

# **Green Smart City: Sustainable city and optimal productivity in terms of environmental psychology and urban quality**

**Neda Razei**

## **Abstract**

Nowadays, planning and managing cities in a way that meets the complexity of the current needs of urban society require planning and design to create smart cities and communities, and the structure of these cities should be based on creating environments to facilitate work processes along with improving cognitive skills and learning ability and innovation. A green city based on sustainability and environmental protection can be an innovative measure for the idea of quality-based smart spaces, urban environment, environment. Therefore, this study seeks to investigate the relationship between urban intelligence and environmental sustainability. In this regard, the effects of smartening the urban environment and urban equipment in Kyrene will be examined from the perspective of a smart green city .The analytical-descriptive method is used in the study. The results show that the effects of smartening in green-oriented cities such as Kyrene can have a positive effect on the sustainability of urban sustainability and improve the quality of the urban environment for citizens.

**Keywords:** Smart City, Green Smart City, Environmental Psychology, Quality of urban environment

## **Introduction**

The present study, based on the findings and theoretical foundations, examines the green smart city, which seeks the basis of urban sustainability in terms of the psychology of the urban environment and its effect on the quality of the urban environment and humans. (Lee, et al., 2018, p. 21)

On the one hand, by reviewing recent studies in smart cities and technology development, it can be said that sustainable futuristic cities are moving towards a model of a codified and organizational plan for quality of life in the future. (Cugurullo F. , 2020, pp. 1-14)

In the initial studies on the quality of intelligent efficiency in order to green sustainability and environmental protection, long-term plans have been achieved, and based on this, we will address the impact of a green and sustainable environment on mental quality and perception for humans. (Singh, et al., 2020, p. 63)

Based on this, we will deal with the theory of environmental quality based on environmental psychology in order to reach a responsive environment for a smart green city by recognizing the human mind and perceiving the quality of the environment.

Using smart platforms in order to sustain the green environment and green data, a sustainable green environment can be achieved.

Numerous clashing conclusions approximately savvy cities have risen since their presentation. A few analysts visualize arrangement related (Pettit, et al., 2018, pp. 13-24) The savvy city worldview is related to the Web of Things, sensors and enormous information, which leads to cognizant and data-based administration. (Allam Z. , 2018, pp. 103–121) The rules for cities, in spite of the expanding utilize of the term, don't say that we ought to have keen cities. The reason for this exclusion appears (Yu & Zhang, 2019, pp. 501–512)

As a result, we look for to compare these savvy city cases based on the objectives, approaches, strategies and assets utilized within the shrewd city improvement handle. Comparisons between cities seen from this point have not however been made in other considers. Whereas a few considers have been conducted to compare shrewd city hones, advancement in this association is cantering on plan choices made, and distinguishing and classifying development ways.

### **Research purposes:**

Investigating the theory of environmental quality from Gibson's point of view

Examine and meet the criteria of a green smart city

Components of environmental psychology

mind and psyche

Components of place quality and its impact on urban life

### **Research questions:**

How can the criteria of sustainable cities be achieved using the theory of environmental quality?

How can it be said that a smart green city can have a noteworthy affect on the quality of the human intellect and mind?

Why can smart cities become sustainable cities and quality places in the future?

## **Research literature**

### **Citizens and participation**

Many researchers believe that citizens can achieve better urban management by participating in urban affairs and social interactions. In the contemporary era, public affairs citizens and cities, seek the quality urban environment in terms of psychology and consumption. we develop a hypothetical demonstrate to examine the impact of shrewd city benefit quality on citizen engagement in an open crisis environment. (S. Fu, 2018, pp. 88-102)

The demonstrate clearly uncovers an energetic and,causalrelationship,from boost to involvem ent and from involvement to conduct.

### **Quality and efficiency**

In cities, based on the quality of spaces and infrastructure of cities, with the help of environmental psychology, human perception and mentality can be expressed towards the infrastructure that can be developed in cities.

Quality and efficiency in urban infrastructure, which in smart cities focuses on the managerial and participatory factors of citizens can be presented in the field of security and citizenship. Quality characteristics in expandable urban environments can be said that by understanding the human mind and providing optimal services to citizens, basic needs and urban needs can be met. (A. Meesala, 2018, pp. 261-269)

### **Quality indicators of urban life**

It is defined in two levels: micro (individual objectively-subjective) and macro (social at three levels: formal, functional and semantic (aesthetic). In his practical approach, he covers the quality of urban life, such as physical effects, social meanings and aesthetic concepts in performance, and so on.

### **Provide a realistic**

plan Lack of precise concept for smart city can serve as an important component in understanding the importance of presenting a realistic plan for city managers. Digital information, with all its benefits, brings to mind the fact that urban planners argue for them much more realistically than managers want to discuss objective evidence and experience. More importantly, even if a precise definition of real digital information and smart cities is provided, it still needs to be managed by experts, while understanding the infinity of smart management is also of particular importance.

