CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Environmental Sciences

Department of Landscape and Urban Planning

Is A Green City Also A Happy City? Exploring The Association Between Significant Indicators For A Happy City And Human Well-Being: Case Study Prague

Diploma Thesis

Supervisor: doc. Peter Kumble, Ph.D.

Advisor of thesis: Ph.D. candidate Masoud Barikani

Author of thesis: Zhor Fatima Zahraa Adjmi

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Zhor Fatima Zahraa Adjmi, M. arch.

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Is A Green City Also A Happy City? Exploring The Association Between Significant Indicators For A Happy City And Human Well-Being: Case Study Prague

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Objectives of thesis

This study seeks to explore what is the relationship between urban greenery and residents' perceived sense of well-being in the context of Prague. It is assumed that cities that have a higher rating on the Green City Index and the Happy City Index are associated with higher levels of green space per capita. Furthermore, we contend that certain indicators related to urban green spaces play a pivotal role in enhancing the overall quality of life for individuals in Prague.

The primary aim of this research is to identify and examine the drivers that define a 'happy city' and to investigate the relationship between these criteria and the principles of 'green cities.' By focusing on the case study of Prague, this thesis aims to elucidate how specific aspects of green initiatives contribute to residents' overall sense of well-being and perceived happiness, and with that, what are the factors for successful urban planning?

Methodology

Case Study: Prague

• Conduct a review of Prague's urban development and green initiatives.

• Analyse Prague's performance on the Green City Index and Happy City Index

• Define the specific green initiatives and urban design guidelines/requirements that contribute to Prague's rank on the Happy City Index.

Methodology will include the following steps

• Quantitative Approach: Survey on Happiness and Urban Greenery Perception:

1.Sampling: Randomly selecting participants to ensure demographic diversity.

2. Questionnaire Development: Creating a survey instrument with validated happiness scales and questions on urban greenery perception.

3. Data Collection: Administering surveys through online platforms or face-to-face interviews.

4. Statistical Analysis: Utilizing statistical tools, including regression analysis, to identify correlations between happiness scores and perceived urban greenery.

The proposed extent of the thesis

65 pages

Keywords

Happy City, Urban greenery, Green City, Human Well-being

Recommended information sources

Dolan, P. with T. Peasgood, M. White. 2017. Do we really know what makes us happy? A review of the literature on the factors associated with subjective well-being. Journal of Economic Psychology

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Montgomery, Charles. 2013. Happy City: Transforming Our Lives Through Urban Design. Farrar, Straus and Giroux, Random House, Penguin Books

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The Diploma Thesis Supervisor

doc. Peter Kumble, Ph.D.

Supervising department

Department of Landscape and Urban Planning

Electronic approval: 15. 1. 2024

prof. Ing. Petr Sklenička, CSc.

Head of department

Electronic approval: 6. 2. 2024

prof. RNDr. Michael Komárek, Ph.D.

Dean

Prague on 12. 03. 2024

Author's Declaration

I hereby declare that I have independently elaborated the diploma thesis with the topic of: **" Is A Green City Also A Happy City? Exploring The Association Between Significant Indicators For A Happy City And Human Well-Being: Case Study Prague"** and that I have cited all the information sources that I used in the thesis and that are also listed at the end of the thesis in the list of used information sources. I declare that I have used AI tools in accordance with the university's internal regulations and principles of academic integrity and ethics. I am aware that my diploma/final thesis is subject to Act No. 121/2000 Coll., on copyright, on rights related to copyright, and on amendment of some acts, as amended by later regulations, particularly the provisions of Section 35(3) of the act on the use of the thesis. I am aware that by submitting the diploma/final thesis, I agree with its publication under Act No. 111/1998 Coll. on universities and on the change and amendments of some acts, as amended, regardless of the result of its defense. With my own signature, I also declare that the electronic version is identical to the printed version, and the data stated in the thesis has been processed in relation to the GDPR.

Zhor Fatima Zahraa Adjmi
In Prague on 12.03.2024

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Abstract

The main objective of this research thesis is to explore the relationship between urban greenery and residents' perceived sense of well-being in Prague. It is assumed that cities with a higher rating on the Green City Index and the Happy City Index are associated with higher levels of green space per capita. Furthermore, we contend that specific indicators related to urban green spaces play a pivotal role in enhancing the overall quality of life for individuals in Prague; this study also aims to look at what characteristics of urban greenery affect people's well-being the most, as a method above, for the data collection for this quantitative research, the author used online survey shared on online platforms. Respondents were selected based on random sampling, and the survey consisted of 191 participants. Based on the findings, strong positive correlations were found between UGSs and life satisfaction and sense of well-being and happiness among survey participants. a majority expressed overall satisfaction with life and found their activities meaningful, with proportions feeling somewhat satisfied (57.26%). Additionally, The survey data shows how respondents think about the importance of green spaces in different aspects of their lives. The perceived importance of nature in improving well-being is demonstrated by the substantial majority, 87.17%, who feel that green environments have a significant part in their overall happiness. Analogously, 94.87% of participants believe that various green spaces are crucial in residential areas, highlighting the importance of accessible and varied natural resources. Survey respondents also divulged the features of green spaces that draw them back from repeat visits. Urban planners, decision-makers, and landscape architects can leverage the insights gleaned from this questionnaire-based survey to understand better the diverse needs of various demographic groups frequenting urban green areas and how UGS influences residents' sense of well-being and overall happiness.

Keywords: urban green spaces, urban green space benefits, well-being, QoL, happiness, Happy City, Green City.

Abstrakt

Hlavním cílem této výzkumné práce je prozkoumat vztah mezi městskou zelení a vnímaným pocitem pohody obyvatel Prahy. Předpokládá se, že města s vyšším hodnocením indexu zeleně a indexu šťastného města jsou spojena s vyšší mírou zeleně na obyvatele. Dále tvrdíme, že konkrétní ukazatele týkající se městské zeleně hrají klíčovou roli při zvyšování celkové kvality života jednotlivců v Praze; cílem této studie je také podívat se na to, jaké charakteristiky městské zeleně nejvíce ovlivňují pocit pohody lidí. jako výše uvedenou metodu pro sběr dat pro tento kvantitativní výzkum autor použil online dotazník sdílený na online platformách. Respondenti byli vybráni na základě náhodného výběru a průzkumu se zúčastnilo 191 osob. Na základě výsledků byly zjištěny silné pozitivní korelace mezi UGS a životní spokojeností a pocitem pohody a štěstí účastníků průzkumu. většina vyjádřila celkovou spokojenost se životem a považovala své aktivity za smysluplné, přičemž poměrná část se cítila do jisté míry spokojená (57,26 %). Údaje z průzkumu navíc ukazují, jak respondenti vnímají význam zeleně v různých aspektech svého života. Vnímání významu přírody pro zlepšení životní pohody dokládá výrazná většina, 87,17 %, která se domnívá, že zelené prostředí má významný podíl na jejich celkovém štěstí. Analogicky se 94,87 % účastníků domnívá, že různé zelené plochy jsou v obytných oblastech klíčové, což zdůrazňuje význam dostupných a rozmanitých přírodních zdrojů. Respondenti průzkumu také prozradili, jaké vlastnosti zelených ploch je lákají k opakovaným návštěvám. Urbanisté, tvůrci rozhodnutí a krajinářští architekti mohou využít poznatky získané z tohoto dotazníkového šetření, aby lépe porozuměli různorodým potřebám různých demografických skupin, které často navštěvují městskou zeleň, a tomu, jak UGS ovlivňuje pocit pohody a celkové štěstí obyvatel.

Klíčová slova: městská zeleň, přínosy městské zeleně, pohoda, QoL, štěstí, Happy City, Green City.

Table of Contents

1. Introduction

Cities are collections of people and ecosystems. A happy city is a well-developed system that ensures well-being and comfort and creates a healthy environmental infrastructure. A Happy city is a concept that treats emotional infrastructure as the most critical infrastructure in any city (Kumar & Director, n.d.). A happy city is a city that induces positive feelings and encourages people to spend time there, with UGS being a key factor (Cloutier et al., 2014). Cities are brick-and-mortar structures, but they become happy cities when they can give residents joy.

A happy city's primary mission is to prioritize its residents' well-being and happiness. Happiness has been characterized by multiple dimensions ranging from life satisfaction to the prevalence of positive emotions; many studies that the author examined in this literature review emphasize the pivotal role of green spaces and social cohesion in fostering urban happiness; however, the ambiguity of happiness is a challenge in quantifying and measuring its impact on urban development, various studies propose various methodologies to address questions such as who is happiness to consider and how to evaluate happiness within cities and communities.

Cities that are classified as green enable the people who live and work in them to carry out their daily lives in an environmentally sound manner; therefore, In the Green City concept, urban nature contributes to the QoL of its residents and is also considered a vital element for urban life (Breuste et al., 2015).

Prague, the capital of the Czech Republic, ranks the 13th greenest city in Europe. Demonstrating its dedication to environmental sustainability, Prague has earned recognition as the 10th most sustainable city in Europe according to SDG11 and various other ranking systems. Considering this, this study explores the correlation between Prague as a green city and the happy city concept. Specifically, this thesis investigates urban green spaces' role and residents' perceived sense of happiness.

Recognizing the value of green spaces, urban planners and landscape architects should prioritize inclusivity and consider the various interests of all socioeconomic groups. However, achieving this goal will require increasing work as cities grow more diverse.

The study is structured into two main sections: theoretical and empirical. The theoretical section encompasses a literature review and an analysis of the study area's urban structure

and green spaces, in which the author first summarizes lessons learned from a cross-disciplinary set of studies about the drivers of happiness. The empirical part involves qualitative and quantitative analyses aimed at measuring happiness. Focusing on Prague, the author developed a survey to assess residents' well-being; this method was previously employed in various urban happiness and quality-of-life studies. The remaining sections of the study are organized as follows: Part 4 introduces the methodology model, Part 5 presents the results, Part 6 discusses policy implications and delves into the results and limitations of the study, and finally, the last section concludes by outlining avenues for future research.

2. Objective of the study

This research thesis aims to investigate and answer the following questions:

- What is the relationship between urban greenery and residents' perceived sense of well-being in Prague?
- If green spaces influence well-being and happiness, which specific characteristics contribute the most to residents' perceptions?
- What factors are essential for successful urban planning in the context of promoting happiness and well-being in cities like Prague?
- Is A Green City Also A Happy City?

This research also aims to identify and examine the drivers that define a 'happy city' and how these factors are linked to the concept of a green city.

