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Urban Green Spaces: Social Cohesion, Human Health, and Islamic Green City

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ABSTRACT

Sustainable development has become top priority for many countries in their urban development plans in responding to climate changes. Green dimension is a critical aspect of pursuing sustainability in urban development. Copenhagen, Denmark, is one of the leading cities adopted the green city concept to achieve sustainability. As the world's most populous Muslim-majority country, Indonesia also started to adopt the green city concept in its current development of new capital city to address environmental problems. Based on these two (2) examples, this study is intended to examine the importance of urban green spaces (UGS) within urban context and its benefit to the inhabitants. This study delves into the narrative of Islamic views on natural and urban environments based on the principles of sustainability in the Qur'an and Hadith. The result of this study will briefly outline the concept of Urban Green Space (UGS) from Islamic perspective. The case study examination will be used to access the theoretical review found with the actual condition on ground. The examples are adopted from the government initiative of Islamic Green City approach.

INTRODUCTION

Urban sustainability is an approach to combat climate change in the context of urban development. Many cities worldwide have pursued urban sustainability, with green dimensions as a key performance indicator. Urban Green Spaces (UGS) is a leading green dimension in urban sustainability that serves various purposes, including recreational, economic, and environmental benefits. This is particularly relevant for cities with a strong vision and mission to become green (Lee, Jordan, & Horsley, 2015). One of the

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approaches in UGS is based on the theory of Biophilia, which suggests that humans have an innate tendency to seek connections with nature and other forms of life (Amat et al., 2020). Quran repeatedly narrates the analogy of God's creation as the source of knowledge in sustainability as Foltz, R. C. (2003) gave an example of mountain, water, river, trees, and fruit that had appeared multiple times in the holy script in explaining the Eco-system that led to sustainable development. At the end of the verse in Surah Ar-Rad (Quran 13 :3), there is always a sentence for Muslims to reflect upon the creation of the natural environment, mimicking the sustainable ecosystem as a guide to achieving sustainability goals.

Numerous studies have shown the positive impact of exposure to the natural environment on human health, especially in urban areas with limited green spaces. UGS refer to open spaces with greenery, such as pocket parks, green roofs, community gardens, and rambles. Many new city developments have prioritised the relationship between human health and natural resources as part of their urban health agenda. Green spaces play a crucial role in creating healthy and liveable cities. Green spaces are essential in sustaining urban context, especially in promoting urban health (Kondo et al., 2018).

Islamic teachings urge people to be responsible for the natural environment. The religion emphasises man's role as both a user and a preserver of natural resources. The Quran states, “He is that which has made you inheritors in the earth: if then, any do reject (Allah), their rejection (works) against themselves” (Surah Al-Fatir, 35:39). This verse has been interpreted by Abu Bakr Bakader which mean that humans are merely managers of the earth, and not its proprietors, beneficiaries, or ordainers.

METHODOLOGY

This paper examines the emergence and significance of UGS in promoting social cohesion and general health among the public. It also discusses the relationship between UGS and Islamic principles, particularly in the context of cities. The discussion is based on a series of literature reviews and some case studies that emphasise the importance of UGS in developing healthy cities that align with sustainability from Islamic principles and views. Based on the selected concept from the themes found in the Quran, this paper will review the concepts of UGS from the Qur'an and hadith, highlighting the importance of nature to humanity within the context of the historical case study taken from the development of the Islamic city.

DISCUSSION

Emergence of Urban Green Spaces

The Romans were the earliest civilisation to recognise the value of incorporating rural elements into urban settings. Augustus transformed the Campus Martius by adding lakes and recreational areas, turning it into a park-like space. Wealthy Romans developed green infrastructure, such as the *Horti*—urban villas set within gardens—bringing the essence of the countryside into the city on a grand scale. In the early 17th century, the British also saw the advantages of rural spaces in urban areas. Landscape gardener Charles Bridgeman created the illusion of countryside within the city, inspiring the creation of many urban squares, most of which remain today, offering affluent residents fresh air and a reminder of their country estates. St. James’s Square, established by an Act of Parliament in 1726, became the first green space to be formally enclosed, allowing residents to "clean, repair, adorn, and beautify the same in a becoming and graceful manner" (Urban Rambles, 2015).

The concept of 'rus in urbe', which means the illusion of countryside in a city, still shapes cities today, as Longstaffe-Gowan (2012) notes. As urbanisation continues to increase city population, access to nature becomes limited, and exposure to environmental hazards such as air pollution increases. Nature-based solutions, including green spaces, are being adopted to improve the quality of urban life. Urban Green

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Spaces, such as parks, playgrounds, and pocket gardens, are crucial in exposing urban settings to nature, protecting urban biodiversity, reducing hazardous urban environments, and improving health and well-being. It is vital to ensure that these green spaces are easily accessible to all population groups in the city and are distributed equally, as highlighted (Braubach et al., 2021). The Qur'an frequently speaks of balance (mizan) in creation, urging humans to maintain this equilibrium. Green parks contribute to this balance by reducing pollution, improving air quality, and fostering biodiversity within urban environments, as stated in Surah Rahman; "And the heaven He raised and imposed the balance, that you do not transgress within the balance." (Qur'an 55:7-8). Green spaces in cities help balance urbanisation and the natural world, supporting both environmental and human health