### **Environmental sustainability**

Environment means the body of the city and the surrounding nature, including land, climate, resources and other creatures. Intrusion and occupation should be examined in it. A wide range of challenges and issues in this field can be studied and studied. In smart urban planning, principles and framework can be depicted that can be targeted and modeled in all managerial and executive matters:

- Development of knowledge and promotion of information with new and intelligent technologies
- Adhere to the principles of sustainable development and resource saving
- Intelligent physical and quality control of city development (T. Dietz, 2018, pp. 12334-12336)

### **Citizens' participation**

City officials around the world, with the help of builders, designers and contractors, are trying to improve city life. Properly implemented technologies will help officials who are constantly under pressure with budget deficits to save money and be more efficient. (N.A. Lewis Jr., 2020)

### **Intelligent physical and quality control of city development**

The city, like a living thing, is constantly rebuilding and developing. Various social and economic developments and activities in the city need space and land, and if properly controlled and managed, energy and resources will be used optimally. Ultramodern, fundamental changes will be made in the structure and method of land use. (A.R. Pearson, 2018)

### **Transformation in attitudes towards urban design**

In the past, the zoning of the city in terms of the type of activities and the talent of the land regulated the movement in the city. Traditional master plans with dry and strict zoning rules were subject to changes and reforms in practice to adapt to the needs of citizens and urban developments. The city's economy, and urban infrastructure, have given way to smart cities with mixed applications. In recent years, local governments in the UK have claimed that mixed land use could improve sustainable travel by reducing the need for car travel. (Visvizi, Lytras, Damiani, & Mathkour, 2018, pp. 126–133)

Education, management, control, production and distribution of services and goods have undergone fundamental changes, and in this regard, the management and development of cities is also changing and transforming. (Lytras & Visvizi, 2018)

Take, for example, a recent report by the Brookings Institution, in which he points out three advantages on which to base the use of intelligence.

The first advantage; By focusing on the development of smart transportation infrastructure, public utility costs will be reduced and fewer crossings will be needed as a result. It will also reduce the cost of relocating people and widening police stations.

The second advantage; Focusing on the mass labor market, healthier metropolitan centers, lower densities will lead to higher employee productivity and higher incomes within the smarter area and during this time, this change will be recognizable.

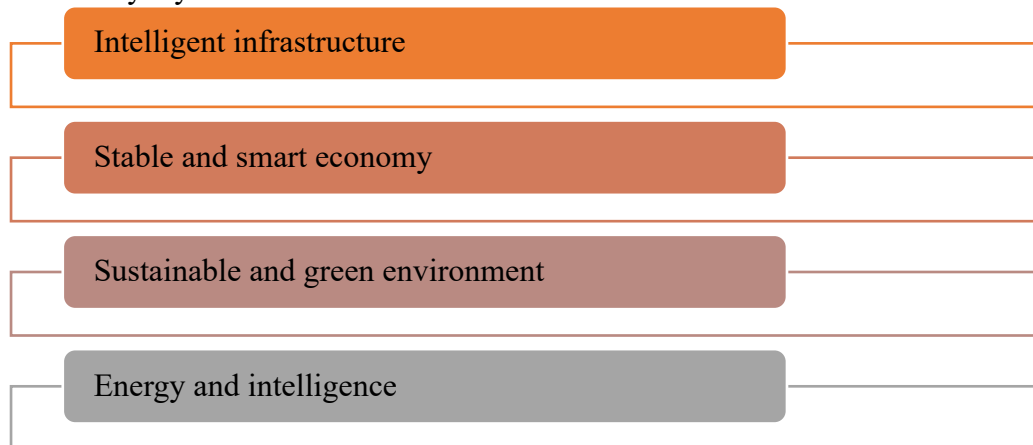
Third advantage; Following the improvement of the economic situation in the smart cities of a city, a decrease in poverty has been observed, and an increase in the suburbs has also led to an increase in the price of houses and population. (Sheth, Srivastava, & Michahelles, 2018, pp. 4-7)

### **Smart city**

In the meantime, according to various functions for the settlements is defined, in part spaces form one of the most important elements of urban spaces of social relations, ignored or at a far lower priority, and in most cases, this is due to the attention, it is too much for the functionalism of urban spaces. Studies have shown that in the pre-machine age, the extent of human intervention in natural environments architecture and their changes due to the existing limitations was very small; But this time) the era of industrialization and smart cities (due to extensive activities and mass production, the amount of interference and variations in natural environments was added. in the meantime, private cars in addition to disadvantages such as assigning levels of many of the cities themselves) sometimes up to 50% (the creation of environmental pollution, and devour natural resources) gas, petrol and primary sources (causes less Physical activity A large percentage of people walked like these, which led some of the

leading groups to plan as well. We should consider reforming the use of non-renewable resources and limiting it. So that today we make movements such as sidewalks in cities, neighbourhoods humanist, in the pedestrian-oriented, and look no farther theories such as sustainable development, smart, etc., each of which somehow trying to restrict the use of non-renewable resources and encourage humans to be pedestrians. With this introduction, this research seeks to answer the question of whether urban space smartening is the cause of behavioural constriction.

Smart city layers :



**Figure1:** Smart city layers. (author)

## Green City

Green cities encourage people to behave green, such as using public transportation, which has little ecological impact.

The importance of green urbanization is such that today the promotion of urban sustainability and green urbanization in cities has a high priority for many European countries. There is considerable evidence of greenery in urban planning and achieving sustainable development in European countries (especially in northern and western Europe). In the last decade, Green City programs have been implemented through a combination of public and private tools. In Denmark, for example, the national green municipality project has led to support for environmental initiatives (500 projects) and the development of a network of communities.