3. Literature review

3.1 Introduction: Delving into the Concept of 'Happy Cities'

3.1.1 Definition of the concept and its multifaceted dimension

The idea of a happy city has appeared considerably for a couple of decades among planners to create urban environments that prioritize well-being and happiness (Chao 2017); this idea has been present in urban planning for centuries, with planners and their patrons often aiming to improve the lives of city inhabitants (Yuan et al., 2016). However, integrating happiness-related concepts into urban planning has been a gradual process, with some ideas, such as QoL and well-being, being more influential than others (Parham, 2014).

The first mention or example of the Happy city concept dates to Plato's Republic and his idea of utopia. Plato's social model only exists when conditions are equal and preferable to all citizens to achieve happiness among all citizens.

Happiness can be defined in many ways, but in the most contemporary terms, happiness is defined as life satisfaction and having more positive emotions than negative ones. (Diener et al., 2009a), Therefore, a Happy City can be described as a place where all levels of happiness and vitality of citizens are provided and promoted, and it is considered one of the most essential pillars of QoL in urban spaces (Jamini, 2021).

A happy city could be defined as a place that induces positive feelings and encourages people to spend time there, with UGS being a key factor. (Cloutier et al., 2014), Another study by Yuan et al., (2016) defines Happy City as a concept related to creating an enjoyable place for the well-being of humanity.

A happy city is a city that integrates economic, environmental, and social aspects to improve the quality of city life for present and future generations (Mirzaei & Zangiabadi, 2021) .However, research by Cloutier et al., (2014) defines a happy city based on different Urban planning goals, such as being a "smart" city, a city of digital technologies, or an eco-city that considers balanced natural and anthropogenic compatibility with the natural environment.

All the previous definitions agree that a happy city is a city of Well-being; therefore, in this Thesis, a happy city is mainly defined as a place where people achieve their highest well-being potential; in this Thesis, we treat happiness and well-being as synonyms.

The concept of a happy city, which prioritizes its residents' well-being, comfort, and safety, is a critical consideration in urban planning(‘40-47’, n.d.). This concept is fundamental in the face of increasing urbanization, focusing on creating user-friendly and sustainable built environments (Chao, 2017). The intersection between urban design and the science of happiness is crucial in creating enjoyable cities; green spaces and social cohesion are Fundamental to building a happy city (Montgomery, 2013). However, In the planning and design sector, Happiness is too ambiguous to calculate or measure; several research institutes since early 2000 have developed ways of measuring happiness (Chao, 2017). The main issues addressed while measuring happiness are questions such as whose happiness we should consider, the different types of Happiness, and how we can measure happiness in communities.

It is believed that when people are happy, they become more effective. Research conducted by Oishi et al., (2007) found that moderately happy individuals are most successful in terms of income and education; further study conducted by Singh & Ahmed (2020) supported this, showing that happy people are better decision-makers, more likely to find employment and receive higher income.

Suppose an impoverished and dysfunctional city such as Bogotá, Columbia, can be reconfigured to produce more joy. In that case, it is possible to apply happy city principles to the problems of the wealthiest places (Parham, 2014).

3.1.2 The importance of assessing happiness in urban areas and critical issues

Since the rise of the importance of people's happiness in a community, scholars and researchers have always wanted to assess happiness in the built environment; the importance of measuring Happiness in urban areas is underscored by the need to understand the factors contributing to the QoL and healthy being (Ballas, 2013).

The essential question while assessing happiness is, what does happiness have to do with urban affairs, cities, and urban planning? Regarding this question, it is necessary to have

an exploratory study to find key city attributes and factors connected to happiness on the individual level (Oishi et al., 2007).

Emerging evidence found that happier people are healthier in research conducted by Ballas & Tranmer (2008). explored the relationship between green spaces and measures of health in Scotland and found.

Research has consistently shown the importance of assessing Happiness with a focus on **Objective and subjective indicators**. Housing, neighborhood, access to public transportation, and cultural amenities have significantly affected life satisfaction (Leyden et al., 2011).

In addition to the usual correlates, such as income and health, city residents appear to be happier when they have access to the people and the places of their cities (Ballas, 2013). According to a study published by the United Nations, 68% of the world's population will live in urban areas by 2050 (United Nations, 2019). Given that most of the world's population now lives in cities, it is fair to notice that the growing studies on measuring happiness in urban areas focus more on analyzing objective QOL and combining the results with subjective approaches to measuring well-being (Ballas, 2013).

There is a need for distinctions among all these studies, including the studies of happiness, which analyze **subjective measures via social survey questions** such as "Are you happy right now?" Alternatively, "how happy are you with your life?"

Meanwhile, the QoL and well-being tend to analyze more objective factors such as the quality and the number of natural and human-created amenities (Climate, physical beauty, recreation, entertainment, education, health services, equality) (Ballas, 2013).

Research by Marans-Stimson, (2011)highlighted vital issues and debates surrounding the measurement, analysis, and theories that result in the QoL and Happiness in cities and regions; the key issues include:

1- The distinction between objective and subjective measures,
2- The emergence of the new science of happiness
3- The impact of contextual factors such as social and spatial inequalities
4- The need for an interdisciplinary research approach.

3.1.3 Assessing the significance of “happy cities” in promoting sustainable urban development

Research by Cloutier et al., (2014) examined the nonparametric ranked-based correlation to prove a positive association between sustainable urban development (SUD) and happiness. The study emphasizes the importance of considering happiness when measuring urban sustainability.

Research by Cloutier et al., (2014) used four indicators of SUD. It examined the association with happiness at the country and city levels. All the results showed a positive relationship between SUD metrics (liveability. walkability, and green spaces) and self-reported happiness. Additionally, results suggested that those cities ranking high in the sustainability Index may provide more significant opportunities for happiness among the residents; happy residents are more invested in their communities and more likely to get involved in activities linked to SUD. To provide opportunities for residents to achieve meaningful and long-term happiness, how a future of SUD might also contribute to happiness or vice versa should be considered (Cloutier et al., 2014).

Happiness drives humans in much of what they do and strives for (DeGraaf et al., 2005).

Promoting a happy city, which is a city that has various indicators that mainly promote human well-being, can also encourage SUD.

3.2 Urban Greenery: A Cornerstone of Happy Cities

3.2.1 The recognition of UGS as vital components

Evidence from developed countries shows that the presence of and access to quality urban green space (UGS) significantly affects one’s sense of happiness; research conducted by Cheng, (2020) on urban greenery found that there have been growing studies on the determinants of happiness in recent years in which environmental indicators such as urban greenery has proven its importance. Cheng's study on Urban China found that the relationship between UGS and happiness is complex; the study used panel data from Chinese Family Panel Studies and the Chinese National Bureau of Statistics to analyze the effect of UGS on urban residents' happiness level, the results out cased that per capita greenness had a negative impact on residents happiness in China but this effect turned into a positive one as resident's income level increased. The study also shows that the

relationship between UGS and happiness varies among people of different education levels and from other areas.

As one element of the environment, green space has been found to relate to human well-being and how it affects people's happiness. Many questions arise in this regard, such as whether people are happier and healthier when they move to a greener environment or whether happier and healthier people choose more verdant areas to live in (White et al., 2013).

Research conducted by Kwon et al., (2021) measured the UGS from high-resolution satellite imagery of 90 global cities in 60 developed countries; they found that the amount of UGS and GDP correlate with a nation's happiness level. UGS and GDP are individually associated with happiness; therefore, GDP is assumed to moderate this relationship. However, Urban greenery should promote social cohesion and be accessible to all, regardless of wealth. It cannot be considered that GDP is always linearly connected to happiness through greenery.

One of the first studies by Vries et al., (2003) tested the hypothesis of whether people living in greener areas are healthier than those living in less green areas. This study shows, at least in the Dutch situation, since no other data were analyzed, that this latter relationship might be explained by the difference in the availability of greenspaces at the different levels of urbanity; it proves that self-reported happiness and well-being of people in greener environments are significantly high.

Other studies from other regions were conducted by Herzele & de Vries, (2012) data in this study were collected by surveying residents in two neighborhoods in Belgium that only differ in green space provision but have the same demographics, socio-economics, housing conditions, and other characteristics; the results showed that greater self-reported happiness in the greener neighborhood, people's satisfaction with their neighborhood differed significantly, those living in the greener neighborhoods are more satisfied therefore happier, perception of neighborhood greenness was found to be the most critical predictor of Neighbourhood satisfaction**,** this study also inclines towards the idea of visual proximity of UGS and how it is experienced and perceived from the street and at home.

3.2.2 Historical and cultural connections between cities and nature

Melosi, (2010) argues that the traditional ways that view cities are another part separate from nature; he confirms that we should not exclude cities from the understanding of the environment, the material world, and human interaction with that world. Cities are the core of human interaction and staging areas for politics, culture, and much more; therefore:

Humans are natural.

Humans build cities.

Cities are natural.

Another study by Loughran, (2017) contributes a critical perspective to this topic, arguing that the construction of city and nature is intertwined with racial dynamics. City and Nature share a binary relationship. Many of the problems that cities face today, such as the acceleration of urbanization or changes in the global political economy, could be the driving factors of the decline of the city-wilderness binary relationship.

3.2.3 Potential of urban greening to enhance urban liveability and happiness.

Research consistently shows that urban greening can enhance Urban Liveability and people's sense of Happiness. White et al. (2013) assume that fast urbanization is the core issue for mental health and well-being through cross-sectional evidence that suggests that living closer to UGS, such as parks, is highly linked to mental distress. White mentions that detachment from the natural environments people evolved in alongside urbanization could be the two main issues affecting Livability; the research used secondary panel data to examine whether individuals would be happier, showing higher well-being and lower mental distress, when living in areas with more green space than in areas with less green space. They combined data from two large datasets and used a fixed-effects approach (Kumar & Director, n.d.). A happy city is a city that induces positive feelings and encourages model differences within people rather than between people.

Research by Krekel et al., (2015) explored how urban land use affects residential well-being in major German cities. The main results show that having access to green urban spaces like parks and gardens is linked to higher life satisfaction. In comparison, access to abandoned areas, such as waste, is linked to lower life satisfaction. The results of this study show that in 32 major German cities with 100k inhabitants, access to green urban

areas is essential for residential well-being. On the other hand, access to abandoned areas matters more (Ma et al., 2019). In contrast, access to water and forests does not matter much; Krekel determines that these relationships to green areas and left are concave, affecting primarily older adults.

Another research study by Braubach et al., (2017) investigated the causal relationship leading to public health benefits of UGS, including psychological relaxation and stress reduction, social cohesion and psychological attachment to the housing area, and immune system benefits. The research also proves that UGS can supply Ecosystems and help reduce noise, air pollution, and excessive heat (Kabisc et al., n.d.); in general, the health benefits of UGS outweigh it is potentially detrimental effects; these findings underscore the importance of policies and interventions to protect and promote UGS for the wellbeing of residents.