Social Cohesion from Urban Green Spaces

Urban green spaces are potential spaces stimulating social cohesion. UGS, such as parks and community gardens, are great places for meet and greet and can be potential nodes in a city. It has been linked to positive health behaviours that also trigger a sense of connection among people, which could be associated with various physical and psychological health and well-being benefits (Reyes-Riveros et al., 2021). UGS encourages positive social interactions that will also cultivate social cohesion and enhance people's health and well-being. Both the quality of spaces like parks and the user's proximity to parks were significant in developing the sense of social interaction within a community (Francis, Giles-Corti, & Wood, 2012).

A study done in the Croatian city of Zagreb found that the awareness of UGS qualities, such as cultural ecosystems, influenced the use of these spaces. Positive memories like childhood memories, experiences in natural environments, recreational facilities in parks, and their emotional responses to nature are essential factors needed to support urban greening (Sen & Guchhair, 2021). Factors such as amenities, community attachment, social cohesion, and a sense of security as those that influence people's appreciation for UGS, as mentioned in a study by Barrera et al. (2016). Place-based recreational services type of UGS are more widely recognised than the service related to education and cultural identity. It is important to understand the relationship between social cohesion and UGS as a holistic approach to health, as it catalyses social cohesion and social capital and enhances psychological health and well-being (Jennings & Bamkole, 2019).

From an Islamic perspective, green parks contribute to social cohesion by fostering community interaction, cooperation, reflection, and well-being. These spaces align with fundamental Islamic principles found in the Qur'an, such as unity, justice, collective responsibility, and care for God's creation as stated in the Quran Surah Al-Hijr; "And We have made for you therein means of living, and [for] those for whom you are not providers" (Qur'an 15:20). Nasr, S. H. (1996) has explained about the creation of place that can inspire gratitude, humility, and a sense of shared responsibility toward preserving God's creation, fostering unity in purpose among community members.

Urban Green Spaces and Human Mental and Spiritual Health

Urban living has been linked to a higher prevalence of mental health issues, 40% higher compared to rural areas (United Nations, 2018). According to a recent report by the World Health Organisation (Braubach et al., 2021), spending time in natural environments such as green and blue spaces can positively affect both physical and mental health in urban communities. Kabisch (2019) also found that while urban green spaces (UGS) can positively impact general human health, they are particularly beneficial for mental health due to its unique features. Previous studies have shown a strong correlation between access to UGS and the state of mental health, including increased energy levels, better mood, and improved cognitive functions such as attention and memory (Olszewska-Guizzo et al., 2020; Kondo et al., 2018; Ha, Kim & With, 2022; Liu et al., 2022). Humans have an inherent attraction to nature, and spending time in green and

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blue spaces can have a restorative effect on mental health by helping to restore cognitive function (Braubach et al., 2021; Ha, Kim & With, 2022).

UGS exposure can reduce morbidity and mortality rates (Olszewska-Guizzo et al., 2020; Braubach et al., 2021). The presence of UGS can promote physiological recovery by providing opportunities for a healthy lifestyle through spaces that encourage physical activities such as walking, running, and cycling. It also plays a crucial role in regulating air quality in urban areas, which is important for human health. Through proper design and planning of UGS, plants and vegetation in green spaces can filter air and improve air quality through particle deposition, dispersion, and modification (Zupancic, Bulthuis, & Westmacott, 2015; Diener & Mudu, 2021). Therefore, the association between green spaces and air pollution is crucial for human physical and mental health.

It is crucial to consider public perception when connecting UGS to human health. The design of UGS, including typology and sizes, diversity of elements such as materials, types of plants and water elements, and accessibility, is highly related to the effect of UGS on human physical and mental health. The distance from nearby neighbourhoods to UGS affects the rate, period, and intensity of use by the public, which has long-term implications for their health (Zhang, Tan, & Diehl, 2017). In UGS design, it is also essential to ensure that the space is easy to care for and maintain, making it feel clean and safe (Braubach et al., 2021). On the other hand, a study by Nasir & Rahim (2020) found that the public is more likely to take care of their local green and blue urban spaces if they believe that the spaces can provide intangible benefits such as social interaction, spiritual benefits, and inspiration.

CASE STUDY

"Islamic Green City"

Based on the three (3) areas of discussion, the reason for the emergence of UGS, the impact of UGS towards the community and the effects of UGS on human physical and mental health, a case study on Islamic Green City has been selected for examination. The case study selection is based on the principle of sustainability found from an Islamic perspective, which has been highlighted in the discussion. Under Shariah law, it is a privilege of people to utilise and sustain natural resources and elements. Muslims have always been thought to be good stewards of natural resources, as it should benefit others, as stated in Surah Al-Baqarah.

