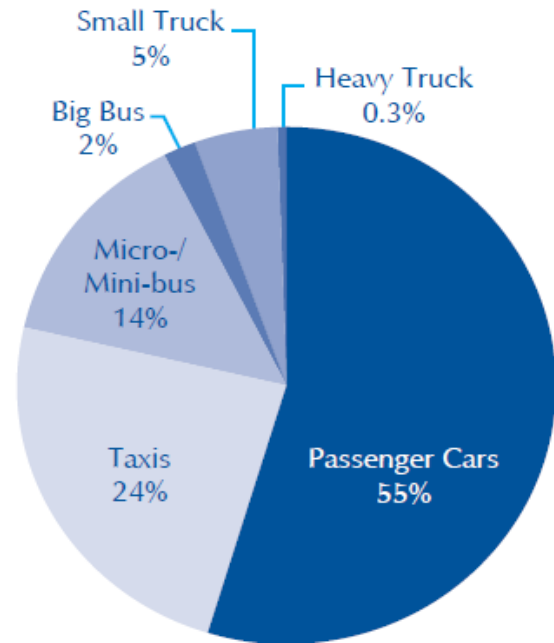
Individual motorized traffic dominance is the most significant challenge in transportation. This model has played a significant role in a self-perpetuating crisis, with traffic expected to increase by 50% by 2030 when compared to 2015 [5]. In car-friendly cities, intensive car use causes congestion and noise, both of which cause people stress. Furthermore, they have environmental and health consequences, such as potentially lethal air pollution. Attempts to alleviate traffic congestion caused by increased vehicle traffic have typically focused on road network expansion, resulting in even more traffic and traffic jams, pollution, and noise. To reduce urban pollution and greenhouse-gas emissions, a shift away from the long-validated model of the car-friendly city is needed [7].

In Egypt, cars are by far the most common mode of transportation. Cairo is dominated by private cars and taxis; congestion wastes approximately 8 billion USD, in Cairo each year; this figure is expected to rise to 17.8 billion USD by 2030 [11]. In addition, a World Bank study finds traffic congestion as the primary source of air pollution from transportation in Cairo [10]. Additionally, Cairo has inadequate public transportation with only about 1,500 standard buses and 70 kilometers of metro lines. There is currently no Bus Rapid Transit (BRT) system. Cairo's transit supply, whether large/standard buses, trams, or metros, is extremely limited; the necessary modal shift from private cars and taxis to public transportation is critical [11]. (Figure 2) illustrates traffic congestion in Cairo, and (figure 3) illustrates a modal split in the streets of Cairo.



Source: Authors

**Figure 2.** Traffic congestion in Cairo



Source: [11].

**Figure 3.** The modal split in the streets of Cairo

#### 3.2.2. Lack of a safe pedestrian-friendly environment



Source: [14].

**Figure 4.** The illustration by Karl Jilg shows how much public space we've given up to cars.

The majority of city streets were designed for automobiles rather than people; pedestrians were progressively squeezed together on sidewalks as the automobile conquered the world, and crowded sidewalks became an undesirable and global problem [13]. The illustration, created by Swedish artist Karl Jilg and commissioned by the Swedish Road Administration, demonstrates just how serious the situation is [14], as shown in (Figure 4). The consequences are catastrophic.

Every year, 1.24 million people are killed in traffic accidents [5]. The walking environment on most Egyptian streets is neither good nor safe because pedestrians are exposed to a variety of issues that force them to avoid using the sidewalk. Some of these issues are the results of numerous encroachments on the sidewalk that obstruct movements, such as the encroachment of shops, street sellers, and the usage of sidewalks for car parking. In Egypt, automotive accidents climbed by 17.8% in 2019, with 9,992 collisions recorded compared to 8,480 in 2018 [15]. (Figure 5) shows the pedestrian environment in Cairo.



Source: Authors.

**Figure 5.** Lack of a Safe pedestrian-friendly environment in Cairo

### 3.3. Public and Green Space Deterioration

Urban areas have traditionally been characterized by high population density and heavy construction to support modern facilities, like commercial buildings and transportation. They're now facing increasing pressures from population expansion, limited resources, and the growing impact of global climate change. The amount of public and green space within the city is one of the indicators for measuring SDG 11, where a scarcity of natural space creates an unhealthy urban living environment [16].

Egyptian Cities are very dense, and face an acute shortage of green spaces, in terms of quantity and distribution because of the absence of the human dimension and scale in the planning of the city, turning cities into cement forests, destroying their natural environment, and losing their green surfaces: the lung and the only breathing space for the population. Cairo, for example, the green space barely reaches 1.5 square meters per capita; while the standards for planning the green space range between 10 and 18 m<sup>2</sup> per person, and the local standard for new towns is 11-13 m<sup>2</sup> per person. The current situation is in complete contrast to this; in general, it is about 1.5 m<sup>2</sup> per capita; it is not evenly distributed; some areas do not reach 0.1 m<sup>2</sup> per capita, and can be considered urban deserts due to the lack of vegetation cover, while others relatively have Greenery more than 7 m<sup>2</sup> per person. By comparing satellite images in Cairo with the cities of the world, the problem is depicted [17]. Cairo is a gray desert compared to the green cities in the world as

shown in Figure (6).



Source: Google Earth, photo by: Matyas Rehak [18].

**Figure 6.** Part A and Part B: Turning cities into concrete forests without Public and green spaces in Cairo.

### 3.4. The loss of social public spaces

City space's traditional function as a social gathering place for city dwellers has been diminished, threatened, or phased out. For decades, the human dimension has been an underappreciated topic in urban planning, which has become increasingly focused on vehicular traffic. Furthermore, dominant planning ideologies—particularly Modernism—placed low precedence on public spaces, pedestrians, and the function of urban space as a meeting place for city dwellers. The fact that people who still use city space are increasingly being mistreated is a feature shared by almost all cities. In most cities around the world, urban dwellers face limited space, obstacles, noise, pollution, the risk of accidents, and generally deplorable conditions. This turn of events not only limited the options for pedestrians as a mode of transportation but also jeopardized the social and cultural functions of the city's space [4]

The cityscape of Cairo is notable for the lack of a public realm or venue that caters to all members of the Cairene community. Public spaces are being neglected, and social and cultural spaces are disappearing. Streets

have been reduced to a "simple space for movement" after previously serving as a large gathering space for the public. Streets are being killed as public spaces, and traditional typological configurations that have evolved over time and through human interaction with space are being destroyed. About Moulids and other major public festivities held in Cairo's public streets, the availability of general public space has been restricted or controlled, posing a threat to the socio-spatial distribution, where the city was reclaimed by high-income earners through gentrification and urban renewal at the expense of social space [19].



Source: [20]

**Figure 7.** Tahrir Square was a recreational public space in Cairo in the 1940s



Source: [21]

**Figure 8.** Tahrir Square as a traffic node

### 3.5. City Identity and Sense of Place

Cities' identities have emerged as an urgent issue for many countries in recent years. Every city has a distinct and valuable identity, which is manifested in its physical and visual form, as seen through the eyes of its residents and citizens [22]. Egyptian city has lost its identity, and the urban and architecture of the city have been subjected to many manifestations of distortion; so architecture began to

vary from era to era according to the circumstances of the stage politically, socially, and economically. Since the fall of the monarchy and the rise of the republican system, architectural practices have been characterized by intellectual duality, which led to the import of architecture and caused confusion in middle-class architecture. The brutal style of architecture, a French word derived from (raw concrete), which was represented in government and educational buildings and low-income housing, appeared and it continues to this day. The buildings that have spread in Egyptian urbanization have a western character that does not consider human needs and does not respect the human scale. (Figures 9.10) show the difference in architecture in Egypt in the past and nowadays [23].



Source: [24]

**Figure 9.** Historical building in khedivial Cairo



Source: Authors.

**Figure 10.** Buildings with no identity and don't respect human scale in Cairo

## 4. Human City Approach Definition and Principles

At the intersection of the challenges facing today's cities, one topic stands out: the importance of making cities more human, shedding light on what cities should care about the

most –people. This refocus on the human being responds to a sense that people have been lost in planning, designing, and building cities, where the emphasis has largely been on physical infrastructure, automobiles, and technologies. This has left us with cities that are often soulless, ugly, and difficult to navigate, as well as lacking in human scale [4, 25]. The responses have been diverse, it includes the New Urban Agenda [3], UNESCO's Quito contribution, the Culture: Urban Future report [22], Creative Europe's 'Human Cities' initiative "Challenging the city scale", Humane Cities Initiative at Stanford, and a wide range of city visions or plans with the word "human" in the title (Vitoria-Gasteiz as human scale City, Buenos-Aires Human City Strategic planning, Humanizing cities of Saudi Arabia (Saudi Vision 2030), the shift in design toward human-centered thinking and academic work such as that at Aalto University in Helsinki (TOWARDS HUMAN SCALE CITIES – OPEN AND HAPPY), as well as publications such as Cities for People, The Human City: Urbanism for the Rest of Us and Seeing Like a City.