White et al., (2013) emphasize that policymakers must study how significant green space changes are relative to other changes that affect people's well-being.

3.3 Conceptual Frameworks: Unravelling the Nuances of "Happy Cities" and "Green Cities."

3.3.1 Identifying key dimensions and indicators contributing to urban happiness

Since 70% of the population is estimated to be living in urban areas by 2050, based on the United Nations Report of 2014, many scholars understand that cities are essential spaces for people's activities in the field of happiness, well-being, and welfare. Cities are constantly developing, which also leads to another concern: the development of cities creates challenges for people's happiness and well-being (Glaeser, 2012).

Many studies showed that the quality of the city and urban spaces is the critical factor for happiness (Mirzaei & Zangiabadi, 2021); it can be assumed that there is a mutual relation between happiness and the quality of urban spaces; therefore, if one of them becomes strengthened then the other one will be improved, at last happiness whether it is based on objective or subjective concept can be identified as an essential quality in urban spaces based on the global happiness report 2018 (-aniaostudio-, n.d.).

Research conducted by Mirzaei & Zangiabadi, (2021) utilized mixed research methods with a fundamental purpose and a descriptive-analytical approach; qualitative data were

gathered through the documentary method and open questionnaires; the main findings of the study indicated that among the five dimensions of happy city planning, economic and managerial-administrative dimensions were deemed significant. Welfare and health were identified as the most critical indicators, and efficient management, social justice, mental-moral health, citizenship rights, income level, quality of life, urban security rate, and proper job were considered the most critical variables.

Meanwhile, Musa et al., (2020) underscore the importance and need for a multidisciplinary framework focusing on the social dimension of urban happiness. Another study on China's fast urbanization shows that psychological, physical, and social factors contribute to urban happiness, community engagement, and green space (Peng et al., 2021).

Another research by Leyden et al., (2011) identifies that cities that provide easy access to public transport and cultural and leisure amenities promote urban happiness. Also, affordable towns that serve as good places to rise automatically have happier residents.

These studies collectively suggest that a holistic approach of economic, social, psychological, and physical dimensions is essential in understanding and promoting urban happiness.

3.4 Exploring the role of objective and subjective measures in assessing urban happiness

3.4.1 Defining the concept of “Green Cities“ and its principles and indicators

The planet faces significant ecological challenges, from water conservation to biodiversity loss to climate change. There are now urban issues requesting green cities that are essential for human life; as more and more people live in cities, multiple activities and behaviors that the cities encourage will decide whether humans are making the planet less or more habitable (Breuste et al., 2015).

Cities that are classified as green enable the people who live and work in them to carry out their daily lives in an environmentally sound manner, so green cities try to change the landscape so that the activities of people are more sustainable, such as commuting and bicycling or feeding their families with urban agriculture (Barthel et al., 2015).

A green City is a city that is in balance with nature and is an ideal green city; all forms of nature are respected and well-kept for the benefit of city residents; the critical concept for green city development is urban nature, which is seen as an ideal provider of services. All urban spaces are host to urban nature, either wild or introduced(Breuste et al., 2015).

The term green city is often commonplace in politics and urban planning. However, each field has its meaning and accuracy of concept, and the overall concept in every definition is the same as the aim, which has been to make the city develop in balance with nature (Ritesh & Mohammed, 2021).

Table 1: Green City definitions (Credits: Pace, Churkina, & Rivera, 2016)

Author	Year	Term	Keywords
Roseland	1997	Eco-City, Sustainable Community	Multidimensionality – responsible Society
Kahn	2006	Green City	High environmental performance – Human well-being – Responsible society
UNEP	2011	Green City	Human Well-being – High environmental performance – Responsible society
ELCA	2011	Green City	Human Well-being – High environmental performance – Responsible society
Wikipedia	2013	Sustainable City – Eco-city	High environmental performance – Responsible society
Lewis	2015	Green City – Green development	Multidimensionality – High environmental performance – social actions – Responsible Policy

Green is the keyword, and it was initially linked to the green sides of our environment and nature itself (Breuste et al., 2015). Urban nature is the entirety of natural elements in urban areas; it comprises all living beings, biocoenosis, and their habitats in cities. Therefore, green cities are based on urban nature and are composed of blue and green

infrastructure; green infrastructure is described as a strategic planning network for promoting nature (Breuste et al., 2015).

In the Green City concept, urban nature contributes to QoL and is also considered a vital element for urban life (Breuste et al., 2015).

The green city has been reviewed using several definitions and literature sources; the terms eco-city and sustainable city are used synonymously with the green city. The table below shows the most essential definitions of the term Green city.

Therefore, the green city is a multidimensional economic, environmental, and social concept. A holistic definition would read as follows: A green city is a city that takes responsibility for political and societal action to achieve high environmental quality, contributing to human well-being (Pace et al., 2016).

In this Thesis, the meaning of green as a synonym for nature will be used; therefore, the green city is understood in this research as a metaphor for maintaining existing nature while making it usable for urban residents; it also refers to enhancing the urban nature and reestablish nature in the city for a better relationship between the built environment and nature.

3.4.2 Exploring the multifaceted dimensions of urban greening, including parks, gardens, and green infrastructure

Urban green infrastructure, such as parks, forests, street trees, green roofs, gardens, and cemeteries, are crucial in an urbanized world; they are leading carriers of ecosystem services and, most importantly, improve the QoL for urban residents (Breuste et al., 2015).

The concept of green infrastructure has been developed in the last two decades, and it can be defined as the connective matrices of green space that can be found in and around urban landscapes. Green urban infrastructure promotes human health and well-being and provides abiotic, biotic, and cultural functions to advance and contribute to urban sustainability (Breuste et al., 2015).

Urbanization contributes to the drastic form of land transformation by reducing the ecosystem's capacity for providing ecosystem services; therefore, the loss of urban green

infrastructure due to urbanization processes threatens urban residents regarding their physical and psychological well-being.

Green infrastructure plays a crucial role in supporting ecological and physical processes in urban environments with a focus on connectivity and multiscale approaches (Novotny & Brown, 2007).

However, the economic and social dimensions of urban greening are complex, which is why a multifaceted approach to urban greening is needed, one that considers its environmental, economic, and social dimensions; it must be practiced in a transdisciplinary manner for it to meet the needs of stakeholders, benefit from the support of decision-makers, engages scientists and engineers and challenge planners and designers (Novotny & Brown, 2007).

3.5 Urban Greenery and Physical Health

3.5.1 The associations between UGS and physical health outcomes

Nowadays, humans live in urban areas, and this number rose significantly between 1990 and 2000; due to this fast urbanization, scientific communities started exploring and assessing the urban environment's salutogenic effects.

On the other hand, much research showcases that urbanization has improved a population's health status due to better career and education opportunities and increased access to healthcare services. However, most fast-growing cities have noticed increased public health threats, such as a lack of physical activity and poor diet, pollution and traffic, and environmental degradation of natural areas; urbanity is also a risk for multiple chronic diseases and other causes of death and disability (Gianfredi et al., 2021).

In this context, the concept of UGS might have a positive health influence dating back to the early 1800s, when many health associations started advocating for publicly accessible UGS. They were described as the city's lungs; one of those associations is the Everyday Prevention Society (Kondo et al., 2018).

Research by Gianfredi et al., (2021) articulates the relationship linking UGS, emotional well-being, and health benefits involving individual characteristics and social and physical environment features.

The association between green spaces and health is linked with a focus on socio-economic and socio-demographic confounding factors; based on research by Kabisch, (2019), it can be concluded that there is a positive association between UGS and mental health with a particular relevance of socio-economic and socio-demographic factors, where people that relate to lower socio-economic status explain more negative health outcomes and vice-versa.

3.6 Green Spaces as Catalysts for Social Well-being: Fostering Community Cohesion and Social Capital

3.6.1 Examining the social benefits of UGS, including fostering community cohesion, social interaction, and a sense of belonging

UGS includes gardens, parks, greenways, and other areas with grass, trees, and shrubs. UGS allows people to be outside and interact with nature in ways that are not possible in other settings; the positive relationship between nature and health suggests that the quality and availability of UGS, such as gardens and forests, has an impact on social cohesion (Jennings & Bamkole, 2019).

Many studies have already explored the association between UGS and the social dimensions of health; the studies focused on exploring how UGS are core support for social interactions and how social cohesion can improve the quality of urban health. In other terms, social contact, social connections, social interactions, social support, and social ties could be included to describe the presence of social cohesion in the neighborhood context, and the lack of it could be described as the feeling of loneliness and lack of social support (Wan, Shen, & Choi, 2021).

A recent study in Western Australia discovered that the proximity and the quality of UGS, such as parks, were positively related to the sense of community. As a result, UGS activities and health-promoting behaviors promote and develop social cohesiveness and vice Versa (Jennings & Bamkole, 2019).

Research by Wan et al., (2021) concluded that three aspects of green spaces would directly impact social cohesion development: physical characteristics such as vegetation, distance, size, type of green spaces, layout, and structure significantly predict social cohesion. It is valid that the physical environment of greenspace influences social cohesion via an indirect pathway; therefore, the physical structures of green spaces are

the core factors that contribute to the development of social cohesion with a significant influence on vegetation.

Urban planners must work on interventions and configurations that enhance social cohesion and address public health issues due to urbanization. Therefore, green spaces should be included in economic, environmental, and social regeneration plans and accessible to all urban residents regardless of social status (Kazmierczak & James, n.d.).

3.7 Assessing Urban Greenness and Happiness: Unveiling the Link Through the Green City Index and Happy City Index

3.7.1 Happiness Index: A Global Benchmark for Measuring Urban Happiness and Well-being

The Happy City Index (HCI) is a comprehensive instrument that assesses happiness and well-being at a city level; it mainly helps decision-makers understand and evaluate the determinants of well-being, therefore establishing resources for improving the lives of residents (Happy City Index Report, 2016).

Happy City and the New Economics Foundation (NEF) developed the Happy City Index (HCI). In collaboration with local, national, and international experts, it was primarily designed to monitor city progress, which the Quality-of-Life Institute defines the city's success in providing the conditions that create sustainable well-being (Happy City Index Report, 2016).

The main goals of the index are to measure life satisfaction, the feeling of Happiness, and other happiness domains such as well-being, health and psychological well-being, and material well-being; each domain estimates different qualities (Cloutier et al., 2014).

Sustainable development is defined in the HCI framework as providing equal opportunities for present and future generations to thrive (Happy City Index Report, 2016).

The ranking of the cities in HCI was created based on thousands of indicators that relate directly to the QOL and the sense of Happiness of its residents. Therefore, the ranking is due to the actual well-being of residents ('Happy City Index | HAPPY CITY INDEX #2023', n.d.).