## Green urbanism

Given that the green city tends to be a smart city, so that it can become a multi-purpose city for work, rest with a good transportation system. Therefore, it should be noted that to build a city without traffic, with large green space and all modern facilities, it is necessary to redesign and plan current approaches in cities. Accordingly, green urbanism is often used as a way to describe smart settlements (due to adaptation to new 21st century technologies), safe (due to the use of man-made systems and the ability to respond to unexpected events) and sustainable. Newman, seven characteristics as a new approach in the global arena are: 1- city with renewable energies, 2- city with neutral carbon (without carbon), 3- divided city, 4- biophysical city 5- A city compatible with an efficient environment, 6- A city based on a city, and 7- A city with sustainable transportation. It should be noted that what is considered as a challenge for planners today is the purposeful integration of all these approaches together, using a combination of new technologies and community-based innovation.

## **Environmental psychology**

Environmental psychology as an interdisciplinary specialty is the psychological study of behavior in the physical environment of everyday life, the purpose of which is:

Recognize and analyze the complexities that designers face in the physical environment. Especially in responding to human psychological and aesthetic perceptions.

Investigating the role of behavioral sciences in formulating the theoretical foundations of architecture that result from the weakness of architecture

Investigating Moir indicators in performance and spatial quality of the environment in order to design a favorable space for citizens.

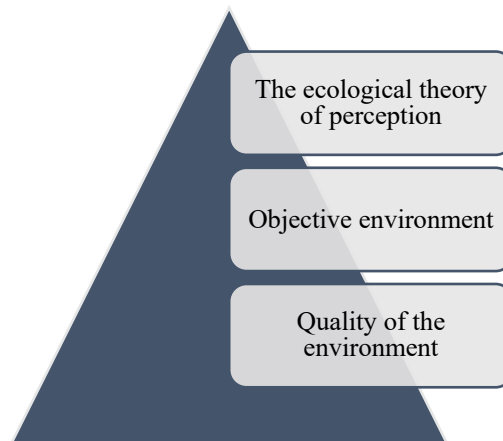
Recognize the generalized capabilities of the design environment, ie concepts related to design and behavioral sciences that are based on design decisions.

## **Theory of visual perception**

Environmental capability from Gibson's perspective

The English concept of "ability" Affordance was coined by the American psychologist Jim Gibson (1979, 1977, Gibson). People communicate directly with the environment through the mind and participation.

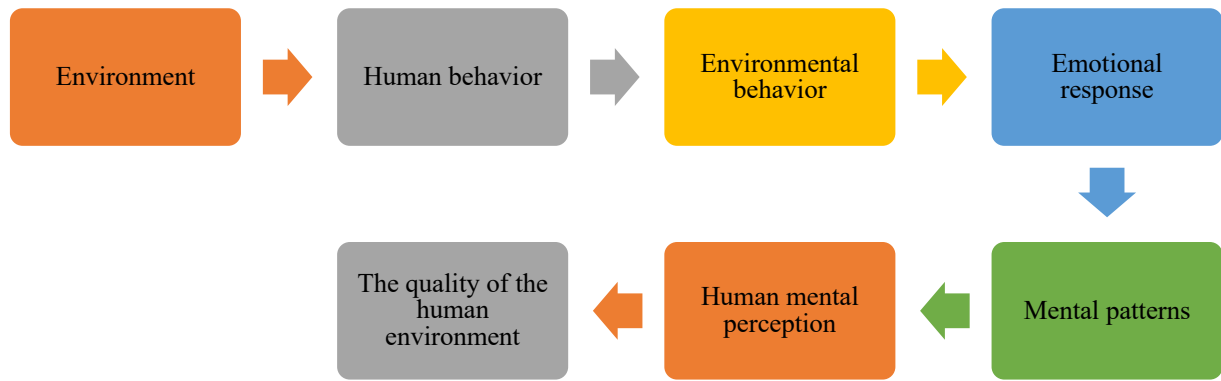
They shape the physical or constructed environment in a way that fits the current or desired pattern of behavior. It is also important because it provides respect and beauty through symbolic messages.



**Figure2:** Environmental quality components. (author)

Therefore, a behavioral place has potential and somewhat unlimited capabilities, and the use of these capabilities depends very much on:

- User needs.
- Their abilities (physical, mental, spiritual).
- Experience their capabilities.
- How to make and shape the environment used



**Figure3:** Environmental quality layers in smart cities. (author)

The place of the concept of environmental capability in environmental design:

According to previous studies, the concept of environmental capability is a comprehensive and inclusive concept that has been interpreted differently due to various implications for the living environment. The field of architecture and man-made environment has also benefited from these implications. However, the emphasis on the concept of environmental capability in the context of these studies has less referred to a practical and efficient concept.

From the perspective of environmental psychology, the agent and the environment are interconnected by capabilities that also have environmental properties. On the other hand, it is the function of the object and the environment that provides the necessary capability to perform an activity. , And provide a form appropriate to the performance, recognizing the capabilities of the environment, including geographical, cultural and social characteristics, therefore, potential capabilities at different levels are placed in the architectural environment and the use of these capabilities depends on the mental, psychological and physical characteristics of individuals and users. It will have those capabilities.

Design activity can be divided into two main types, which are divergence and convergence. In the divergence stage, a wide range of possible options or proposals are created, or in other words, produced. These suggestions are linked to one or more needs. These options can then be re-examined and corrected. In the convergence phase, the solutions are displayed and ranked and corrected. The purpose of separating the convergence and divergence of the design process is to establish regular methods for better and easier management of the design process. According to the above division, the capabilities for convergence in the shaping activity, the solution options are derived from one or more needs, in which case the other needs must be re-examined to find solutions.