#### 4.1. Human City Definition

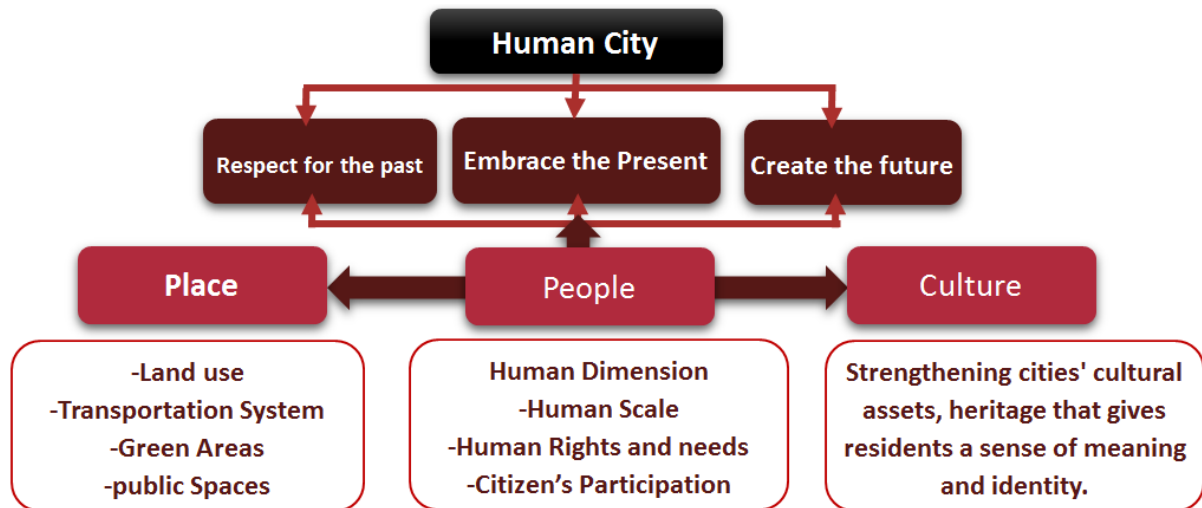
A review of the literature shows that there is no specific definition for the human city. The literature included various terminologies for 'human cities' such as Human-centered city, Cities for People, and People-friendly Cities". The Human City institute defined the human city as "A city where policies, practices, and initiatives are enacted to ensure the best of human endeavors can flourish and where citizens and communities can shape an equitable, affordable and a shared society" [26]:p.7, while Gehl [4] summarized the definition of the human city as a compact, sustainable, healthy, safe, and lively city that considers human characteristics (human scale, speed, and human senses), and with carefully designed streets, squares, and parks — creates pleasure for visitors and passers-by, as well as for those who live, work, and play there every day. Other literature has addressed the human city as "A city that addresses the varying needs of its dwellers through their life cycles and particularly focuses on areas where families (parents, children, and the neighborhoods that sustain them) are likely to live" [27]:P.17, human city is "A friendly city to children, the handicapped and old people, to society's most vulnerable members. It's human spaces, pedestrian promenades, parks, plazas, libraries, and public transport. Magnificent networks of tree-lined roads exclusively for pedestrians and cyclists could change the nature of cities and city living, making them much friendlier to people" [28]: P.101.

People-friendly cities mean smart and livable places that involve citizens' participation in the middle of planning and design whilst incorporating public policies that meet human needs. They commit to foster sensibility and access to culture, the arts, character, and identity, and protect every citizen's right to create, discover, share, and develop their vision of the city through a diverse range of cultural expressions, accordingly, building mutual respect and trust. People-friendly cities are committed to urban design that reflects urbanist principles. These principles promote walkability, dynamic people-oriented streets, mixed-use development, small urban blocks, local shops, and development that is to human scale [29]. UNESCO [22] defined Human-Centered cities as a cultural space that promotes social inclusion by incorporating heritage and cultural activities into the city planning, design, and urban strategies [22], human-centered city is "a city for citizens where citizens become city-makers and shapers, makers and co-creators of their evolving urban development [30]:p.16, it is concerned with the emotional, mental, physical and economic well-being of its citizens, and where the landscape has been designed at a human scale so as to be experienced through the main five human senses [30]:p.34".

Based on the preceding definitions, a human city is a city that puts people at the center of planning and design, respects the past by integrating heritage and traditional knowledge into urban strategies, embraces the present, and creates the future by enacting policies, practices, and initiatives to enable everyone in the city to meet their needs while also respecting the human scale, human rights, and allows citizens' participation in shaping their cities. Human city strives for happiness and well-being for all its residents at all planning levels, from policies and strategies to the finest details of urban design, promoting people-oriented mobility, mixed-use, green areas, and public spaces.

#### 4.2. Human City Principles

People are the foremost important priority within the process of city planning; the usual planning methodology, which focuses on buildings and traffic, must be reformulated so that people and city users become more visible within the planning process. This approach leaves to chance the foremost important aspects that make the city Vibrant, Safe, Healthy, and Attractive. By applying the Human City approach, we are going to work to determine a special path of thinking: humans first, then the environment tailored to their needs, rights, and respect for their characteristics [4, 25]. Figure (11) illustrates Human City Principles.



Source: Authors based on: [3, 4, 6, 7, 8, 26, 28, 29, 30, 31, 32, 33]

**Figure 11.** Human City Principles.

#### 4.2.1. Human dimension

A new and crucial planning dimension is the “Human dimension”. Years of neglecting the human dimension as a result of planning ideologies, rapid mechanization, and difficulties in transitioning from a model in which city life was an explicit part of the tradition to a model in which city life requires the active support of careful planning. We have a necessity and a rising readiness to rebuild cities for people. In the twenty-first century, emerging global problems underscore the significance of paying attention to and focusing on the human dimension in urban planning and design. Human features are as well as the needs and rights of those who utilize cities, are essential to human city planning [4].

##### A. Human Scale

Human scale is something that takes its starting point in the human body and the senses. Every old city was designed around how people moved their feet, how far their eyes could see, and how they utilized the surroundings." So, there is life; then there is space for life, and finally, there are structures on the outside of the spaces. "Life, space, and buildings in that order. Modernist planners and architects lost sight of the need for building on a human scale. Everything was done grandiosely as if it was not for the people. The human scale is a term that includes thinking about a physical environment that matches humans, and no matter where they are in the world, urban citizens share several human characteristics. The characteristics of the human body, senses, and speed are the key to good urban planning for people. The challenge is to build great cities with a comfortable human scale, related to pedestrians' scale, pace, and sense of place. A person walks at a maximum speed of 5 kilometers per hour; our chances of seeing and understanding what we see decrease dramatically at speeds faster than walking or running. (3 miles per hour), as in ancient cities where

traffic depended on walking speed, spaces and buildings were designed on a scale of five kilometers per hour (three miles per hour). Thus, people have time and pleasure to see the details of the buildings. In terms of field of view, low-rise buildings are compatible with the human horizontal sensory system, while tall buildings are not. The building and the street can be communicated from the bottom five floors. Above the fifth floor, the connection to the city quickly fades. [4, 31, 25].

##### B. Right to the city

One of our most valuable and underappreciated human rights is the freedom to create and reshape our cities [33]. Human rights are important because they set up the minimum requirements for living in freedom, equality, and dignity. It guarantees everyone the freedom of choice and expression, as well as the right to meet their basic needs for full development and enjoyment of their rights, such as education, water and sanitation, food, health, and housing [34]. The Right to the City is based on more than 50 years of experience and debate, defining the right to the city as the right of all current and future residents to live in cities that are just, inclusive, and sustainable. The right to the city entails the obligations of governments and individuals to assert, defend, and promote this right [35]. The right to the city includes the following elements:

(a) a city free of discrimination; (b) a city with increased political participation in the formulation, implementation, and monitoring of urban policies and spatial planning; (c) the city performs its social functions, ensuring equal access for all to urban shelter, goods, services, and opportunities, particularly for women and other marginalized groups. (d) a city with good public spaces that encourage social interactions and political participation, encourage social and cultural expression; embrace diversity, and promote social cohesion; A city in which public spaces contribute to the construction of safer cities while also meeting the needs

of the population. ; (e) a culturally diverse city that respects its inhabitants' customs, memory, identities, expressions, and social and cultural forms; and (g) a city with inclusive economies that provides all residents with access to secure livelihoods and decent work [35, 36].