HCI ranking includes all those cities whose activity can be measured and verifiable data; what is essential to note is that the ranking does not assess the activities of the authorities of these cities but all those areas that directly affect the sense of happiness for residents (‘Happy City Index | HAPPY CITY INDEX #2023’, n.d.).

The HCI divided the areas defining urban activities directly impacting happiness into five regions: CITIZENS, GOVERNMENT, ENVIRONMENT, ECONOMY, and MOBILITY. People create the city, so involving them in matters related to urban decision-making processes and participation is essential. It is one of the foundations of well-functioning units within GOVERNANCE. An organism in which all its elements are consciously engaged in activities for the good of the whole can be considered healthy and develop in a way focused on happiness. A key component is an education policy that consciously prepares future generations to manage available resources responsibly for the whole benefit (‘Happy City Index | HAPPY CITY INDEX #2023’, n.d.).

City analysis involves examining its functioning in the pursuit of creating the happiest living environment, considering 24 distinct areas of activity. Each location holds unique significance, varying weight, and falls into one of five categories. The order is deliberate, as each area contributes uniquely to the overall outcome of the city as a place with content and happy residents (‘Happy City Index | HAPPY CITY INDEX #2023’, n.d.).

Table 2: Areas of activity of HCI (Credits: ‘Happy Cities | What we do’, n.d.*)*

AREA		**CATEGORY**
1	educational system	CITIZENS
2	social inclusion of residents	CITIZENS
3	Gross Domestic Product and Productivity	ECONOMY
4	involvement of residents in decision-making processes	GOVERNANCE
5	transparency in operation and openness of data	GOVERNANCE
6	accessibility of public e-services	GOVERNANCE
7	management of natural resources, including renewable energy sources	ENVIRONMENT

8	innovation and creativity of residents	CITIZENS
9	conscious strategies	GOVERNANCE
10	use of information and communication technologies in transport	MOBILITY
11	innovation and creativity of enterprises	ECONOMY
12	anti-pollution	ENVIRONMENT
13	waste, wastewater management, and recycling	ENVIRONMENT
14	accessibility and efficiency of public transport	MOBILITY
15	availability of green areas	ENVIRONMENT
16	access to culture, including libraries	CITIZENS
17	entrepreneurship	ECONOMY
18	safety of the transport system	MOBILITY
19	labor market flexibility and unemployment	ECONOMY
20	ICT area as a sphere of activity and its availability in enterprises	ECONOMY
21	protection of biodiversity	ENVIRONMENT
22	openness of transport data	MOBILITY
23	availability of multimodal transport	MOBILITY
24	internationalisation of enterprises	ECONOMY

Regarding more contemporary city-level happiness indices, several organizations like the United Nations Mercer and the Economist Intelligence Unit have developed indices that include happiness, well-being, and QoL. These indices differ in method and criteria, including health, education, and environmental quality (Musikanski et al., 2017).

3.8 Assessing the strengths and limitations of the Happy City Index in measuring Happiness in Cities

While the Happy City Index is classified as a tool for measuring urban happiness, it still has limitations; it primarily focuses on objective indicators such as income, housing, and education, neglecting the subjective aspects of happiness (Mirzaei & Zangiabadi, 2021).

Studies by Cloutier et al., (2014) show that two indices within a range of indices analyzed in the study significantly correlated with happiness: the green city index and the popular science. This is the first step to characterizing the link between sustainability and happiness. Therefore, a focus on sustainability should be considered while developing a tool to assess city happiness.

Both Cloutier and Mirzaei emphasized the need for a more holistic and comprehensive approach while assessing Happiness in cities and also the need to include socio-economic factors and environmental factors because nowadays, living environments in developing countries are not a happy environment for their residents, happiness is an essential need; adequate conditions in the cities can increase happiness. However, most studies did not consider cities as a chance to increase Happiness (Cloutier et al., 2014; Mirzaei & Zangiabadi, 2021).

3.8.1 Green Index: A Tool for Measuring and Comparing Urban Greening Efforts

3.8.2 Indicators to Evaluate Green Cities

When looking at already proposed indicators, a pivotal question is whether they respond correctly to the green city definition established in this thesis.
Multiple indicators were used to create a green city index by some European and global institutions, such as the European Green City Index, European Green City Award, Urban Ecosystem Europe, and a global indicator SDG 11 that could be used index or raking-wise.

Table 3: Methodological characteristics of green city tools (Credits: Pace et al., 2016*)*

				Indicators			
	Year	Author	Cities	Tot	Category	N Quan	N Qual
Urban Ecosystem Europe	2007	Ambientes Italia	Europe 32	25	It includes quality, Acoustic Environment, Water,	21	4

					Energy, waste, transportation, green areas, land use, building CO2, health, equity, education, and participation.		
European Green City Index	2009	Economist Intelligence Unit	Europe 30	30	CO2, Energy, Buildings, Transport, waste and land use, and Air quality.	17	13
European Green Capital Award	Since 2010	European Commission	Europe/ cities with more than 200,000 inhabitants	56	Climate change, Local transport, Green Urban Areas, Nature and Biodiversity, Air Quality, Quality of acoustic Environment, Waste, Water, Wastewater, Eco-Innovation, Energy, and environmental management.	52	3
SDG 11	2015 - 2030	United Nations	World	13	Building, Transport, Air quality, Waste, Green areas and land use, Education, Equity, Safety, Health, and Participation.	10	3

Due to the difference in criteria and methods, it is impossible to analyze the four indicators directly because some establish target values, some do not, and so on (Pace et al., 2016).

Combined, these tools encompass the key dimensions outlined in our predefined definition of a green city. However, for this research, the SDG11 and the European Green City Index are particularly helpful among all the listed tools in Table 02. This is because

they align with the criteria chosen for this thesis and have evaluated Prague within the context of green city assessments.

3.8.2.1 European Green City Index

The Green City Index is a project led by the Economist Intelligence Unit and sponsored by Siemens. It focuses on issues regarding urban environmental sustainability and provides a ground for cities to share best practices (European Green City Index, 2009).

It started in 2009 and initially covered over 120 locations across Europe, Asia, Latin America, North America, and Africa. The Green City indexes help cities learn from each other and reduce environmental performance (Pace et al., 2016).

The index aims to allow key stakeholder groups such as policymakers, infrastructure providers, and Citizens to compare their city performance against others overall and within each category (European Green City Index, 2009).

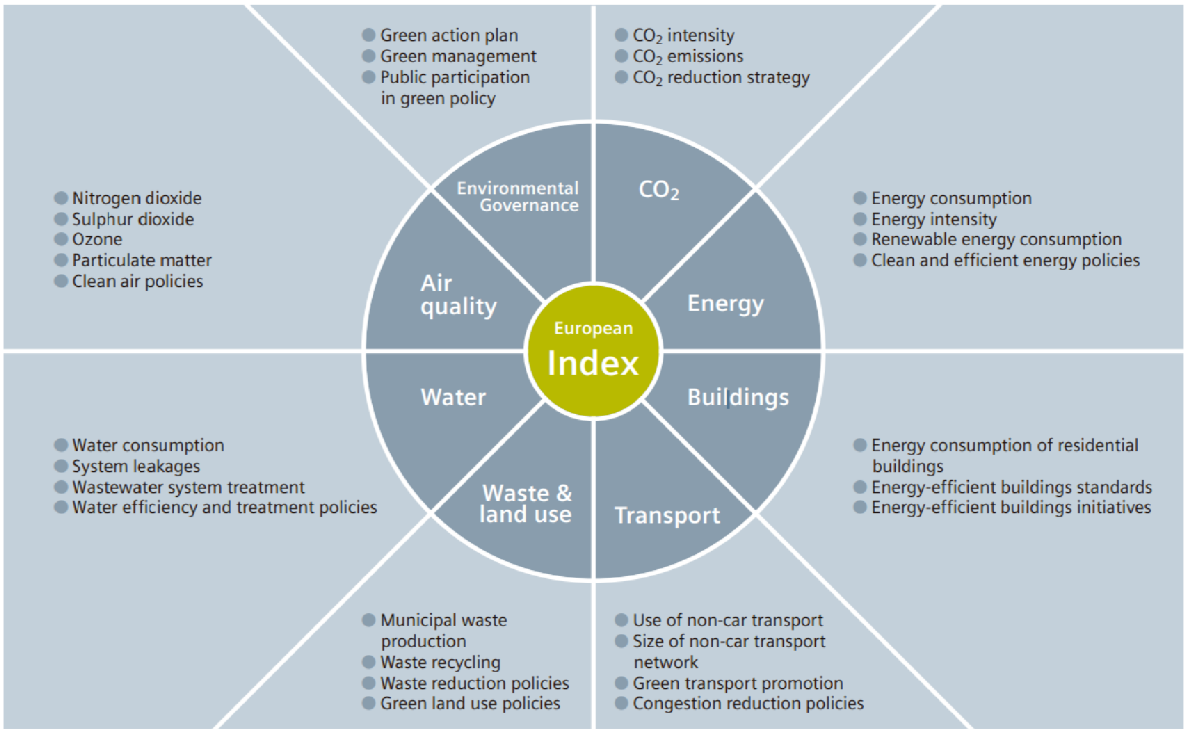

Figure 1: 16 quantitative and 14 qualitative indicators for the European Green City Index (Credits: European Green City Index, n.d.)

EIU collaborated with Siemens to develop the green city index; the first criterion for picking cities was the city's size and mainly capital, owing to population and economic hubs. The city's performance was assessed using 30 indicators divided into nine

categories, including CO2 emissions, energy buildings, land use, transportation, water and sanitation, waste management, air quality, and environmental governance (European Green City Index, 2009).

Each city earned an overall index ranking as well as individual category rankings. The index results are presented numerically for the EU, US, and Canadian indexes, and the cities where data quality and comparability levels do not allow detailed numerical ranking, five performance bands from well above average to well below average were used (European Green City Index, n.d.; Pace et al., 2016).

The index's most challenging part was collecting data in all regions. Many cities collect and update environmental data, but some other countries still need to. This issue emerges when comparing data from different nations, leading the EIU to make statistical estimates to fill gaps. The cities that were selected for the European Green City Index 2009:

Table 4: results from the index, including the overall results of each city (Credits: European Green City Index, n.d.)