### Research Background

According to the holistic view, urban development can be synchronized with information technology and become an optimizing approach to sustainable development.

Smart city systems can take a positive step towards the development of green and sustainable cities with the special features of platforms and software.

To decide savvy city plan choices, the determinants of each of these key angles must to begin with be distinguished and characterized. For the human viewpoint as plan choices, Title and Pardo (2011) highlight social learning, imagination, and instruction (which basically implies mindfulness). Social learning relates to imagination for savvy arrangements and preparing to create knowledge-based IT and human asset aptitudes. (Appio, Lima, & Paroutis, 2018, pp. 1-14)

For high-tech urban improvement, money related prerequisites play a key part in deciding the guide. Participation between the open and private segments to contribute in shrewd urban advancement ventures has continuously been bolstered as an alluring money related instrument. In hone, this participation is complex since of the diverse interface and states of mind of partners towards return on speculation. Whereas private-sector on-screen characters contribute in well-funded urban trade ventures, public-sector on-screen characters center on social propels such as bliss, well-being and security. (Pattberg & Widerberg, 2018)

### Case Study (Kyrene - Northern Cyprus)

Kyrene is located on the northern coast of Cyprus next to the mountain slopes called Pentadactyl us. The city includes a castle dating back to 1191, which refers to Richard Shidehara’s campaign in the area. The castle is thought to have been built around the 7th century AD, although the exact date of its construction has not been recorded. The architectural style and materials of the old buildings around the port and the city centre show different personalities inherited from different cultures: Greek, Roman, Lusignan, Venetian, Ottoman and English.

The image below shows the development of the area built in Kyrene. Highlights the various stages of urban development. One of the frequent features of the wall and area was the medieval fortifications, where the role of M.R.G. Cozen is called a fixed-line. At the right time, this was often followed by a ring road. Another interesting feature of the urban fabric is the old Turkish quarter, which was built outside the historic centre. This part of the city was built during Ottoman rule around the seventeenth century and is now preserved as part of the historic centre of the city. Empty Gray spaces are Turkish military bases that create a fragmented urban fabric.

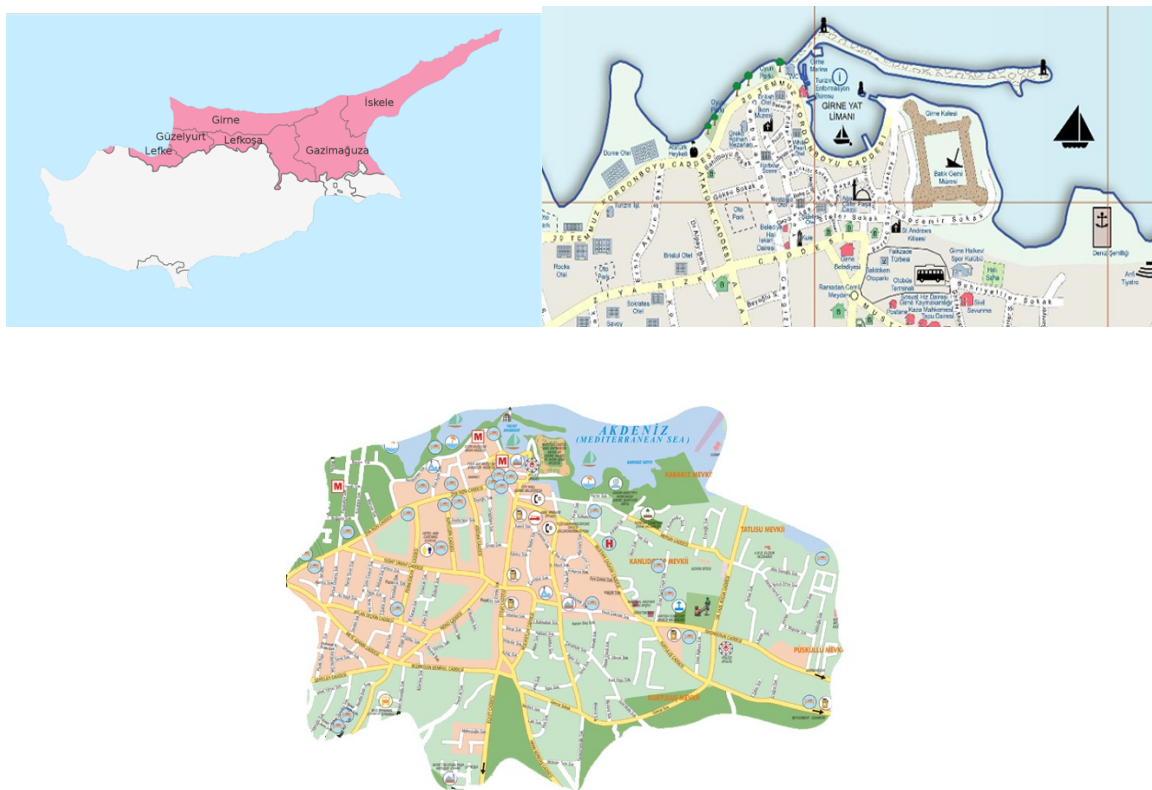


Figure 4. Location of the city of Kyrene



Kyrene urban problems can be divided into several specific cases based on urban structure and urban planning:

- Environmental problems and environmental protection
- Lack of attention to the state of urban cleanliness
- Invasion of tourism and deforestation for new constructions
- Do not use the natural vision of the city for environmental sustainability

Therefore, from what has been said, it seems that by smartening the city of Kyrene in Northern Cyprus, we can try to promote greenery and sustainability and continue as a sustainable urban model in a green city like Kyrene.