### C. Human needs

Human needs have been defined to a variety of ways, ranging from universal drivers of human life in societies to purely subjective cultural structures. However, in general, they refer to the set of requirements - personal, economic, social, and political - that people must meet to avoid serious harm, achieve their goals, live a fulfilling life, and contribute to community development. Maslow [37]. developed a pyramid in which meeting basic needs (such as protection and subsistence) is needed before reaching higher levels of satisfaction (like status or self-actualization) [32, 38].

### D. Citizens' Participation

Building better cities for the future requires seeing others as collaborators rather than competitors. Good cities are planned and built by their residents [39]. Cities evolve to be human-centered and designed by and for their citizens, encouraging participation in a collaborative process and adhering to open government policies [40]. We need to listen to local communities, engage residents, and consider how planning will affect people overall.

The greater the level of participation is, the broader the range of methods available [41]. The methods should be tailored to the subject of the decision and the target groups, considering factors such as age, level of education, prior

knowledge, and time availability. Future workshops, round tables, planning cells, focus groups, citizen assemblies, public hearings, surveys, public forums, online consultation, e-petitions, online citizen juries, and a variety of mediation procedures are among the established formats that have grown steadily in recent decades [42].

### 4.2.2. Culture

More than two decades ago, in Habitat II, UNESCO called for a new paradigm of urban development "Humanizing cities" where development is focused on people, and the city encompasses a distinct set of spirituality, materialism, intelligence, and emotions, this encompasses art and literature, as well as lifestyles, communal living, traditions, and beliefs. For UNESCO, the real issue is to improve conditions for urban growth so that cities of peace, democracy, and development can be built. Twenty-first-century cities must put the individual at the center of public policy, reinvent the concept of cities and realize the many ways to take part in urban life. UNESCO's vision for the humanization of the city focused on re-establishing the role of cities as centers of cultural influence and democracy by using the power of culture to enhance human and inclusive cities. Strengthening cities' cultural assets, a heritage that gives residents a sense of meaning and identity, and creative opportunities that boost our cities' vitality, and prosperity, promoting social inclusion by integrating Heritage and cultural activities in city planning, design, and use of public spaces, as well as the integration of heritage and traditional knowledge into urban strategies [8, 22].



Source: Authors based on [37]

**Figure 12.** Maslow's Pyramid of Needs.

#### 4.2.3. Place

##### A. Mixed- Land use

Humanizing cities mean creating vibrant, secure, multi-use, walkable, and livable cities. Mixed uses of land achieve a human-friendly environment as it encourages efficient transfer between different activities by reducing travel distances, and the range of activities in each mixed-use area also encourages social interaction because people fulfill more needs than their needs in their local areas. Mixed-use of the neighborhood should include a diverse mix of uses such as affordable housing, childcare centers, schools, medical centers, open public spaces that promote walking or cycling trips within the neighborhood; And a combination of public spaces to meet the needs of a wide range of users (from children to the elderly) with a variety of needs. Jacobs [43] explains that city living has become undesirable because planners disregard the intuition and experience of those already living in cities. Jacobs also emphasized that urban thinking should take human beings as a priority; pay attention to basic human needs, community needs, and spiritual needs, and support bottom-up community planning by drawing on the wisdom of those who live in the city to find out what suits them best. Jacobs Basic Principles (Diversity): 1- A neighborhood should have a mix of uses or functions; 2- Blocks should be short. (Promoting walking as it would enhance the interaction of people). 3- The neighborhoods have a mixture of old and modern buildings. (More focus on preserving history). 4- Adequate population density creates security and creativity, as it creates more opportunities for human interaction. The densest neighborhoods created more "eyes on the street" than segregating and isolating people [4, 43].

##### B. Parks and green areas

Human societies need nature in and around them to flourish [44]. Green spaces have numerous physical and mental health well-being benefits. and are a critical component of urban health. Research has shown that urban dwellers are 21% more likely to have anxiety disorders and 39% more likely to have mood disorders than those who live in rural areas, and that green spaces, especially trees, are good for mental health, and the benefits of being in and around water include positive moods and reducing negativity and stress [6]. Viewing from windows or walking by trees, and gardens can help people recover from stress; nature views can be linked to a faster recovery time through lower stress levels, which promotes healing. Mounting evidence shows that close nature provides numerous benefits to city children and is an essential component of child development. as green areas help learn better and improve mental performance for children. Also increased green space in cities is an adaptable and mitigating response to climate change, reducing heat island effects, as climate change can be mitigated by planting

trees and plants in urban areas, such as street trees, green roofs and walls, parks, and garden areas [45, 46, 47].

##### C. Vibrant public spaces

Cities are places where people come together to exchange ideas, trade, or simply relax and enjoy themselves. The public sphere of the city - its streets, spaces, and gardens - is the catalyst for these activities, and it is the structure that allows the city to be revitalized and accommodate the various activities. The humane city, with its meticulously built streets, parks, and gardens, provides entertainment for both tourists and inhabitants. The humane city protects everyone's ability to conveniently access open areas, as well as the right to clean water. Everyone should be able to view a tree from their window, sit on a bench near their house with a children's play area, or walk 10 minutes to a park. The public realm is critical to strengthen human relationships, and human cities should include shared social areas such as parks and plazas where people of various backgrounds may sit and meet. Protecting public areas is critical to the city's well-being [4].

##### D. Human-centered transportation planning

City planners have realized that a lack of human scale leads to empty streets, and deserted streets are dangerous to walk through.' They've also discovered that a city full of cars pollutes the environment and that physical inactivity is bad for people's health. All these challenges can be overcome with human-centered urban planning. a human-centered sustainable transportation concept capable of providing a rapid, safe, and efficient urban landscape to all citizens.

Human-centered transportation relies on promoting walking, bicycles, and public transportation. Shared Streets/Woonerf is another form of human-centered transportation; the car is no longer the primary user on shared streets, resulting in increased pedestrian traffic, children's play, and social interactions. Woonerf's development is aided by a number of mechanisms, which include traffic calming measures and outdoor amenities that include seating, play equipment, trees, and parking spaces located between homes and roads [4, 45].

## 5. Egyptian Human-Cities Urban Planning Model

Based on the theoretical study and literature review, a theoretical model of the human city was developed, and an analytical study for a set of international experiences will be conducted to validate this model. As a result, the proposed Human City Urban Planning model suitable for application in the Egyptian context will be developed.

### 5.1. Human City Urban Planning Theoretical Model

To achieve the human city, we need to take care of every detail in the city, so we need a comprehensive planning model that includes all planning levels, starting from the national level, city level, local level, and urban design. The model can work both ways as a top-down planning approach through "Human City Strategic Planning," and the bottom-up through "pilot projects and local initiatives." (Figure 14) shows the theoretical model of the human city.

#### 5.1.1. National level

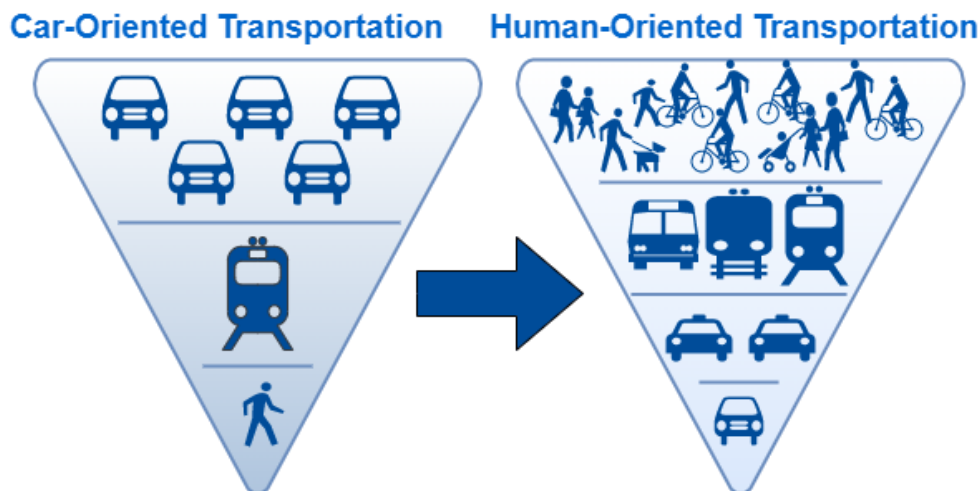
The National Urban Policy (NUP) is a national intervention mechanism and a valuable tool for governments to create a shared vision and a comprehensive framework for urban development in cities. To build a human city these policies must be based on the concept and principles of the human city (compact and mixed use-land policies, adequate housing policies, sustainable mobility, and adopting age and gender-sensitive participatory approaches to all phases of public policy and urban and land planning processes, from conception to design, implementation and evaluation) [5].