Cities	**Overall Score**
Copenhagen	87,31
Stockholm	86,65
Oslo	83.98
Vienna	83,34
Amsterdam	83,03
Zurich	82,31
Helsinki	79,29
Berlin	78.01
Brussels	79,01
Paris	78,01
London	73,21
Madrid	71,56
Vilnius	67,08
Rome	62,77
Riga	62,58
Warsaw	59,57
Budapest	59,04
Lisbon	57,55

Ljubljana	57,25
Bratislava	56,39
Dublin	56,09
Athens	53,98
Tallinn	53,09
Prague	49,78
Istanbul	45,20
Zagreb	42,36
Belgrade	40,03
Bucharest	39,14
Sofia	36,85
Kiev	32,33

One notable fact is that 13 of the top 15 European index performances are in Western Europe. At the same time, 11 of the bottom 15 are part of the old Eastern bloc of former socialist countries; therefore, Eastern cities are still grappling with the consequences of decades of environmental neglect during the communist period. How Eastern Europe can mix growing wealth with ecological sustainability is a future topic of discussion (European Green City Index, 2009).

3.8.2.2 SDG 11: "Make cities and human settlements inclusive, safe, resilient, and sustainable."

Sustainable Development Goals (SDG) are a set of 17 goals of the United Nations that will lead global development efforts from 2016 to 2030; the goals comprise 169 sub-targets, such as zero hunger and poverty, as well as environmental targets, such as water resources and urba nization (Pace et al., 2016).

"*Make cities and human settlements inclusive, safe, resilient and sustainable*" is Goal 11 of the Sustainable Development Goals (SDGs), which focuses on making cities and human settlements inclusive, safe, resilient, and sustainable; emerged because of the global campaign for an Urban SDG starting from 2013. This campaign recognized the significance of urban areas due to their complex social, environmental, and economic impacts and their political importance (Pace et al., 2016).

The SDG has a broader framework of targets that can explain why two if it is indicators are shared with other goals (11.5.1. and 11.b.2); however, the SDG 11 indicators have been agreed upon at the highest level. This instrument is believed to play an essential role in urban sustainability and making cities greener based on our definition of a green city.

A study by Pace et al., (2016) concluded a review of the Green City measurements initiatives where it was assumed that the SDG is a powerful tool that has been agreed upon at the highest levels and how it plays a vital role in achieving urban sustainability and as it was discussed that happiness and urban sustainability correlate it seemed essential to include it in this thesis literature review. The study assigned an indicator category to each target of the SDG11 to compare them with other indices, such as the Green City Index later on in the study.

In conclusion, the 'Happy Cities' concept significantly changes basic urban planning assumptions, prioritizing city inhabitants' well-being, comfort, and safety. This literature review tried to define a happy city and investigated its multifaceted approach. It encompasses various dimensions, such as economic, environmental, and social aspects. Much research has highlighted the importance of integrating happiness-related concepts into urban planning; as cities continue to face challenges posed by rapid urbanization and ecological degradation, embracing the principles of happy cities and incorporating strategies to enhance urban greenery can pave the way for more sustainable and liveable urban futures.

3.9 Prague Analysis

Prague is the Czech Republic's capital, the country's biggest city, and the fifth largest in the European Union. Prague has a unique location on the banks of the river Vltava, being one of the main elements of Prague's landscape. Prague covers 49,613 hectares and has a population of 1,259,079. This makes 25 people per hectare; Prague's borders have remained unchanged since 1974.

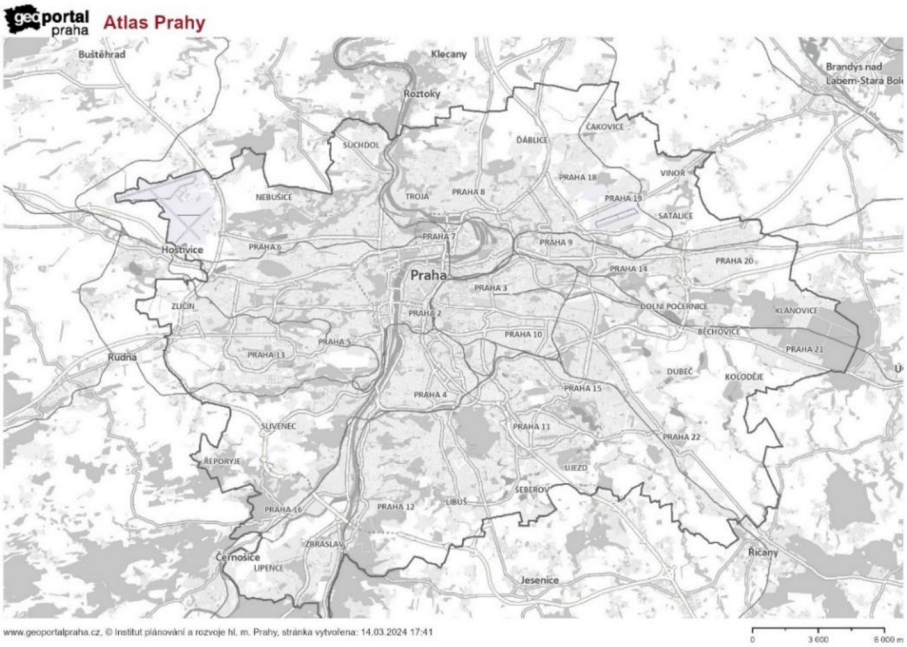

Figure 2: Map of Prague (Credits: Geoportal Praha)

3.9.1 Land use

Land utilized for housing, including courtyards and gardens, occupies 12% of Prague's total surface. Public facilities and amenities account for 5.5% of the total area; a notable proportion is dedicated to manufacturing. 1/10 of the area of the capital is used for a network of streets and roads, 26% of Prague is open countryside, and arable agricultural land accounts for nearly one-quarter of the city area (24%). Forests occupy 10.3% of Prague's surface area, and 3% of the city is unused or devastated land (Hynková et al., n.d.).

3.9.2 Sites of natural value

Many natural sites protected under international law can be found in Prague. Sites of natural value include individual tree stands and extensive forested areas. Prague is home

to 12 Natura 2000 sites of European importance, 27 registered landscape features of importance, and 12 natural parks (Hynková et al., n.d.).

3.9.3 Prague Urban Green Development between 1901 - Now

UGS is considered an integral part of the city structure, providing multiple services to the people and wildlife living in urban areas. Urbanization has had many negative impacts, environmentally speaking; moving from the countryside is a problem that has long existed since the 19th century. As many people live in urban areas, the protection of UGS and restoration have become important. Previously, I have discussed the benefits of UGS, such as its ability to act as urban lungs, absorb pollutants, and release oxygen.

In this section, we will explain how Prague Urban's green space developed throughout a time frame from 1901 to 2010. The development of urban greenery in Prague fluctuated over the 20th century, with periods of growth and decline. The city's expansion and population growth influenced the area and distribution of public green spaces. The research highlighted the importance of monitoring and maintaining urban greenery for city residents and the environment (Hladíková & Jebavý, 2020).

Early 20th Century (1901-1920): The city saw the formation of public parks and recreational forests outside the city area. Also, the percentage of public greenery decreased as the city expanded.

Interwar Period (1921-1940): The area of public parks increased, with a rise in public greenery covering 5.1% of the city area, and a green belt was established around Prague.

Post-World War II (1941-1960): Due to forced German occupation and post-war restrictions, the creation of new parks and maintenance of greenery were limited. The 1960s saw the destruction or reduction of many public parks due to urban development projects.

1970s and Beyond (1971-2010): The construction of housing estates continued, leading to the spread of housing estate green spaces. The 1970s marked a turning point with the return of city parks to public areas.

Table 5: Monitored factors of public greenery during the 20th century (Credits: Hladíková & Jebavý, 2020)

	1900	1930	1950	1970	1990	2000

Total area (ha)	144.8	873.3	2179.3	6321.2	8427.8	9267
Percentage (%)	6.9	5.1	12.7	12.7	15.5	18.7
M2 per inhabitant	2.6	9.2	20.6	55.5	63.4	78

3.9.4 Why is Prague a green city?

Natural areas in cities are an essential element of cities' well-functioning; due to fast urbanization and population growth, greenery should be protected as its amount increases in cities (Zachariasz., 2023).

Studies on the quality and quantity of greenery in European cities, among them Prague, have been conducted for years; we can trace back to the European Green City Index 2009, which resulted in various global and regional rankings about the world's greenest cities. Other Data is provided by the Husqvarna Urban Green Space Index (HUGSI), generated from satellite imagery and the percentage share of green space in metropolitan areas, according to which green regions account for 57% of their surface area according to these estimates, in Prague approximately 53% of the city surface is green space, trees occupy 28%, and Grass covers 25% of the area, Prague ranked 13th in being one of the greener cities in Europe; the city has an area of 323.54 sqr km (Zachariasz et al., 2023).

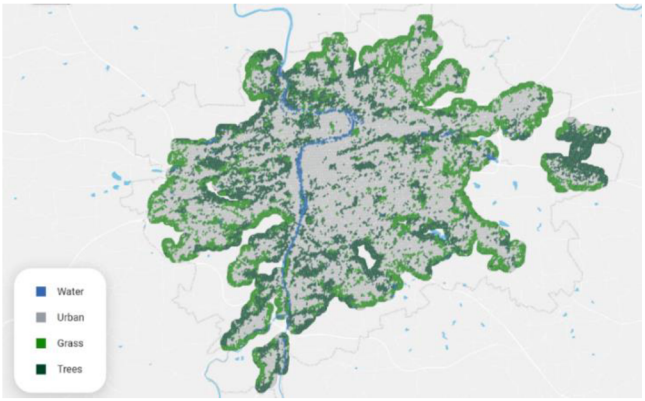

Figure 3: Summary map of Prague (Credits: 'How green is Prague? Find out at HUGSI.green', n.d.)

Table 6: Overall green aspects of Prague (Credits: 'How green is Prague? Find out at HUGSI.green', n.d.)

Criteria	
Green score	223.22
Percentage of urban green space	53%
Average health of urban vegetation	0.70
Distribution of urban green space	51%
Urban green space per capita	136.0 m2
Percentage of urban area covered trees.	28%
Percentage of urban area covered by grass	25%

4. Methodology

4.1 Methodology Introduction

A survey questionnaire was selected as the adequate method for investigating the research questions the author is exploring; this type of survey is highly used and effective in similar studies on subjective well-being, QOL, and Measuring Happiness.

The survey was developed through rounds: round 1 – survey development and preparation for the first draft; Round 2 – questions were divided by domains based on the happiness framework; Round 3 – Survey Review and modification; Round 4 – Final approval; and Round 5 - Preparation for distribution by Microsoft forms and printouts. A detailed structure of the survey will be provided later in this Chapter.