## Methodology

**Explanation examples:** this study reports on a multiple case study analysis conducted to start filling the knowledge gap generated by the dichotomous nature of smart city research and provide insights into what strategic principles European cities should consider when approaching the design and implementation of strategies for smart city development. To meet this aim, the divergent hypotheses emerging from the dichotomies are tested by analysing a group of outstanding examples of European smart cities, i.e., cities in which smart city development strategies have been implemented and proved to be successful in serving urban development by adopting ICT-related solutions. The sampling process is conducted by means of a theoretical approach<sup>7</sup>. (Mora., 2019, pp. 70-97)

**Table 2**  
Classification System 1.

Category	Description
A. Community building	Activities supporting the construction of an open and inclusive collaborative environment able to support the design and implementation of the smart city development strategy. This is done by raising citizen engagement in the smart city field, stimulating user-driven innovation and community-led urban development, increasing public awareness and digital literacy, informing the city's stakeholders and improving their level of understanding about smart city development and the benefits it can generate
B. Strategic framework	Activities aiming to develop the city's strategic framework for guiding and regulating smart city development. These activities produce: (1) action plans, programmes, guidelines, roadmaps, recommendations, governmental acts, policy papers and documents; (2) measures proposing standards and technical requirements, evaluation and assessment methods; and (3) workgroups that manage the general course of the smart city development strategy's operations
C. Services and applications	Activities allowing new ICT services and applications to be integrated within the city
D. Digital infrastructure	Activities aiming to develop the technological infrastructure necessary to use and benefit from the available ICT services and applications. Examples of activities include the integration of urban operating systems and the construction or extension of high-speed broadband networks and public Wi-Fi networks

The method of the present research is applied based on the purpose and descriptive-analytical in terms of data collection method and nature. Data collection tool for background and theoretical literature, library documents including books, articles - books - internet data. Which is a review of texts and content analysis to record and categorize information. Finally, the analysis of environmental capability from Gibson's point of view and recognizing its constituent components has emerged.

## **Discussion**

Kyrene city officials and managers have realized the importance of urban efficiency management and have played an effective role in this direction.

In the city of Kyrene, in the field of environmental management, a system has been provided to ensure the factors and conditions required for environmental sustainability during the development process initial, implementation, operation. It has been used during various stages of development, including:

- Planning: Using an environmental management program that will be approved by designers and planners.

Construction: Environmental assessment that will be used based on the need to submit an environmental assessment and review report and will be approved by Kyrene city officials based on pre-determined plans.

Exploitation: Implementation of environmental policies based on the need for environmental management compliance program.

Due to the complexity of managing the facilities and services of Kyrene, in order to manage the city, the city benefits from the policy of care, awareness and action of a central part called the control room of Kyrene. This control room is considered as the centre and centre of power of the city, which is responsible for reviewing, monitoring, controlling and managing the main infrastructure, services and facilities of Kyrene.

Part of the city's management is also dedicated to maintaining and updating public infrastructure and facilities. An example of Kyrene's urban infrastructure planning can be found in the construction of a common tunnel for infrastructure facilities such as high-voltage power cables, water pipes, cold water pipes, natural gas pipes, fiber optic and telecommunication cables, as well as pipes. Observed irrigation. This equipment can ensure that the destruction of the city as a result of daily operations is minimized, as well as facilitate maintenance and updating of facilities. By keeping these facilities inside these tunnels, access to annual inspections and maintenance can also be facilitated.

Ecological attitude as the main claimant of the spread of moral behavior with nature in the West, in the framework of environmental governance, considers the criterion of moral behavior with nature to formulate environmental laws and regulations to meet the necessary and physical desires that change the source of harm and suffering. The climate is not the answer. This means that human survival in the biosphere / planet is not endangered and endured by itself due to environmental problems. Thus, the ontological position of this view of the nature of the world limits their moral treatment of nature to environmental emergencies, while in Islam the purpose of moral treatment of nature is to approach God.

According to the ecosystem, increasing the resilience of the social-ecological system requires that environmental governance organize responsible or friendly behavior with nature, so that human beings can be led to a moral treatment of nature based on the ecosystem / green city model. Therefore, by translating ethical behavior with the environment into social rights and laws, environmental ethics is defined as synonymous with social rights and laws in the human field to manage and control human domination over nature and people as environmental managers of the social system - resilient environment that respects the law. They are considered law-abiding and thus moral. However, ethics is the frontier of law and order to end the environmental problems caused by human domination of nature and, consequently, to increase the environmental quality of people's lives by maximizing people's choices.

## Conclusion

In fact, urban design seeks to improve the quality of urban life, and the important point is that in all developed cities, the ultimate goal of design and planning is to create a quality and desirable space. In fact, it should be remembered that in the process of becoming a powerful and modern city, a society without identity, free from self-sufficiency, without a sense of social participation, with constant physical and social problems, should not be created. It has been the work of urban designers and planners. At the same time, by using smart tools and making the city smarter, they can benefit from a wide range of smart urban infrastructure and the efficiency of green resources. It shows how concepts such as garden-city, green city and smart city can be implemented. In fact, the urban design involved has not only played a decisive role in providing appropriate spaces for citizens, but also in the formation and facilitation of internal communication between various urban elements as well as human activities.