Urban legislation and regulations also are fundamental to creating human cities; the needs of citizens should be strongly linked to urban laws. Quality urban law promotes access to a safe, healthy, and inclusive urban environment; appropriate regulatory frameworks are required for the development and management of urban basic services, and legislation to ensure that everyone has equal access to adequate and affordable housing [5].

#### 5.1.2. City-Level

A city-wide strategic plan centered on the mantra "Human Cities", or "Cities for People" should be developed in order to create a Human city; provide a long-term vision for the city that puts people at the center, and be flexible enough to adapt to changes. The strategic plan begins with conducting studies and analyzes of the current situation based on the vision and needs of the city's residents, which requires interviews with stakeholders and workshops with the local community or their representatives. The next stage is to define the vision framework in collaboration with the residents, to identify the city's main challenges and opportunities, and to define the vision framework based on the people's interest. The human city's strategic planning includes the process of preparing strategic plans, land use plans, green areas, and transportation plans. And the history and intangible culture of diverse neighborhoods, vibrant public spaces, and natural areas should be incorporated into planning and policy initiatives to create and protect a distinct sense of place [5, 48].

In more regulatory advanced settings, zoning laws should be developed to serve as the foundation of urban regulations to encourage mixed-use, compactness and infill development, zoning laws regulate the density and height of built structures, as well as the physical constraints such as setbacks, facades, open spaces, and parking requirements, which are essential urban design tools for shaping built form. In some instances, zoning overlays are required to provide more specialized controls for specific elements such as land features, vegetation, or heritage [5].



Source: Authors based on Gehl Architects.

**Figure 13.** The Difference between Vehicle and Human-Centered Transport Systems

### 5.1.3. Urban Design

Urban design tools are critical for shaping cities, the relationships between infrastructure and land use, and the quality of the public realm, which includes streetscapes, parks, waterfronts, amenities, and other elements that provide a complete framework for the overall experience of the city life. The accessibility and design of urban spaces, as emphasized in the New Urban Agenda, can "promote or hinder social cohesion, equality, and inclusion". Good urban design outcomes promote open and accessible cities for all [5].



Source: Authors based on: [3, 4, 6, 7, 8, 26, 28, 29, 30, 31, 32, 33].

**Figure 14.** Theoretical Human City Urban Planning Model

## 5.2. Human City Case Studies

The concept of a human city has taken numerous shapes. Some studies have used a top-down planning strategy, while others have used a bottom-up method to incorporate local initiatives into planning. Since 2014, 12 European Union cities have taken part in the "Human Cities: Challenging the City Scale 2014-2018" project, which showcases efforts to reconnect inhabitants with their cities through bottom-up urban projects. It reimagines city life by

focusing on areas of quality of life and making living in it more convenient for humans. Saudi Arabia is aiming to execute Vision 2030's goals to humanize Saudi cities by improving urban living through a series of policies (Saudi Vision 2030). To realize the vision's goals, the "Quality of Life Program 2020" system was launched, aiming to place at least three Saudi cities among the top 100 cities in the world for quality of life. Another type of human city is the '15-minute city'. It is an adaptive and intuitive paradigm for people-centered urban development that has numerous names and shapes around the world, including Barcelona's and Vitoria-Gasteiz 'superblock.' The 'dynamic neighborhoods' of Bogotá, the '15-minute city' of Paris and Milan, the '20-minute neighborhoods' of Portland and Melbourne, the 'one-minute city' of Stockholm, and the 'Human-scale city/15-minute city' of BUENOS AIRES. This part of the study will involve an analytical examination of some international case studies of human cities to develop a model for the human city that can be applied in Egyptian cities.

### Case studies selection criteria

- Pioneering case studies reporting on successful human cities.
- Case studies in the last 5-10 years.
- Case studies that are similar to Egyptian reality in terms of urban, social, cultural, and economic dimensions.

### Selected case studies

- Denmark: Copenhagen: a people-oriented pioneer of urban planning.
- Sweden: Stockholm is a people-friendly city.
- Argentina: Buenos Aires A City for the People.
- Spain: "Vitoria-Gasteiz, human city"/ Superblock model.
- Saudi Arabia "Humanizing Saudi's Cities".

The Case study of Spain: "Vitoria-Gasteiz, a city on a human scale"/ Superblock model" [49], will be presented to illustrate the method of analysis". The case studies were examined using the stages of the theoretical model of the human city, beginning with a national study, then a city study, and finally an urban design study as shown in table (2).

#### 5.2.1. National level

Spain used a broad participatory process to develop "The Spanish Urban Agenda (AUE)" basing on New Urban Agenda 2030 "Sustainable future, with dignity for all, transform economies, the environment, and societies, and support the integration of certain essential elements: people dignity, prosperity, the planet, justice, and alliances". With the following Strategic goals: Guarantee access to housing, and basic services promote social

cohesion and equity; promote proximity and sustainable mobility; and improve resilience. Also established is The Urban Forum of Spain: a key platform to strengthen collaboration and coordination of actions by involving all stakeholders that contribute to sustainable urban development. The agenda also included indicators for monitoring and evaluation, such as "define goals to be achieved within a specific time frame [50, 51, 52].

### 5.2.2. City-Level "Vitoria-Gastrin, Human city Strategic Plan"

Vitoria-Gasteiz has been working for decades to become a more "Human" city, its quality urban planning, and growing concern for the environment and people's well-being are the foundations for its Human city model "place citizens at the heart of the strategy", which is based on the following principles: efficient land use, social cohesion, urban biodiversity, diversity of uses and functions, Sustainable mobility, and quality public spaces. The city collaborated with its residents to identify their needs (figure 15) and develop a Human city vision "A more sustainable Human city with mixed land use, community services, safe and accessible public spaces, and sufficient quality green spaces to improve our environment, health, and well-being." Vitoria-Gasteiz participatory Strategic Plan identifies priorities and action plans, as well as precise targets and indicators for monitoring [49].



Source: [53].

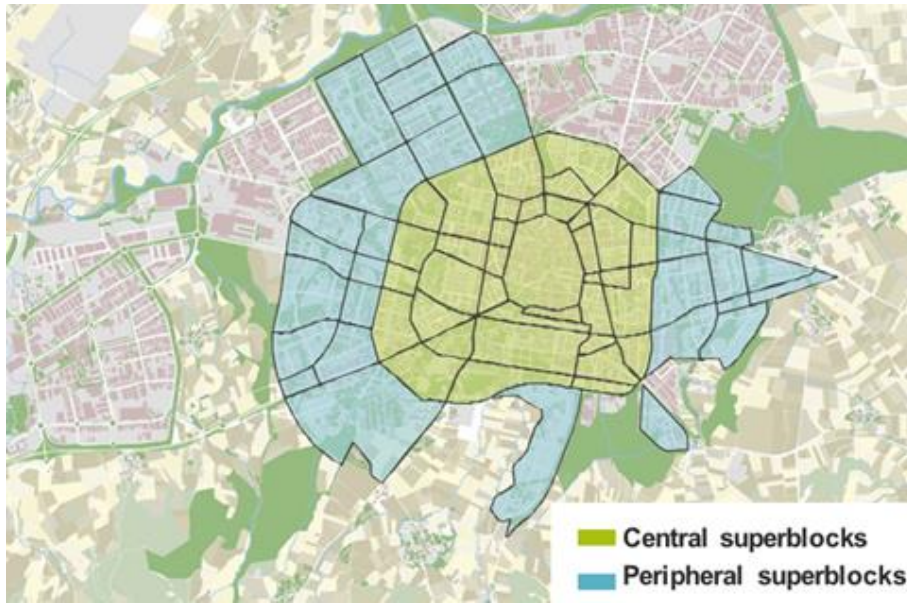
**Figure 15.** Working with Citizens to develop city strategic Plan

Pilot projects: Local Action Plans developed by Local Entities or Universities that have been identified as Pilot Projects due to their characteristics, uniqueness, and ability, to serve as an example to other Local Entities, have signed a standard protocol of support and collaboration with the Ministry.