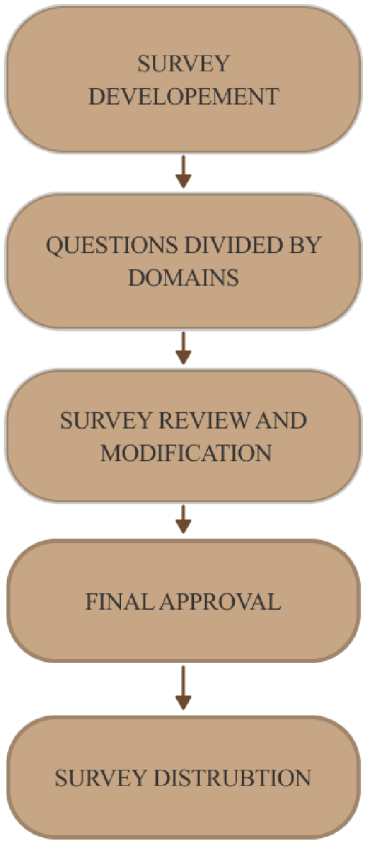

Figure 4: Survey development steps (Credits: Author)

4.2 Data collection

Surveys were disseminated online Via social media, mainly Instagram and Facebook groups for Prague residents and LinkedIn. The targeted group of people was Prague residents, but the survey was open to people from another country of residence to have enough data for a comparative study between Prague and other locations in the Future; the survey was also emailed to the faculty of environmental sciences staff, Teachers, and Students. Data were gathered from November 2023 to February 2024.

The survey was closed by the 1st of February 2024, with 191 respondents from different countries of residence completing the study.

Table 5: Respondent's demographic (Credits: Author)

Country	Frequency
Algeria	26
Belgium	1
Bosna i Hercegovina	1
Canada	1
Czech Republic	117
France	13
Germany	3
Italy	2
Kosovo	1
Latvia	1
Mexico	2
Morocco	3
Pakistan	2
Philippines	1
Poland	1
Russia	2
Slovakia	2
Spain	1
Turkey	1
UK	5
Ukraine	2
United States	3

Grand Total	**191**

4.3 Survey structure

To assess residents' happiness across dimensions and its correlation with social interactions, specifically focusing on the Urban green environment, we created the 'Mapping Happiness Framework' as shown in Figure 6.

The survey questions were based on existing data from the Happy City Index, World Happiness Report, Cities and Happiness, and the Gallup World Poll (an annual survey that started in 2005 and is conducted in more than 160 countries covering 99 percent of the world's population), the questions were modified and adjusted to fit the purpose of the research's aim.

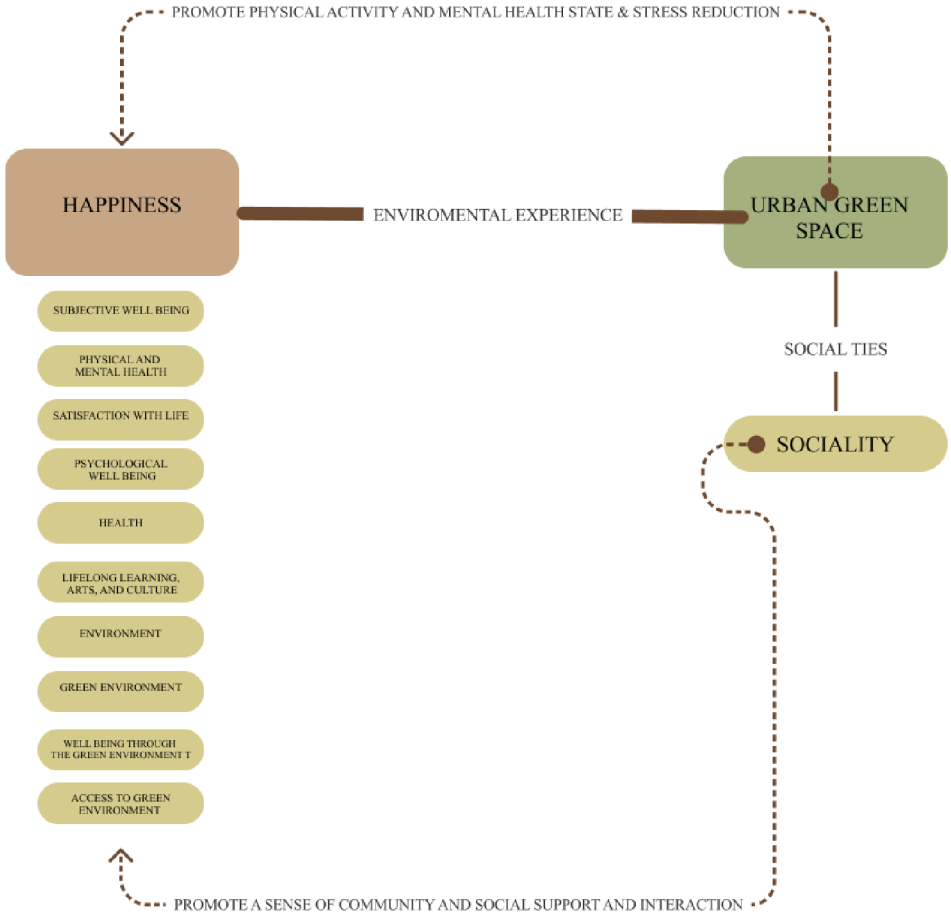

Figure 5: Mapping happiness framework analysis (Credits: Author)

The Mapping Happiness analysis framework initially examines the relationship between the variables, green urban environment, sociality, and Happiness (which we also refer to

as well-being in this thesis). In this case, sociality plays a joint role, and the Urban green environment is associated with the sociality of residents by providing a physical meeting environment and social opportunities among neighbors and residents of the same area. The survey measures life satisfaction and other happiness domains, psychological well-being, health, community, art and culture, and environment(Musikanski et al., 2017).

The survey questionnaire structure was based on the Mapping Happiness analysis framework. The questionnaire comprised several domains:

1- General information about the survey respondent
2- Satisfaction with life
3- Psychological well-being.
4- Health
5- Lifelong learning, Arts and Culture
6- Environment
7- Green Environment – cognition
8- Happiness
9- Sociality
10- Life Satisfaction Scale

The survey questionnaire comprised 60 questions based on the 10 division bands above.

4.3.1 Questions in the Mapping Happiness Survey

4.3.1.1 Domain 1: Satisfaction with Life

The First domain has four questions, the same as those used in the Happy City Index questionnaire and used by the United Kingdom government for measuring well-being.

Questions:

The four questions are: “Overall, how satisfied are you with your life nowadays?” “Overall, to what extent do you feel the things you do are worthwhile?” “Overall, how happy did you feel yesterday?” “Overall, how anxious did you feel yesterday?”

The question source is: OECD Guidelines on Measuring Subjective Well-being (2013)

Answers:

For questions 1, 2, and 3, the answer choices are on a 5-point scale rated from 5 (*Very satisfied*) to 1 (*very dissatisfied*). The answer to the fourth question is on a 5-point scale from 5 (*I did not feel anxious*), 3 (*Slightly anxious*), and 1 *(extremely anxious).* The source of the questions is the UK Office for National Statistics Personal Well-being (2015).

4.3.1.2 Domain 2: Psychological well-being

There are five questions in domain 3; they measure mental well-being.

Questions:

The five questions in Domain 3 ask to what extent participants agree with the following statements: "I lead a purposeful and meaningful life," "I am engaged and interested in my daily activities," "I am optimistic about my future," "Most days I feel a sense of accomplishment from what I do," and "In general, I feel positive about myself."

The question source is: OECD Guidelines on Measuring Subjective Well-being (2013)

Answers:

The answer choices in this domain are on a 5-point scale rated 5 (*strongly agree*), 4 (agree), 3 (neither agree nor disagree), 2 (disagree), and 1 (*strongly disagree*). The first two questions are based on Diener and Biswas' psychological well-being scale (Diener et al., 2009b). The source for the last three questions is the Happy City Index (Musikanski et al., 2017).

4.3.1.3 Domain 3: Health

Four questions in Domain 4 measure physical health.

Questions:

The first two questions are adapted from the World Health Organization, which initially are: "How satisfied are you with your health?" G4 (G2.3), "Do you have enough energy for everyday life?" F2.1 (F2.1.1), the last two questions ask the participants of the survey to rate their level of satisfaction; the first question is also adapted from the World Health Organization in which the original question is: "How satisfied are you with your ability

to perform your daily living activities?" F10.3 (F12.2.3) ('Health word Organization 2002', n.d.) The fourth question is "During the last week, how many hours did you spend on each of the following activities? Physical exercise such as swimming, jogging, aerobics, football, tennis, gym, workout, etc.".

Answers:

The First question answers choices are 5 (*Excellent*), 4 (*Very good*), 3 (*Good*), 2 (*Fair*), and 1(*Poor*); the second and the third questions' answers are based on a 5-point scale rated 5 (*Always*), 4 (*Often*), 3 (*Sometimes*), 2 (*Rarely*), 1 (*Never*) and 5 (*Very satisfied*), 4 (*Satisfied*), 3 *(Neither satisfied nor dissatisfied*), 2 (*Dissatisfied*), 1 (*Very Dissatisfied*), the fourth question is based on 5-point rated scale 5 *(More than two h*), 3 (*Less than two h*), 1 (*Not applicable*).

4.3.1.4 Domain 4: Lifelong Learning, Arts, and Culture

There are four questions in the lifelong learning arts and culture domain, mainly about access to Lifelong learning, culture, diversity, and inclusion in the participant environment.

Questions:

The first three questions investigate how participants. Are they satisfied in their neighborhood or community and have access to cultural and recreational activities? "Your access to sports and recreational activities?" "Your access to artistic and cultural activities? "and "Your access to activities to develop skills through informal education?".

The fourth question in this domain is, "How often do you feel uncomfortable or out of place in your neighborhood because of your ethnicity, culture, race, skin color, language, accent, gender, sexual orientation, or religion?" this question was adopted from different researchers such as Tran and the Greater Victoria Well-Being survey.

The question source is: OECD Guidelines on Measuring Subjective Well-being (2013)

Answers:

The answer choices to the first three questions are 5 (*Very satisfied*), 4 (*Satisfied*), 3 *(Neither satisfied nor dissatisfied*), 2 (*Dissatisfied*), and 1 (*Very Dissatisfied*). The answer

choices for the fourth question are 5 (*Always*), 4 (*Often*), 3 (*Sometimes*), 2 (*Rarely*), 1 (*Never*).

4.3.1.5 Domain 5: Environment

There are four questions in Domain 5, which mainly investigate and measure access to nature and urban green spaces, satisfaction with air quality, and the sense of a healthy or toxic environment.

Questions:

The first question is "How healthy is your physical environment?" the second and the third questions are "Please rate your level of satisfaction: How satisfied are you with the efforts made to preserve the natural environment in your neighborhood? How satisfied are you with the opportunities you must enjoy nature?" The source of these questions is the Happy City Index questionnaire survey, similar to the 2010 Greater Victoria Well-being Survey and the Gallup World Poll 2008 (Musikanski et al., 2017).