In other words, this article has sought to provide a context in which all managers, referring to the experience of the formation of the city of Kyrene and the process of its construction and operation, in order to create a green, modern and at the same time sustainable city. Urban designers and planners can benefit from these experiences and achievements in similar processes or even in the stages of revitalization and improvement of old cities, and at the same time from concepts such as city garden, green city and smart city in They plan with the help of some effective approaches to the formation of these concepts, such as proper planning to create neighbourhood spaces in order to improve the quality of urban life, revive the traditional identity of the city and pay attention to the culture of its inhabitants, trying to create a city Principles of universal and safe design, emphasis and focus on public transportation and replacing the personal transportation system with it, trying to improve visual qualities and considering the principles and criteria of urban landscape in the city design process, paying attention to urban ecology and placement Nature in the context of the city, the optimal use of environmental architectural solutions and the application of instructions Sustainable urban management practices are familiar in all stages of city development and finally consider the executive solutions and results in the sample.

# Bibliography

- A. Meesala, J. P. (2018). Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future. *Journal of Retailing and Consumer Services*, 40, 10.1016/j.jretconser.2016.10.011, 261-269.
- A.R. Pearson, J. S.-C.-K. (2018). Diverse segments of US public underestimate the environmental concerns of minority and low-income Americans. *Proceedings of the National Academy of Sciences*, 115 (49) , 12429-12434.
- Adunadepo, A.-M., & Sunday, O. (2018). Artificial Intelligence for Sustainable Development of Intelligent Buildings. In *Proceedings of the 9th CIDB Postgraduate Conference, Cape Town, South Africa*, 10.
- Škultéty, e. a. (2021). City Logistics as an Imperative Smart City Mechanism: Scrutiny of Clustered EU27 Capitals. *MDPI*. <https://doi.org/10.3390/su13073641>, 3641.
- Allam, Z. (2018). Building a conceptual framework for smarting an existing city in mauritius: The case of port louis. *J. Biourbanism*.4. [Google Scholar], 103–121.
- Allam, Z. N. (2018). Redefining the Smart City: Culture, Metabolism and Governance. *Curtin University Sustainability Policy Institute (CUSP), Perth, WA 6845, Australia*. <https://doi.org/10.3390/smartcities1010002>, 4-25.
- Appio, F., Lima, M., & Paroutis, S. (2018). Understanding Smart Cities: Innovation ecosystems, technological advancements, and societal challenges. *Technol. Forecast. Soc. Chang.* 142. [Google Scholar] [CrossRef], 1-14.
- Barletta, e. a. (2020). Extra Material of Analysis of Smart Cities. *MDPI*. Available online: <https://serlab.di.uniba.it/smart-cities/>.
- Ben-Eli, M. (2018). Sustainability: definition and five core principles, a systems perspective. *Sustainability Science* 13. <https://doi.org/10.1007/s11625-018-0564-3>, 1337–1343.
- Bentler. (2007). On tests and indices for evaluating structural models. *Personal. Individ. Differ*[Google Scholar] [CrossRef], 825–829.
- Bijker, W. E. (1995). Sociohistorical technology studies. In *Handbook of science and technology studies* (pp. 229–256). SAGE Publications, Inc. [Crossref], [Google Scholar].
- Boenig-Liptsin, M. (2018). AI and robotics for the city: Imagining and transforming social infrastructure in San Francisco, Yokohama, and Lviv. *Field Actions Sci. Rep* [Google Scholar], 16-21.
- Busti, M. (2018). L’urbanistica delle ‘centralità’ a Roma, fra retorica, strategia e prassi. In *Roma in transizione. Governo, strategie, metabolismi e quadri di vita di una metropoli. Roma-Milano: Planum Publisher, vol. 1*. [Google Scholar], 15-101.
- Caivano, e. (2020). Managing a Smart City Integrated Model through Smart Program Management. *MDPI*. <https://doi.org/10.3390/app10020714>, 2-23.
- Chun Sing, Y. J. (2020). A Review of Technical Standards for Smart Cities. *Mdpi. Published / doi:10.3390/cleantechnol2030019.*, 290-310.
- Cohen.B., M. (2018). The making of the urban entrepreneur. *Calif. Manage. Rev.*, 59, 71-91.
- Cugurullo, F. (2020). Urban artificial intelligence: From automation to autonomy in the smart city. [Google Scholar] [CrossRef], 2-38.
- Cugurullo, F. (2020). Urban artificial intelligence: From automation to autonomy in the smart city. *Front. Sustain. Cities*. [Google Scholar] [CrossRef], 1-14.
- Cugurullo, F. (2020). Urban artificial intelligence: From automation to autonomy in the smart city. *Sustain. Cities*. [Google Scholar] [CrossRef], 1-14.
- De Jong, M., Joss, S., Schraven, D., Zhan, C., & Weijnen, M. (2019). Sustainable-smart-resilient-low carbon-eco-knowledge cities; making sense of a multitude of concepts