### 5.2.3. Vitoria-Gasteiz superblock scheme

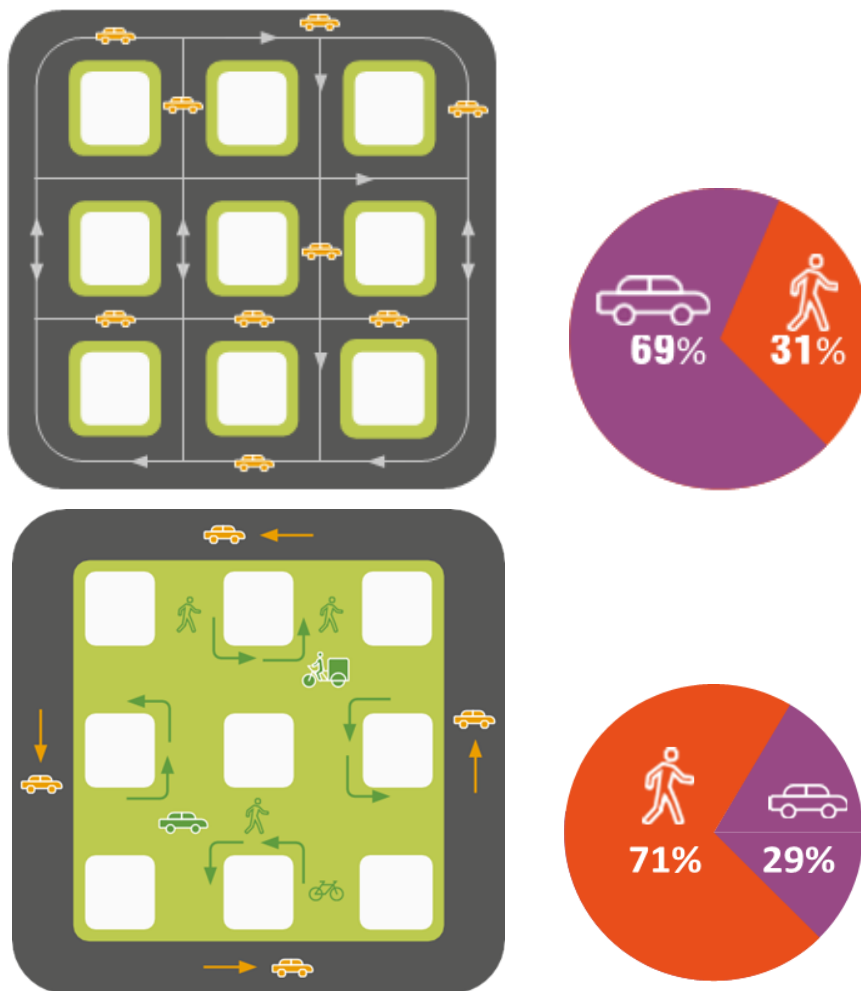
The superblock is an innovative urban planning strategy for reclaiming public space back to the people, promoting human-friendly mobility and healthy active lifestyles; providing urban greening, and mitigating the effects of climate change. The goals are to create a fairer, safer, healthier, and greener public space that promotes social interactions, as well as to create a new map of the city in which the people are the stars" [49].

The superblock is an urban cell defined by some peripheral main roads where transportation networks (bicycle, bus, and car) circulate, as well as some internal streets or pacified roads where pedestrian and cycling modes are prioritized and motorized traffic is limited to residents' cars, service vehicles, and emergency vehicles. Speed is restricted on both main and internal roads. Superblocks shape a grid of basic roads that form a polygon about (400 \*400 m) in size, and each Superblock has a population of (5000–6000) people. Within 400 meters of the superblock, residents will find everything they require in terms of basic services. The superblock more efficiently integrates the city's transportation networks, ensuring the city's functionality and organization while freeing up to 70% of the space for public use; reducing noise levels and air pollution, and promoting road safety, among other things. On the main and internal roads, the speed will be 30 (10-20 km/h in general, and 50/30 km/h in extreme cases). These street reforms also allow for the installation of landscape elements that improve urban quality and livability in the city, such as trees, seating areas, and children's playgrounds. Because no changes to the building stock, or major changes to urban planning are needed, superblocks are a viable option for all types of cities" [49]. Figures (16), (17), and (18) illustrate the Superblock model.



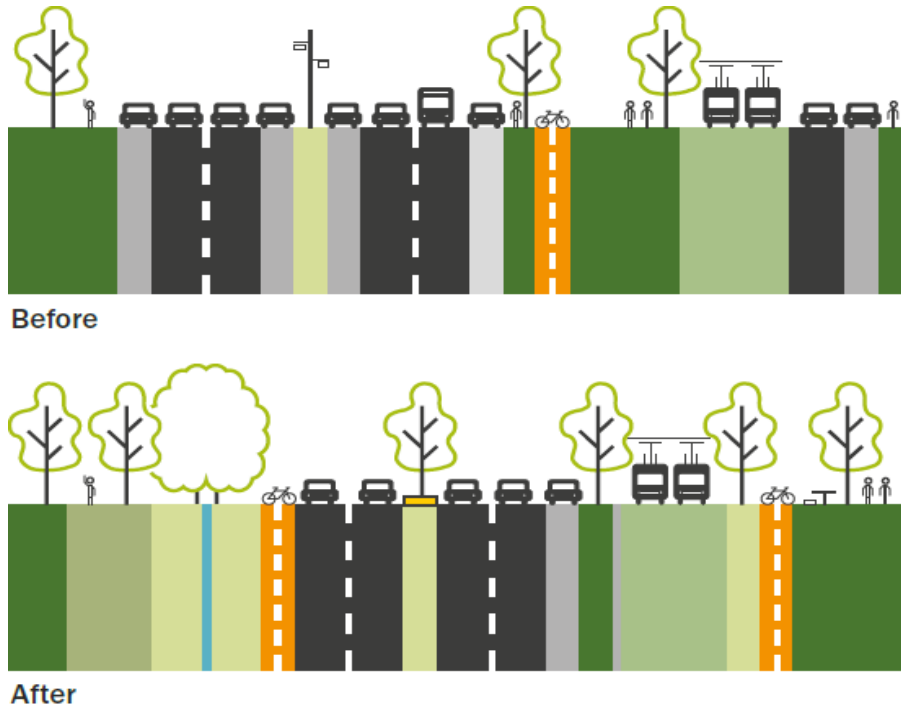
Source: [49].

Figure 16. Superblock proposal map



Source: [49].

Figure 17.A. Streets without Superblocks, B. Streets with Superblocks

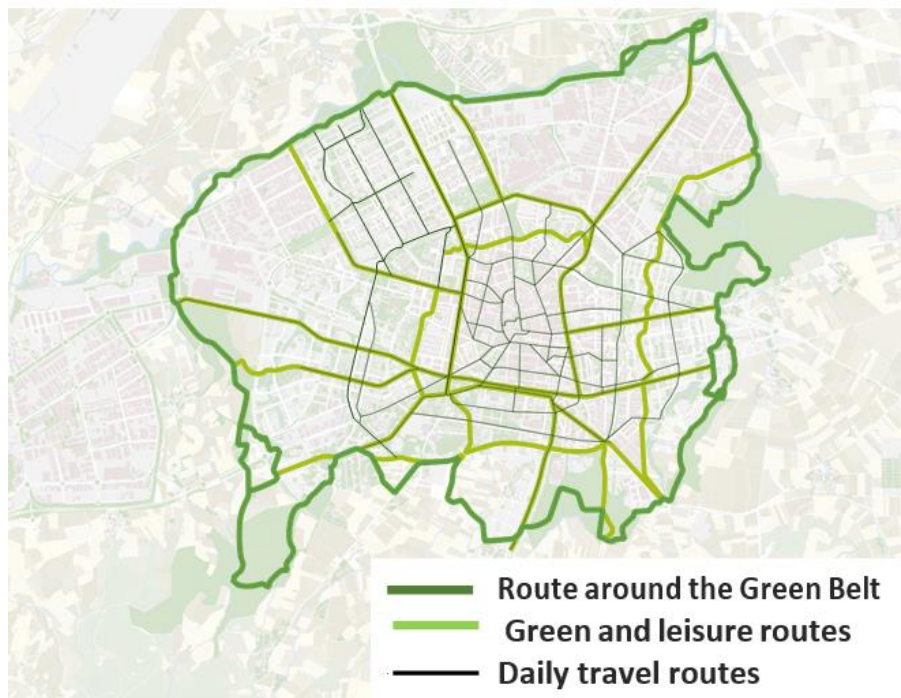


Source: [49].

**Figure 18.** The re-sectioning of Gasteiz Avenue “Improve people's access to public space and facilitating human-friendly mobility.”