The fourth question is, "How satisfied are you with the air quality in your environment?" The source of the question is the International Well-being Group's 2006 personal well-being index.

Answers:

The first question answer choices are a 5-point scale rated 5 (*Very healthy*), 4 (*Healthy*), 3 (Neither healthy nor unhealthy) 2 (Unhealthy), 1 (Very unhealthy), The answer for the second, third, and fourth questions is a 5-point scale rated 5 (*Very satisfied*), 4 (*Satisfied*), 3 *(Neither satisfied nor dissatisfied*), 2 (*Dissatisfied*), and 1 (*Very Dissatisfied*).

4.3.1.6 Domain 6: Green environment

Five questions in this domain investigate how important the green environment is to the participants in their housing area or proximity.

Questions:

The first question is: "Do you think the green environment plays an important role in your overall happiness with your life?" The question is adapted from the Happiness Index

of Residents, which focuses on the green environment (Han & Kim, 2019a). The second question is, “Do you think green environmental diversity is important in the housing area?” The question investigates opinions on whether having a variety of green environments (such as different types of plants, trees, and landscaping) is essential in residential areas; the third question is: “By which sense do you prefer to experience the green environment? (Examples: visual, physical, smell, cognitive)” the fourth question is: “Do you think the green environment is important for your physical health?” and the last question is: Do you think the green environment is essential for your mental health? The question is adapted from the BMC Public Health study in Southern Sweden (Han & Kim, 2019).

Answers:

The answer choices for all questions except the third one is a 5-point scale rated 5 (*yes*), 3 (*Not sure*), 1 (*No*); the first and second question answers are 1 (*Visual*), 2 (*Physical*), 3 (*Smell*), 4 *(cognitive*), 5 (*All that apply*).

4.3.1.7 Domain 7: Happiness

There are fourteen questions in this domain of Happiness. They evaluate participants' happiness from a subjective dimensional perspective regarding well-being, life satisfaction, and health.

Questions:

The questions' domain is divided into three experiential factors: subjective well-being, health state, and life satisfaction.

The first factor, subjective well-being, has six questions:

1- Do you think you are experiencing well-being in your housing area?
2- Are you experiencing well-being through the comfort of the green environment?
3- Do you feel happiness in your housing area?
4- Can you easily access the green environment in your housing area?
5- What is the proximity of the nearest green space to your housing area?
6- Do you quickly feel the changes of season through the green environment?

The second-factor subdomain, Health State, has five questions:

1- How often do you experience a green environment for an outdoor activity? (Examples: picnic, camping, sitting on a bench),
2- How do you typically use the nearby green space?
3- How often do you experience the green environment to release stress?
4- How often do you experience the green environment for regular physical activity based on the green environment? (Examples: jogging, riding a bike)
5- Does the current green environment in your housing area promote your regular physical activity? (Han & Kim, 2019)

The Third Factor, Subdomain, Life Satisfaction, has five questions:

1- Are you satisfied with the accessibility to the green environment in your housing area?
2- Are you satisfied with the diversity of the green environment in your housing area? (Examples: wild green nature, urban park, garden),
3- Are you satisfied with the quantity of green environment in your housing area?
4- Are you satisfied with the social opportunities provided in your housing area?
5- Are you satisfied with your housing area overall?

Questions source is: National Well-being team & for National Statistics (2012)

Answers:

Subjective well-being:

The answer choices for the first four questions are on a 5-point scale rated 5 (*Yes*), 3 (*Not sure*), 1 (*No*); the fifth question choices are a 5-point scale rated 5 (*within 1 km*), 4 (*1-2 km*), 3 (*2-5 km*), 2 (*5-10 km*), 1 (*More than 10 km*).

Health State:

The first question answer choices are a 5-point scale rated 5 (*Yes*), 3 (*Not sure*), 1 (*No*), and the second and fourth questions are 5-point scale rated 5 (*Daily*), 4 (*Weekly*), 3 (*Monthly*), 2 (*Seasonal)*, 1 (*never*).

The third question is an 8-point scale rated 8 (*Walking or jogging*), 7 (*picnicking or relaxing*), 6 (*Playing sports or exercising*), 5 (*socializing with friends or family*), 4

(*Reading or studying*), 3 (*Enjoying nature or birdwatching)*, 2 *(participating in organized events or activities*), 1 (*Other*).

Life Satisfaction:

The answer choices are rated on a 5-point scale: 5 (Yes), 3 (Not sure), and 1 (*No*).

4.3.1.8 Domain 8: Sociality

There are seven questions in this domain. The question investigates the concept of sociality in how participants interact with and derive social benefits from green spaces through 3 factors: social cohesion, social inclusion, and Neighborship.

Questions:

The first question is: Are you satisfied with your community life? The second question is: Does your housing area provide diverse cultural or social open events or programs? (Examples: park concert, flea market), the third question is: Do diverse communities or social events occur based on the green environment? The fourth and fifth questions deal with social inclusion and how the participants feel in their housing areas or neighborhoods. The questions are: Do you feel a sense of belonging in your housing area? Are you happy with your involvement in your housing community? The last two questions deal with the neighborhood factor. They are: Do you often communicate with people in your neighborhood? Do you often casually meet your neighbors through the green environment? (Examples: during outdoor activity or walking). (Han & Kim, 2019a)

Answers:

The answers to the questions are on a 5-point scale rated 5 (*Yes)*, 3 (*No*), and 2 (*Not sure*).

4.3.1.9 Domain 9: Life Satisfaction scale

This domain contains one question, adapted from the Happy City Index survey questions; the question, initially referred to as the Cantril-ladder, measures people's attitudes toward their life and its components in various respects (Musikanski et al., 2017).

Question:

The question is: On a scale from 1 to 10, where 10 is the best life and one is the worst, where do you feel you stand right now? The question is adapted from the Happy City

Index: Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you and the bottom represents the worst possible. If the top step is ten and the bottom step is 0, on which step of the ladder do you feel you stand at present? (Musikanski et al., 2017).

The questions source is: National Well-being team & for National Statistics (2012)

Answer:

The answer is on a 1 to 10 scale, where ten is best, and 1 is the lowest score.

4.4 Data Analysis:

The survey data was exported and structured into an Excel spreadsheet; the data was divided into domains, with each survey domain contained in its spreadsheet; this type of organization allows for more accessible data analysis. Depending on numerous parameters, we employed a variety of approaches to evaluate the data to investigate questions that this thesis sought to address.

1- Descriptive statistics: This method summarizes data using measurements such as mean, median, mode, and standard deviation. It aids comprehension of the sample's features but must also investigate correlations between variables.

2- Correlation analysis: Determines the strength and direction of a linear relationship between two variables. It does not necessarily imply causality, but it can aid in identifying potential correlations for future inquiry.

3- Regression analysis predicts a dependent variable's value based on the values of independent variables. It is more sophisticated than correlation and can account for the impact of additional variables.

5. Results

This chapter presents the survey results that are the most appropriate for answering the thesis questions that the author chose to investigate.

4.5 General information

The survey results provide an overview of the characteristics of the survey respondents. When looking at gender, most respondents identified themselves as either man (45.29%) or woman (52.13%), while a smaller portion identified as non-binary (0.85%) or preferred not to disclose (1.70%). Regarding age distribution, the 18-24 age group represented 31.62%, and the 25- 34 age group represented 43.58%; marital status varied; most respondents were single (58.97%) followed by married (29.05%). The rest of the Relationship statuses, like being in a relationship separated, divorced, or widowed, were less common in comparison. Additionally, there was diversity in backgrounds; respondents holding a bachelor's degree represented 30.76%, and master's degrees represented 26.49%. A small percentage reported not completing school (17.09%), and a minority chose not to disclose their qualifications (2.56%).

Most participants, around 81.19%, did not have children under 18. There was also A percentage, approximately 18.88%, who did have children in that age group.

Table 6: Respondents general information

Characteristic Criteria	Sub-Criteria	Frequency	Percentage (%)
Gender	Man	**61**	**45.29**
	Woman	**53**	**52.13**
	Non-binary	**1**	**0.85**
	I prefer not to say	**2**	**1.70**
Age	Under 18	**1**	**0.85**
	18-24	**37**	**31.62**
	25-34	**51**	**43.58**
	35-44	**16**	**13.67**
	45-54	**9**	**7.69**
	55-64	**0**	**0**
	65 and older	**3**	**2.56**

Marital status	Married	**34**	**29.05**
	In a relationship	**7**	**5.98**
	Separated	**1**	**0.85**
	Divorced	**5**	**4.27**
	Widowed	**1**	**0.85**
	Single	**69**	**58.97**
Education	Grammar school	**3**	**2.56**
	High school	**20**	**17.09**
	Some uni	**10**	**8.54**
	Bachelor's degree	**36**	**30.76**
	Master's degree	**31**	**26.49**
	PhD	**10**	**8.54**
	Law degree	**4**	**3.41**
	I prefer not to say	**3**	**2.56**
Children under 18	Yes	**22**	**18.88**
	No	**95**	**81.19**

4.6 Satisfaction with life

The survey results provided insights into respondents' satisfaction with life. A majority expressed overall satisfaction with life and found their activities meaningful, with proportions feeling somewhat satisfied (57.26%) and largely satisfied (43.58%), respectively. A notable portion of respondents showed dissatisfaction, and a minority expressed that the activities they do day to day held little worth. Happiness was prevalent, with a considerable portion reporting feeling somewhat happy (42.73%) or very happy (20.51%). However, a notable proportion of the respondents reported varying degrees of happiness. Anxiety levels had a similar pattern to happiness, with a significant portion feeling slightly anxious represented 50.42% of the survey respondents, whereas 40.17% of the respondents reported not feeling anxious at all.

Table 7: Respondents satisfaction with life

Criteria	Sub-Criteria	Frequency	Percentage (%)
Overall, how satisfied are you with your life nowadays?	Very dissatisfied	**2**	**1.70**
	Somewhat dissatisfied	**14**	**11.96**
	Neutral	**11**	**9.40**
	Somewhat satisfied	**67**	**57.26**
	Very satisfied	**23**	**19.65**
Overall, to what extent do you feel the things you do in your life are worthwhile?	Completely	**16**	**13.67**
	To a large extent	**51**	**43.58**
	Minimally	**8**	**6.83**
	To some extent	**41**	**35.04**
	To no extent	**1**	**0.85**
Overall, how happy did you feel yesterday?	Very happy	**24**	**20.51**
	Somewhat happy	**50**	**42.73**
	Neutral	**24**	**20.51**
	Somewhat unhappy	**16**	**13.67**
	Very unhappy	**3**	**2.56**
Overall, how anxious did you feel yesterday?	I did not feel anxious	**47**	**40.17**
	Slightly anxious	**59**	**50.42**
	Extremely anxious	**11**	**9.40**

4.7 Psychological Well-Being

The survey data provides insights into respondents' perceptions of their engagement in daily activities, optimism, and self-esteem overall. Most respondents reported positive outlooks with significant proportions either strongly agreeing or agreeing with the question about leading a meaningful life (66.65%), being engaged in daily activities (73.50%), feeling optimistic about the future (63.24%), experiencing a sense of accomplishment (49.56%), and feeling positive about themselves (75.20%). However, trends suggesting some level of reservation, the percentage of respondents expressing neutrality or disagreement across all criteria; for example, one-fourth of respondents

expressed neutrality regarding feelings of purposefulness 23.93%) and optimism about the future (25.64%), while a substantial proportion felt neutral about feeling positive about themselves (13.67%). Additionally, a smaller but significant portion disagreed with statements about feeling accomplished (11.11%) and positive self-perception (10.25%).