> "Behold! In the creation of the heavens and the earth; in the alteration of the night and the day; in the sailing of the ships through the ocean for the profit of mankind; in the rain which Allah sends down from the skies, and the life which He gives therewith to an earth that is dead; in the beasts of all kinds that He scatters through the earth; in the change of the winds, and the clouds which they trail like their slaves between the sky and the earth (Here) indeed are signs for a people that are wise" (Qur'an, 2:164.).

The Quran emphasises the relationship between human beings and nature, which is about utilising and developing natural resources. Many Quranic verses and hadith reminded Muslims not to damage or harm plants and animals. These verses in Surah Al-Anaam (Qur'an, 6:38; 6:59) teach us that all creatures are under the domain of Allah, and nothing happens without His will. Natural elements and creatures are co-inhabitants of this universe and, as such, should be treated as communities, not to be harmed by humans. Nature is a symbol of God's greatness, and therefore, it is the responsibility of humans to preserve nature and benefit from it. Traditional Muslim cities appear not only in buildings and streets but are more of a result of collective objectives and aspirations. This is why conventional Muslim cities share many similarities in their urban characteristics and conditions, which are based on Islamic principles of urban sustainability.

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As this paper discussion is on the impact of UGS towards human well-being, one of the case studies has been selected and examined within the proximity of the largest Muslim population, which is Indonesia, under the initiative of the Indonesia Government through the Green City Development Programme (P2KH). The selected case study meets the discussion checklist, which states that the city is known for its gemstone trade, which signifies the richness of its natural resources. It is also an example of adopting a rural natural environment into new urban development. The selected case study is Martapura, the capital city of the Banjar Empire (1859 - 1863), as a fast-growing city development. It represents Islamic Green City's approach by combining the concept of green city and Islamic city principles. Martapura is one of the cities in the province of South Kalimantan that actively promotes the idea of a green city. One of the most critical concerns is the availability of open green space in urban areas (Caesarina & Rahmani, 2019).

The influence of Islamic design principles can be seen in Martapura. The mission of Banjar Regency aims to encourage stakeholders to establish Martapura as a green city by adopting Islamic Green City development guidelines. One of the strategies is improving the quality of natural resources by preserving the natural environment. In the action plan of forming a green city, Martapura has implemented the integrated and comprehensive approaches, which are based on three (3) main elements of sustainability, which are environment, society, and economy - also known as the three Es: Environment, Economy, Equity (Caesarina & Aina, 2018). It perfectly fits with the discussion on the characteristics of UGS in the literature review.

Fig.1. Siring Road Banjarmasin, A Highway Beside The Martapura River.

Source: Gandi (n.d)

Based on the observation from the selected case study, the principles that form the basis of Islamic Cities include environmental and natural laws and religious and cultural beliefs. The design principles of Matapura are based on the Sharia Law, derived from the teachings of the Qur'an and hadith, and the value of social principles shared among its community (Caesarina & Aina, 2018). The city's-built form adapted to the existing climate and weather conditions and aligned with the topography conditions in South Kalimantan. The development is governed by natural laws and religious and cultural beliefs, which directly influence the design of its buildings. It gives a distinct characteristic to its architecture. Several Islamic sustainability principles have been adopted as the city grows, which can be seen in the city's planning.

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Shariah law always governs the planning of physical and social relations between public and private zones. In addition, the planning guidelines also deal with the social urban societies that are grouped based on ethnicity by respecting cultural perspectives among different communities. As the discussion of adopting rural natural environment into urban development design, the selected case study has shown significant intangible sustainable design principle of UGS that fit with the need of current growth in urban development areas.

CONCLUSION

Urban green spaces have been around since the early days of Roman civilisation. The idea of having a piece of countryside within a city is widely accepted and appreciated for its benefits to urban populations. This paper narratively tries to connect the early establishment of UGS from early civilisation to the practical adaptation of current urban development with the intention of sustaining natural resources within a compact urban area. The literature found some connectivity between UGS and urban dwellers. The impact of UGS is significant for individual well-being and the community in general. Parks, open spaces, and other green and blue spaces provide essential services for urban functionality and health. Green spaces are a practical approach for cities to create a healthy urban lifestyle and infrastructure, resulting in urban sustainability. Urban green spaces promote social cohesion, providing opportunities for city communities to engage in outdoor activities together. As highlighted in the discussion, the Quran has stated that the concept of sustainability lies in the principle of *Mizan* (Balance). It signifies harmony in nature by virtue of developing and striving for modernity in the built environment without neglecting the importance of natural resources. The key indicator of success in achieving sustainability relies on good governance, as a human is always bestowed with the role of *Khalifah,* stewardship and care for the earth. This paper concludes that urban green spaces improve the quality of life for urban dwellers, improving physical and mental health and manifesting through social and communal sustainability. The concept of an Islamic green city combines the principles of *Mizan* and *Khalifah*. The approach to an Islamic green city is to balance green city principles and Islamic city principles.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted without any self-benefits or commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Abdul Rahman Hatta conducted the initial research and penned the first draft of the article. Nurul Amira Abd Jalil conceptualised the central idea of the research and meticulously revised the article. Rashidah Jimi Sham and Mohd Hazwan Hamidi provided valuable insights in reviewing the article's final version.

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