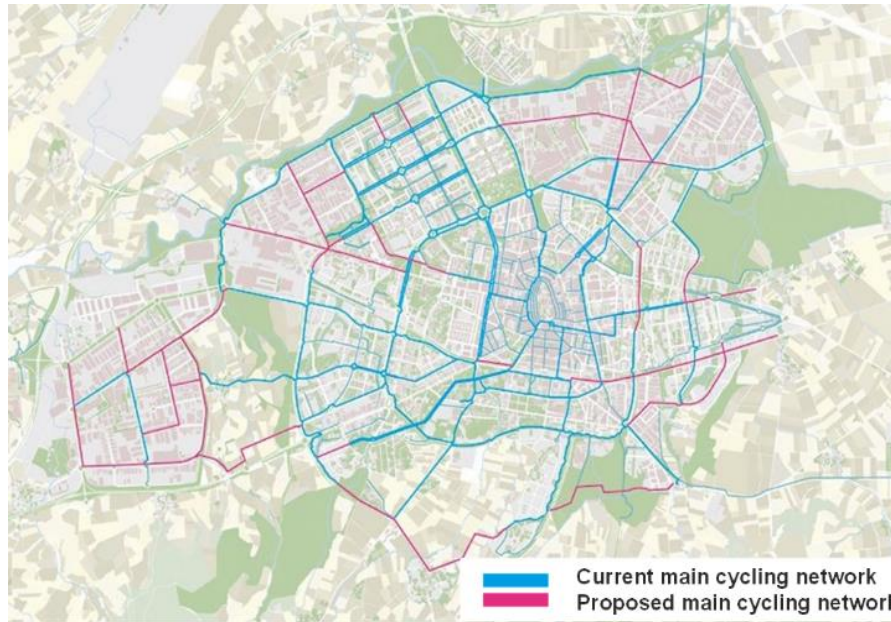
- Urban paths network

The city developed urban paths and pedestrian network (figure19) to reduce reliance on motorized transportation and to promote recreational walking, easy access to services, daily activities, and urban green spaces to increase physical activity and health.



Source: [49].

**Figure 19.** Vitoria-Gasteiz urban paths network



Source: [49].

**Figure 20.** network of cycle lanes.

- Cyclist mobility

The city developed a cycle lane network (figure 20), which runs along the main roads of the superblocks, connects the city's neighborhoods with the city center and industrial areas; In addition to a secondary network, in the inner streets, provides access to educational, social and cultural services, work centers, shops, recreation areas, and so on.

- Public Transportation

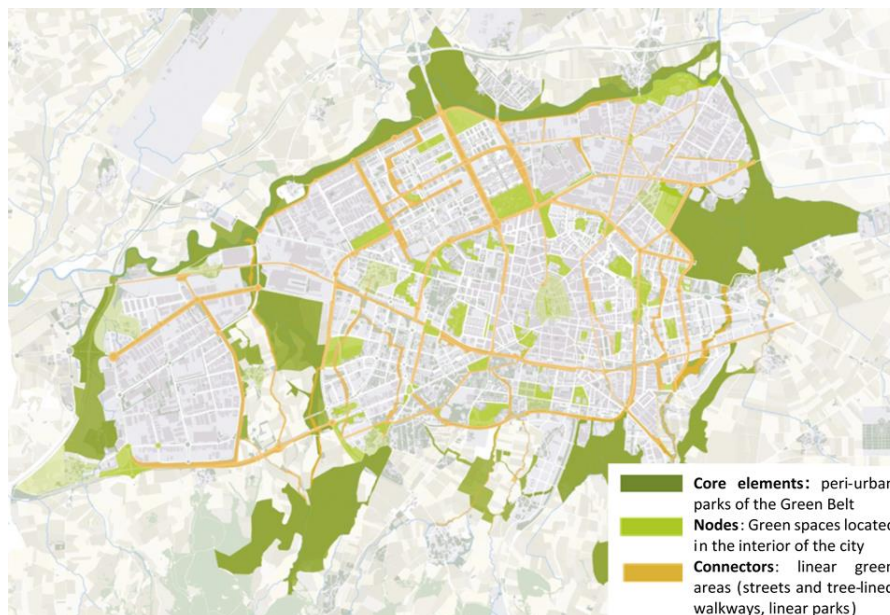
The implementation of the Intelligent Electric Bus Line (BEI). The bus network was restructured on two conditions: it had to respect the new superblock road network; with buses circulating on the super-block main roads, and it had to be integrated with the expansion of the new tram network.

- Vitoria-Gasteiz “The Green City”

The city approved the urban green infrastructure

Strategy in 2014 to naturalize green spaces (figure 21), thereby increasing biodiversity in the city. Vitoria-Gasteiz has one of the largest areas of urban and peri-urban green spaces in Europe, with nearly 50 m<sup>2</sup>/inhabitant, excluding private green spaces. Green areas account for slightly more than 15% of the artificial surface in the urban fabric, equating to 14 - 20 m<sup>2</sup> of green space per inhabitant, with access to a green area within a maximum radius of 250 meters, equivalent to 2.5 minutes on foot, from any point of the residential network.

Within the city center, Vitoria-Gasteiz is also implementing greening measures and nature-based solutions, parks, urban gardens, vacant lots, streams, and other amenities. A lot of greening occurs on roads, and squares through tree planting. However, in some areas where available space is limited, small gardens are created, or individual plants are planted. Vitoria-Gasteiz relies on native plants, which are less expensive and more sustainable, to keep maintenance costs low [49].



Source: [49].

**Figure 21.** Green Infrastructure

The following table shows the human city model for Vitoria-Gasiez city.

**Table 1.** Human city urban planning of Vitoria-Gasiez

<b>National Level</b>
Spanish Urban Agenda “Sustainable future, with dignity for all”
Policies: access to housing, promote social cohesion and seek equity; promote proximity and sustainable mobility; and improve resilience
Broad participatory process to develop “The Spanish Urban Agenda
Monitoring and Evaluation System
<b>City-Level</b>
Participatory Strategic Plan with people at the center.
Principles: compact dense urban fabric, efficient mixed land use, social cohesion, urban biodiversity, human-oriented mobility, and quality public spaces.
<b>Transportation</b>
Network of accessible Public Transportation
Urban paths network “to daily activities and services”.
Cycle network” connects the neighborhoods of the city”
Secondary cycle network to educational, social, and cultural services, work centers, shops, and recreation areas.
Cycling Parking
<b>Urban Green Infrastructure Strategy</b>
Green Infrastructure System all over the city
Access to a green area within a maximum radius of 250 meters, equivalent to 2.5 minutes on foot
Main urban green spaces (nodes) -Tree-lined streets (connectors)
Accessible Parks designed for all.
Nature-based solutions: Parks, urban gardens, vacant lots, streams, facades, streets, and squares.
<b>Urban Design</b>
Super block model
Basic services in walking distance 400 m.
Traffic calming measures
Installation of street furniture, playgrounds, trees, ... etc.

Source: Authors based on [49, 50, 51, 52]

● Case studies learned lessons

A set of lessons learned was obtained as a result of an analytical study of international human city case studies; these lessons are also consistent with what was found during the theoretical study; it is summarized as follows:

- Case studies have been shared in setting national urban policies that adopt the goals of the new urban agenda, including humanizing the city and placing people at the center of urban development. Also, in the development of policies to ensure that all residents' diverse needs are met. The formulation of these policies was conducted in partnership with the people.
- Case studies developed strategic plans aimed at humanizing these cities, in partnership with their residents, to determine the city's vision and needs, and to develop indicators to assess the achievement of goals that measure the degree of residents' satisfaction.
- Case studies included the development of plans based on the principles of human cities, achieving

different goals for diverse groups of the population and taking into account the human scale (mixed uses, human-friendly transportation, access to services, green areas and public spaces that encourage social interactions).

- Case studies include the urban design of neighborhoods and public spaces that encourage social interactions, bringing life back to cities.

**5.3. Human-City Urban Planning Proposed Model for Egyptian Cities**

Based on the theoretical and analytical studies of the literature review and case studies, the following proposed model was developed to achieve the principles and goals of human cities in Egypt. The planning model applies to all planning levels, from the national to the city to the local, as well as urban design; it combines top-down "Human City Strategic Planning" and bottom-up "pilot projects, tactical urbanism, and local initiatives" planning approaches. The proposed model is illustrated in table (2).

**Table 2.** Human city urban planning model (HCUPM)

<b>National Level</b>	
	NUPs that endorse the goals and principles of the Human City.
	NUPs should enact policies that lead to the formation of a city's identity.
	Achieving the highest possible participation and inclusion of all residents to achieve the goals of Humanizing the Cities.
	Meeting various population needs through housing programs tailored to specific groups.
	Urban laws reinforce and confirm NUP's goals to achieve human dimensions in urbanization.
	Mechanisms for continuous monitoring and evaluation.
<b>City-Level</b>	
	Human City Strategic planning process
	Study to determine people's needs.
Analytical studies and vision setting stage	The city vision includes the goals and principles of the Human City.
	Residents' participation in defining the city's vision.
	Studying global urban trends.
Create strategic plan stage	Mixed-use planning to create vibrant, accessible, and compact cities.
	Planning human-oriented transportation networks: "public transportation - bicycles - pedestrians".
	Green infrastructure Plan.
	Using Tactical Urbanism as a Pilot Project
	Integrate successful local initiatives to humanize the city into the plans.
Detailed plans	"Zoning Regulations Laws" based on the Human city's goals and principles.
	Special regulations to preserve the identity of the city.
Follow-up and evaluation	Using the "people first metrics" that measure people's perception and experience of the city "satisfaction" to track the city's achievement of the vision and goals.