- promoting sustainable urbanization. *J. Clean. Prod.*, 109[Google Scholar] [CrossRef], 25-38.
- D'Amico, E. (2020). Understanding sensor cities. [Google Scholar] [CrossRef] [PubMed], 4391.
- Ehrenfeld, J. (2021). *Sustainability by Design. A Subversive Strategy for Transforming our Consumer Culture*. Yale University Press.
- Everitt, T., & Hutter, M. (2018). Universal artificial intelligence. In *Foundations of Trusted Autonomy*; Springer: Cham, Switzerland, 15–46.
- Fermentia-Serra, F., Beuhofer, B., & Ivars Baidal, J. (2019). Towards a conceptualization of smart tourists and their role within the smart destination scenario. *Serv. Ind. J.* 2019, 39. [Google Scholar] [CrossRef], 109–133.
- Ferrera-Serra, F. (2018). Smart Tourism Destinations and Higher Tourism Education in Spain. Are we ready for this new management approach? In *Information and Communication Technologies in Tourism*. Springer: Cham, Switzerland. [Google Scholar], 437–449.
- Fokaifes and et al, .. (2018). The impact of the implementation of the European Energy Performance of Buildings Directive on the European building stock: The case of the Cyprus Land Development Corporation. *Energy Policy*, 1-8.
- Garay Tamajón, L. a. (2018). Barcelona seen through the eyes of TripAdvisor: actors, typologies and components of destination image in social media platforms. *Current Issues in Tourism*, Vol. 20 No. 1, 7-33.
- Gemmiti.R. (2019). Neoliberal Rome—The Role of Tourism . *MDPI. Social Sciences* , Volume 8, Issue 6 , <https://doi.org/10.3390/socsci8060196>, 196.
- Giffinger.R, a. G. (2010). Smart cities ranking: an effective instrument for the positioning of the cities? . *Centre de Política del Sòl i Valoracions - Universitat Politècnica de Catalunya*, 7-26.
- Giffinger.R, a. G. (2018). Smart cities ranking: an effective instrument for the positioning of the cities? *Centre de Política del Sòl i Valoracions - Universitat Politècnica de Catalunya*, 7-26.
- Gonzalez-Reverte, F., Diaz-Luque, P., Gomis-López, J., & Morales-Pérez, S. (2018). Tourists' risk perception and the use of mobile devices in beach tourism destinations. *Sustainability*. [Google Scholar] [CrossRef], 413.
- Grassl, G., & Groß, P. (2019). Smart city. In *Sustainable Urban Planning. Vibrant Neighbourhoods Smart Cities Resilience*. MDPI. [https://www.academia.edu/41196971/Vibrant\\_Neighbourhoods\\_Smart\\_Cities\\_Resilience\\_Sustainable\\_Urban\\_Planning](https://www.academia.edu/41196971/Vibrant_Neighbourhoods_Smart_Cities_Resilience_Sustainable_Urban_Planning) , 25-27.
- Hall, C. a. (2018). Measuring the relationship between tourism and walkability? Walk Score and English tourist attractions. *Journal of Sustainable Tourism*, doi: 10.1080/09669582.2017.1404607.
- Hall.R.E. (2000). The vision of smart city. *2nd International Life Extension Technology Workshop Paris, France* (pp. 1-7). Paris, France : 2nd International Life Extension Technology Workshop .
- Hall.R.E. (2019). The vision of smart city. Paris, France: 2nd International Life Extension Technology Workshop.
- Henderson, J. (2018). Making cities more walkable for tourists: a view from Singapore's streets", *International Journal of Tourism Cities*. Vol. 4 No. 3. <https://doi.org/10.1108/IJTC-11-2017-0059>, 285-297. <http://www.urbanistica.comune.roma.it/prg.html>. (n.d.).
- Industria, M. d. (2018). Comercio y Turismo—UNWTO. *2nd UNWTO World Conference on Smart Destinations*. Available online:

- <http://www.smartdestinationsworldconference.org/19238/detail/ii-congreso-mundial-de-destinos-turisticos-inteligentes.html> .
- Ingwersen, P., & Serrano-López, A. (2018). Smart city research 1990–2016. *Scientometrics*, 1205–1236.
- Ismagilova, e. a. (2019). Smart cities: Advances in research—An information systems perspective. *International Journal of Information Management*, 88-100.
- Jessop, B. (2020). The heartlands of neoliberalism and the rise of the austerity state. New York and London: In Handbook of Neoliberalism. Edited by Simon Springer, Kean Birch and Julie Mac Leavy.
- Kanellopoulou, D. (2018). Walking the public: re(visiting) Athens’s historical centre. *International Journal of Tourism Cities*, Vol. 4 No. 3. available at: <https://doi.org/10.1108/IJTC-12-2017-0084>, 298-315.
- Karupiah, P. a. (2018). A qualitative study on walking in the Penang Botanical Gardens, Malaysia. *Annals of Leisure Research*, Vol. 21 No. 2, 199-214.
- Krishna. (2019). Smart cities and entrepreneurship: An agenda for future research. *Technological Forecasting and Social Change*, Volume 149, 119763.
- Lee, M., Yun, J., Pyka, A., Won, D., Kodama, F., Schiuma, G., . . . al., e. (2018). How to respond to the fourth industrial revolution, or the second information technology revolution? Dynamic new combinations between technology, market. *Open Innov. Technol. Mark. Complex.* [Google Scholar] [CrossRef], 21.
- lin.et, a. (2018). Artificial intelligence test: A case study of intelligent vehicles. *Artif. Intell. Rev.*50[Google Scholar] [CrossRef], 441-465.
- Lytras, M., & Visvizi, A. (2018). Who uses smart city services and what to make of it: toward interdisciplinary smart cities research. *Sustainability*. 10. [Google Scholar] [CrossRef].
- Macrorie, e. (2020). Robotics and automation in the city. *Urban Geogr.* 2020. [Google Scholar] [CrossRef].
- Maslow., A. (1975). A Theory of Human Motivation. In F. M. Levine, Theoretical Readings in Motivations: Perspective on Human Behaviour. Chicago: Rand McNally College.
- MichelaLe.Piraa, E. (2021). Roman holiday: Tourist heterogeneous preferences for walking path elements. *Research in Transportation Economics Volume 90*.<https://www.sciencedirect.com/science/article/abs/pii/S0739885921000780>.
- Mora. (2019). Strategic principles for smart city development: A multiple case study analysis of European best practices. *Journal Technological forecasting and social change*, 142., 70-97.
- Mora.L. (2019). Strategic principles for smart city development: A multiple case study analysis of European best practices. *Journal Technological forecasting and social change*, 142, 70-97.
- Morris, B. (2018). The walking institute: a reflexive approach to tourism. *International Journal of Tourism Cities*, Vol. 4 No. 3. available at: <https://doi.org10.1108/IJTC-11-2017-0060> , 316-329.
- Muñiz, J. L. (2010). Classical theory and item response theory. *Pap. Psychologist.* [Google Scholar], 57-66.
- N.A. Lewis Jr., D. K. (2020). <https://www.sciencedirect.com/science/article/pii/S2215016120301631#:~:text=The%20Behavior%20of%20Same%2DRace%20Others%20and%20its%20Effects%20on%20Black%20Patients%E2%80%99%20Attention%20to%20Publicly%20Presented%20HIV%2DPrevention%20Information>. *Health Communication* (2020), 10.1080/10410236.2020.1749369 Google Scholar.

- Norman, D. (2018). *The design of everyday things: Revised and expanded edition*. Google Scholar.
- Orlowski, A., & Romanowska, P. (2019). Smart Cities Concept: Smart Mobility Indicator. *Cybern. Syst*, 118-131.
- Overview—Guide, S. C. (2020). *Smart Cities Overview—Guide*. BSI Standards Publication / Available online: <http://shop.bsigroup.com/> .
- Pattberg, P., & Widerberg, O. (2018). Transnational Multi-Stakeholder Partnerships for Sustainable Development: Building Blocks for Success. *SSRN Electron. J. [Google Scholar] [CrossRef]*.
- Pettit, C., Bakelmun, A., Lieske, S., Glackin, S., Hargroves, K., Thomson, G., . . . Dia, H. (2018). Planning support systems for smart cities. *City Cult. Soc. 12. [Google Scholar] [CrossRef]* , 13-24.
- Ram, Y. a. (2018). Walk Score and tourist accommodation. *International Journal of Tourism Cities*, available at: <https://doi.org/10.1108/IJTC-11-2017-0066>.
- Roth.S. (1999). The state of design research. *Design Issues*. <https://doi.org/10.2307/1511839>, pp. 18-26.
- S. Fu, Q. Y. (2018). Who will attract you? Similarity effect among users on online purchase intention of movie tickets in the social shopping context. *International Journal of Information Management*, 40, 10.1016/j.ijinfomgt.2018.01.013, 88-102.
- Shahrokni, L. A. (2018). Implementing smart urban metabolism in the stockholm royal seaport. *J. Ind. Ecol.*, 19, 917-929.
- Sheth, A., Srivastava, B., & Michahelles, F. (2018). IoT-enhanced human experience. . *IEEE Pervasive Comput.*22. *[Google Scholar] [CrossRef]*, 4-7.
- Singh, S., Sharma, P., Yoon, B., Shojafar, M., Cho, G., & Ra, I. (2020). Convergence of blockchain and artificial intelligence in IoT network for the sustainable smart city. *Sustain. Cities Soc. [Google Scholar] [CrossRef]*, 63.
- Singhand et al, .. (2019). Smart monitoring and controlling of government policies using social media and cloud computing. <https://doi.org/10.1007/s10796-019-09916-y>, 1-23.
- T. Dietz, C. W. (2018). Environmentalism, norms, and identity. *Proceedings of the National Academy of Sciences*, 115 (49) , 12334-12336.
- Thomas, C. F. (2021). *Naturalizing Sustainability Discourse: Paradigm, Practices and Pedagogy of Thoreau*. Arizona State University: Leopold, Carson and Wilson: Ph.D. Thesis: Arizona State University.
- Visvizi, A., Lytras, M., Damiani, E., & Mathkour, H. (2018). Policy making for smart cities: Innovation and social inclusive economic growth for sustainability. *J. Sci. Tech. Police Manag. [Google Scholar] [CrossRef]*, 126–133.
- Yigitcanlar, T., & Lee, S. (2014). Korean ubiquitous-eco-city: A smart-sustainable urban form or a branding hoax? *Technol. Forecast. Soc. Chang.* 89. *[Google Scholar] [CrossRef]*, 100–114.
- Yu, Y., & Zhang, N. (2019). Does smart city policy improve energy efficiency? Evidence from a quasi-natural experiment in China. *J. Clean. Prod.*229. *[Google Scholar] [CrossRef]*, 501–512.