Table 2 Continued

<b>Land Use Planning</b>	
Mixed land use Planning.	
Diverse types of adequate and affordable housing.	
Basic services (health, educational, entertainment, etc.), within 5-10 min walking distance or 500 meters of a public transportation station.	
Job opportunities within not more than 500 m from the nearest public transport station.	
<b>Transportation</b>	
Public transportation networks connect various parts of the city.	
Bicycle Network " connects the city's neighborhoods and. provides access to city services.	
Bicycle parking spaces in buildings, streets, and public transport stations.	
Safe pedestrian network (not less than 1.5 m wide) to encourage walking.	
Planning "auto-free streets" and green roads to encourage car-free travel.	
Limit traffic speeds on local streets to 25-30 km per hour or less.	
Street landscape (vegetation - furniture - shading - Crossings, etc.) to promote walking.	
The transportation system must be designed to serve all segments of the population (children, the elderly and people with special needs).	
<b>Green Infrastructure</b>	
Network of green spaces in the city that considers green space planning standards (hierarchy-per capita)- (7-10 square meters in old cities and 15-20 square meters in new cities)".	
Green areas, no more than 500 meters from the house or the nearest public transportation station.	
Nature-based solutions: tree-planting in the streets, squares, and pocket parks, water elements, green roofs, and facades.... etc.	
Green spaces designed for all residents, including "children, the elderly, and people with special needs".	
<b>Urban Design</b>	
Diversity of uses to create livable neighborhoods.	
Neighborhoods Master Plans	High densities and compact urban fabric (with a total of at least 15 thousand people per square kilometer).
	Basic services (education, health, and entertainment) within a 500-meter walking distance.
	Safe play areas for children near their homes, and suitable for use by children with special needs.
	Safe, well-defined, and direct pedestrian routes, to public transport, shopping, service and workstations.
	Blocks length is limited to 150 meters, to encourage walking.
Heights of the buildings (not more than 5 floors), to take into account the human scale.	
Public space	Hierarchy of public spaces and fair distribution of spaces through access to an open area with a distance of no more than (400 meters).
	Design Public Spaces to meet the needs of different age groups and people with special needs.
	Diversity of activities in the public spaces of the city "walking - sitting - entertainment....".
	Diversity of time of activities in public places in the city "weekdays - holidays - special events....".

Source: Authors based on: [3, 4, 5, 6, 7, 8, 25, 26, 28, 29, 30, 31, 33, 45, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58

## 6. Questionnaire to Assess the Model's Applicability in the Egyptian Context.

A questionnaire with experts in urban planning, urban design and sustainable development was conducted to assess the model's applicability to the Egyptian case; 104 respondents, from universities, consulting companies, and executive authorities participated in the survey. The respondents' feedback had been analyzed using SPSS and Microsoft Excel applications. In this study, relative index analysis was used to assess the significance of each element, to humanize the Egyptian city, and rank these elements based on their relative importance. The questionnaire was composed of three parts.

The first part, reported and calculated the relative importance index for each element; we find that the elements of the model range from high to high - medium, and that the most essential element is Nature-based solutions: tree-planting in the streets and squares, etc., with a relative importance index of 0.930, which illustrates the high importance of promoting green areas to humanize the city, while the least important element is NUPs should enact policies that lead to the formation of a city's identity, with a relative importance index of 0.690 as shown in the appendix (1), as no element is under high-medium, no element will be disqualified. This demonstrates the

significance of each element of the model in achieving Egyptian city humanization.

The second part, included a survey of the most important stages that could contribute to the Egyptian city's humanization; each stage was also assigned a Likert scale to calculate its relative importance index. As a result, all levels have a high relative importance index. The most important stage was transportation planning with a relative importance index of 0.9, followed by public space design with a relative importance index of 0.885. The least important was national level, and human city strategic planning with a relative importance index of 0.82 as shown in the appendix (1).

The third part defined the expert opinion on the most important participation tools that can be used to suit the nature and characteristics of society in Egypt. A multiple-choice question has been created with the option of selecting more than one answer and adding other suggestions. The most appropriate tools, according to the results, were workshops with the local community (72.5 percent), followed by interviews with the concerned parties (52.5 percent), interviews with representatives of the local community (40 percent), and the use of technology to create communication channels with the population (40 percent), as shown in figure (22), and finally, it was suggested by Some experts to develop a system to receive citizen complaints and suggestions.

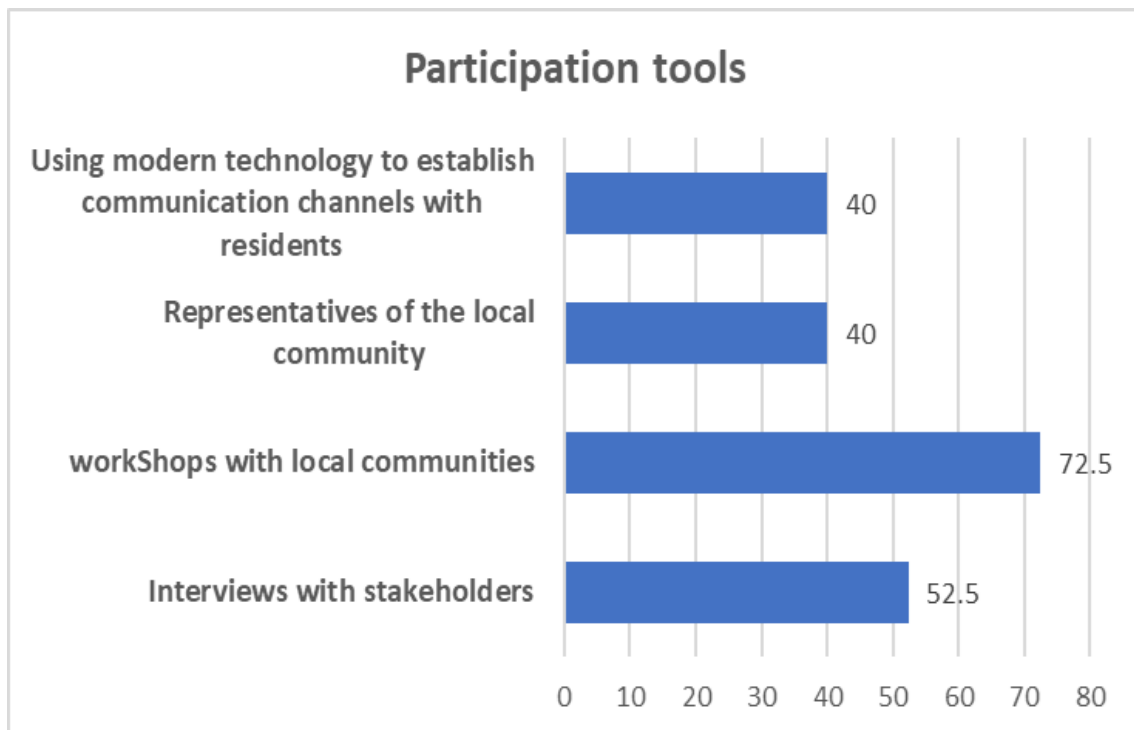


Figure 22. Participation tools that can be used to suit the nature and characteristics of society in Egypt

## 7. Conclusion

- The purpose of this paper is to develop a model that can assess the degree of humanity in cities. As a result, planners now have access to a human-city urban planning model (HCUPM). The model is intended to serve as a proactive contingency planning tool for mitigating the negative effects of our cities on human life and ensuring the integration of the human dimension in the planning process of our future cities.
- The model has been inducted based on a set of theoretical and analytical studies, including a study of the most important problems confronting cities today, followed by the literature of human cities; then an analytical study of the most important global case studies of human cities.
- The proposed (HCUPM) has a comprehensive planning approach that ensures the city's humanization at all planning levels, from the national level to the finest urban design details.
- The questionnaire-based analytical study for urban planning and design experts proved the feasibility of applying this model in the Egyptian case and the importance of the model to humanizing the Egyptian city, and presents the empirical study of the research.
- Relative index analysis was used to assess the respondent's feedback; the elements of the model ranged from high to high - medium; this illustrates the importance of each element of the model in achieving the humanization of the Egyptian city.
- The questionnaire was also used to obtain the opinion of experts about the most important tools of participation that can be used to suit the nature and characteristics of society in Egypt. According to the results, the most appropriate tools were workshops with local communities.
- Although this paper has contributed to the field of Human City; the field is still considered as a research gap area. Other aspects to achieve human city such as social, economic, governance need to be further addressed, as this paper focused on the urban aspect inputs in achieving the humanization of the city.
- A practical applied study to measure the efficiency of the model, can be conducted in future research.

## Appendix (1)

The questionnaire was designed based on the model developed through a theoretical study, case studies, and it was reviewed by experts during the pilot study. The questionnaire aims to assess the model's applicability to the Egyptian case; it was divided into two sections: Section A is for general information about the experts, and Section B is for assessing the model. Section B contains six (6) main levels related to the proposed model. Google Forms was used to distribute the questionnaires to respondents. These

questionnaires were distributed to experts in urban planning, urban design, and sustainable development. 104 respondents, from universities, consulting companies, and executive authorities participated in the survey.

### A- General information analysis

Based on 104 questionnaires valid cases that had been conducted, where 62 of the respondents were Professors and lecturers in universities, 62 were from consultants, 15 were from government agencies "executive authorities" and the other 5 respondents were scientific researchers, Considering the presence of overlap in some disciplines, where some specialists work in multiple jobs (Figure 23). From 104 questionnaires, 16 respondents have more than 20 years of experience; another 29 have 10 to 20 years of experience; 43 have 5 to 10 years of experience, and 16 have less than 5 years (Figure 24).

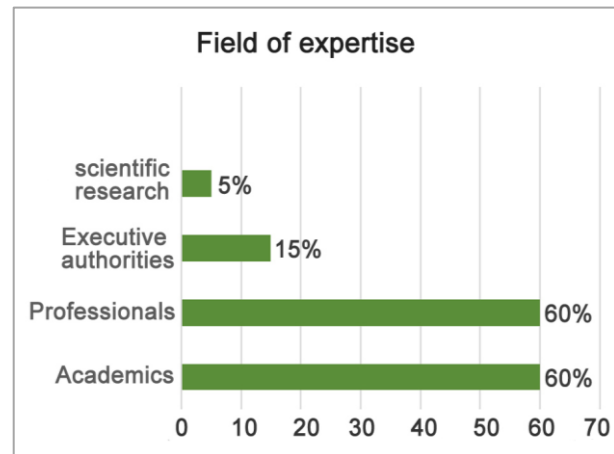


Figure 23. Respondents' field of expertise.



Figure 24. Respondents' years of experience.

## B- Human City Urban planning model analysis

The respondents' feedback had been analyzed using SPSS and Microsoft Excel applications. In this study, relative index analysis was used to assess the significance of each element, to humanize the Egyptian city, and rank these elements based on their relative importance. Based on the model, a number of questions were created, and each question was given a Likert scale (from one to five, with one implying the least and five the highest); the relative importance index is calculated using the formula below.

$$RII = \sum W / (A * N)$$

Where,

RII = relative importance index.

W= the weighting given by each respondent (on a scale of one to five, with one denoting the least and five denoting the most).

A= the highest weight

N = sample size.

The RII values are divided into five categories:

- H: High ( $0.8 \leq RII \leq 1$ ),
- H-M: High-medium ( $0.6 \leq RII \leq 0.8$ ),
- M: Medium ( $0.4 \leq RII \leq 0.6$ ),
- M-L: Medium-low ( $0.2 \leq RII \leq 0.4$ )
- L: Low ( $0 \leq RII \leq 0.2$ ).

**Table 1.** HCUPM relative importance index analysis

National Level		Mean	RII	Ranking by category	Ranking overall	Importance level
NUPs that endorse the goals and principles of the Human City.		3.800	0.760	5	27	H-M
NUPs should enact policies that lead to the formation of a city's identity.		3.4500	0.690	6	29	H-M
Achieving the highest possible participation and inclusion of all residents to achieve the objectives of Humanizing the Cities.		4.0000	0.800	3	21	H
Meeting various population needs through housing programs tailored to specific groups		4.3500	0.870	1	11	H
Urban laws reinforce and confirm NUP's goals to achieve human dimensions in urbanization.		4.0500	0.810	2	18	H
Mechanisms for continuous monitoring and evaluation		4.0050	0.801	4	20	H
Human City Strategic planning process						
Analytical studies and vision setting stages	Study to determine people's needs	4.3500	0.870	4	11	H
	Human city vision	3.9250	0.785	8	25	H. M
	Residents' participation in defining the city's vision.	4.0750	0.815	5	17	H
	Studying global urban trends	3.6750	0.735	9	28	H. M
Create strategic plan stage	Mixed-use planning to create vibrant, accessible, and compact cities.	4.0250	0.81	6	18	H
	Planning Human-oriented transportation networks, "public transportation - bicycles - pedestrians"	4.4750	0.90	2	6	H
	Green infrastructure Plan	4.5250	0.91	1	4	H
	Using Tactical Urbanism as a Pilot Project	3.9750	0.795	7	23	H
	Integrate successful local initiatives to humanize the city into the plans	4.0750	0.815	5	17	H
Detailed plans	"Zoning Regulations Laws" based on the Human city's objectives and principles	4.2000	0.840	5	14	H
	Special regulations to preserve the identity of the city	4.1500	0.830	6	15	H
Follow up & Evaluation	People first metrics/Citizen's satisfaction	4.4250	0.885	3	8	H
Land Use Planning						
Mixed Land Use Planning		4.2000	0.840	2	14	H
Diverse types of adequate and affordable housing.		4.1250	0.825	3	16	H
Basic services (health, educational, entertainment, etc.), within 5-10 min walking distance or 500 meters of a public transportation station.		4.4250	0.885	1	8	H
job opportunities within not more than 500 m from the nearest public transport station		3.8250	0.765	4	26	H-M

Table 1 Continued

<b>Transportation</b>						
	Public transportation network connects various parts of the city	4.4500	0.890	4	7	S
	Bicycle Network " connects the city's neighborhoods and. provides access to city services.	4.1500	0.830	7	15	H
	Bicycle parking spaces in buildings, streets, and public transport stations.	4.2000	0.840	6	14	H
	Safe pedestrian network (not less than 1.5 m wide) to encourage walking.	4.6000	0.920	2	3	H
	Planning "auto-free streets" and green roads to encourage car-free travel.	4.4000	0.880	5	9	H
	Limit traffic speeds on local streets to 25-30 km per hour or less.	3.8250	0.765	8	26	H-M
	Street landscape (vegetation - furniture - shading - Crossings, etc.) to promote walking	4.6100	0.922	1	2	H
	The transportation system must be designed to serve all segments of the population (children, the elderly, and people with special needs).	4.5250	0.905	3	5	H
<b>Green Infrastructure</b>						
	Network of green spaces in the city that considers green space planning standards (hierarchy-per capita)- (7-10 square meters in old cities and 15-20 square meters in new cities)"	4.5250	0.905	2	5	H
	Green areas, no more than 500 meters from the house or the nearest public transportation station	4.0250	0.805	4	19	H
	Nature-based solutions: tree-planting in the streets, squares, and pocket parks, water elements, green roofs, and facades.... etc.	4.6500	0.930	1	1	H
	Green spaces designed for all residents, including "children, the elderly, and people with special needs"	4.4500	0.890	3	7	H
<b>Urban Design</b>						
Neighborhoods Master Plans	Diversity of uses to create livable neighborhoods	3.9750	0.795	7	23	H
	High densities and compact urban fabric (with a total of at least 15 thousand people per square kilometer).	3.9950	0.799	6	22	H
	Basic services (education, health, and entertainment) within a 500-meter walking distance	4.2750	0.855	4	13	H
	Safe play areas for children near their homes, and suitable for use by children with special needs	4.3750	0.875	2	10	H
	Safe, well-defined, and direct pedestrian routes, to public transport, shopping, service and workstations.	4.4500	0.89	1	7	H
	Blocks length is limited to 150 meters, to encourage walking.	4.3500	0.870	3	11	H
	Heights of the buildings (not more than 5 floors), to take into account the human scale	4.0000	0.800	5	21	H
Public space	Hierarchy of public spaces and fair distribution of spaces through access to an open area with a distance of no more than (400 meters)	4.3000	0.860	3	12	H
	Design Public Spaces to meet the needs of different age groups and people with special needs	4.4000	0.880	1	9	H
	Diversity of activities in the public spaces of the city "walking - sitting - entertainment...."	4.3500	0.870	2	11	H
	Diversity of time of activities in public places in the city "weekdays - holidays - special events...."	3.9500	0.790	4	24	H-M

**Table 2.** HCUPM stages relative importance index analysis

Human City Urban Planning Model (HCUPM) stages	Mean	RII	Ranking	Importance level
National Level	4.1000	0.82	6	H
Human City Strategic planning	4.1000	0.82	6	H
Land Use Planning	4.3750	0.875	4	H
Green Infrastructure	4.4000	0.88	3	H
Transportation system	4.5000	0.9	1	H
Neighborhood Master Plans	4.3500	0.87	5	H
Public space	4.4250	0.885	2	H

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