Table 8: Respondents psychological well-being

Criteria	Sub-Criteria	Frequency	Percentage (%)
I lead a purposeful and meaningful life	Strongly agree	**21**	**17.94**
	Agree	**57**	**48.71**
	Neutral	**28**	**23.93**
	Disagree	**10**	**8.54**
	Strongly disagree	**1**	**0.85**
I am engaged and interested in my daily activities	Strongly agree	**24**	**20.51**
	Agree	**62**	**52.99**
	Neutral	**23**	**20.51**
	Disagree	**6**	**5.12**
	Strongly disagree	**2**	**1.70**
I am optimistic about my future.	Strongly agree	**29**	**24.78**
	Agree	**45**	**38.46**
	Neutral	**30**	**25.64**
	Disagree	**11**	**9.40**
	Strongly disagree	**2**	**1.70**
Most days, I feel a sense of accomplishment from what I do	Strongly agree	**10**	**8.54**
	Agree	**48**	**41.02**
	Neutral	**43**	**36.75**
	Disagree	**13**	**11.11**
	Strongly disagree	**3**	**2.56**
In general, I feel positive about myself	Strongly agree	**18**	**15.38**
	Agree	**70**	**59.82**
	Neutral	**16**	**13.67**
	Disagree	**12**	**10.25**

	Strongly disagree	**1**	**0.85**

4.8 Health

The survey data shows how respondents felt about their energy levels, health, contentment with day-to-day activities, and exercise habits. Most respondents rated their health positively, with 43.58% rating it as very good, while 35.04% rated it as good. On the other hand, a minority of respondents assessed their health as poor (2.56%) or fair (11.11%).

Regarding energy levels, a notable portion reported having much energy frequently (41.02%), but there were also significant percentages reporting much energy sometimes (36.75%) or even rarely (16.23%). The majority expressed happiness with daily living activities, with 13.67% reporting extreme satisfaction and 45.29% expressing somewhat satisfaction. However, a significant percentage also expressed differing levels of unhappiness, with 12.82% of respondents reporting some dissatisfaction.

Furthermore, a significant proportion of respondents reported engaging in physical activity for over two hours (42.73%), while a sizable minority (46.15%) said they had spent less than two hours doing physical activity.

Table 9: Respondents health

Criteria	**Sub-Criteria**	**Frequency**	**Percentage (%)**
In general, I would say my health is	Excellent	**9**	**7.69**
	Very good	**51**	**43.58**
	Good	**41**	**35.04**
	Fair	**13**	**11.11**
	Poor	**3**	**2.56**
Please indicate how much of the time during the past week you had much energy.	Always	**5**	**4.27**
	Often	**48**	**41.02**
	Sometimes	**43**	**36.75**
	Rarely	**19**	**16.23**
	Never	**2**	**1.70**

How satisfied were you with your ability to perform your daily living activities?	Very satisfied	**16**	**13.67**
	Somewhat satisfied	**53**	**45.29**
	Neutral	**32**	**27.35**
	Somewhat dissatisfied	**15**	**12.82**
	Very dissatisfied	**1**	**0.85**
During the last week, how many hours did you spend on each of the following activities? Physical exercise includes swimming, jogging, cycling, aerobics, football, tennis, gym, and workouts.	More than two h	**50**	**42.73**
	Less than two h	**54**	**46.15**
	Not applicable	**13**	**11.11**

4.9 Lifelong Learning, Arts, and Culture

The data shows how respondents felt about their sense of neighborhood belonging and their ability to participate in various activities. When it came to their access to sports and recreational activities, 24.78% of respondents were very satisfied, and 44.44% were somewhat satisfied; when it came to their access to artistic and cultural activities, 24.78% of respondents were very satisfied, and 35.69% were somewhat satisfied. In terms of informal education, the majority of respondents expressed satisfaction across all categories. Significant percentages did, however, also express neutral or unsatisfied feelings in each category. Moreover, a considerable proportion of participants felt uneasy or disoriented in their community due to ethnicity, culture, gender, or race; 44.44% of them reported feeling uneasy either most of the time or always.

Table 10: Respondents' Lifelong, Arts, and Culture access (Questions credit: OECD Guidelines on Measuring Subjective Well-being)

Criteria	Sub-Criteria	Frequency	Percentage (%)
Your access to sports and recreational activities?	Very satisfied	**29**	**24.78**
	Somewhat satisfied	**55**	**47.00**
	Neutral	**22**	**18.80**
	Somewhat dissatisfied	**8**	**6.83**
	Very dissatisfied	**3**	**2.56**
Your access to artistic and cultural activities?	Very satisfied	**29**	**24.78**
	Somewhat satisfied	**52**	**44.44**
	Neutral	**24**	**20.51**
	Somewhat dissatisfied	**11**	**9.40**
	Very dissatisfied	**1**	**0.85**
Your access to activities to develop skills through informal education?	Very satisfied	**24**	**20.51**
	Somewhat satisfied	**42**	**35.89**
	Neutral	**33**	**28.20**
	Somewhat dissatisfied	**14**	**11.96**
	Very dissatisfied	**3**	**2.56**
How often do you feel uncomfortable or out of place in your neighborhood because of your ethnicity, culture, race, skin color, language, accent, gender, sexual orientation, or religion?	All of the time	**52**	**44.44**
	Most of the time	**35**	**29.91**
	Some of the time	**21**	**17.94**
	Rarely	**6**	**5.12**
	Never	**2**	**1.70**

4.10 Environment

The survey's data showcase the participants' perception of air quality, opportunities to enjoy the outdoors, environmental conservation efforts, and their housing area. Most respondents rated the physical environment, with 58.97% stating it was either very healthy or healthy. Notably, 4.26% of respondents reported it as unhealthy or highly unhealthy, and 23.93% were neutral and showed no engagement regarding their environment. There was a difference in opinions on local environmental protection activities; 13.67% expressed high pleasure, while 52.99% expressed moderate satisfaction. On the other hand, a substantial portion expressed some degree of dissatisfaction, with 9.40% expressing mild dissatisfaction and 4.27% indicating extreme dissatisfaction.

Most respondents (41.88% extremely satisfied and 42.73% somewhat satisfied) expressed happiness with their opportunity to experience nature. Still, a small portion reported extreme dissatisfaction (4.27%). Air quality evaluations showed mixed opinions, with 11.11% being slightly satisfied and 15.38% being very satisfied. Nonetheless, a significant percentage reported discontent, with 15.38% expressing extreme dissatisfaction and 45.29% expressing moderate dissatisfaction.

Table 11: Respondents' environment

Criteria	Sub-Criteria	Frequency	Percentage (%)
How healthy is your physical environment?	Very healthy	**15**	**11.96**
	Healthy	**69**	**58.97**
	Neutral	**28**	**23.93**
	Unhealthy	**4**	**3.41**
	Very unhealthy	**1**	**0.85**
Please rate your level of satisfaction: How satisfied are you with the efforts being made to preserve the natural environment in your neighborhood?	Very satisfied	**16**	**13.67**
	Somewhat satisfied	**62**	**52.99**
	Neutral	**22**	**18.80**
	Somewhat dissatisfied	**11**	**9.40**
	Very dissatisfied	**5**	**4.27**

How satisfied are you with the opportunities that you have to enjoy nature?	Very satisfied	**49**	**41.88**
	Somewhat satisfied	**50**	**42.73**
	Neutral	**11**	**9.40**
	Somewhat dissatisfied	**5**	**4.27**
	Very dissatisfied	**1**	**0.85**
How satisfied are you with the air quality in your environment?	Very satisfied	**18**	**15.38**
	Somewhat satisfied	**53**	**11.11**
	Neutral	**30**	**25.64**
	Somewhat dissatisfied	**13**	**45.29**
	Very dissatisfied	**2**	**15.38**

4.11 Green environment – cognition

The survey data shows respondents' perceptions about the importance of green spaces in different aspects of their lives. Most respondents think green space is vital to their lives (87.17%). Analogously, 94.87% of respondents believe that the diversity of green space is essential in their housing areas. When it comes to the most popular sense experiences in green spaces, respondents pick visual appreciation (21.36%), which is followed by physical involvement (7.69%) and smell (3.41%). Moreover, most (61.53%) said they preferred to experience green spaces through all senses. Additionally, a notable portion, 89.74%, reported a positive effect of green spaces on physical health, and an even more significant percentage, 94.87%, noted the importance of these spaces for mental health.

Table 12: Respondents green environment

Criteria	Sub-Criteria	Frequency	Percentage (%)
Do you think the green environment plays an important role in your overall happiness with your life?	Yes	**102**	**87.17**
	Not sure	**9**	**7.69**
	No	**5**	**4.27**

Do you think a diversity of green environment is important in the housing area?	Yes	**111**	**94.87**
	Not sure	**4**	**3.41**
	No	**1**	**0.85**
In which sense do you prefer to experience the green environment?	Visual	**25**	**21.36**
	Physical	**9**	**7.69**
	Smell	**4**	**3.41**
	Cognitive	**3**	**2.56**
	All that apply	**72**	**61.53**
Do you think the green environment is essential for your physical health?	Yes	**105**	**89.74**
	Not sure	**7**	**5.98**
	No	**4**	**3.41**
Do you think the green environment is essential for your mental health?	Yes	**111**	**94.87**
	Not sure	**4**	**3.41**
	No	**1**	**0.85**

4.12 Happiness

The results show respondents' sense of well-being and satisfaction with UGS in their housing areas. The majority of respondents, 74.35%, reported feeling satisfied with their housing area, with a notable proportion, 76.06%, expressing satisfaction with the UGS. On the other hand, 76.92% reported feeling satisfied in their current housing area; despite the perceived importance of UGS, just 9.40% of respondents reported difficulties accessing UGS. Regarding proximity to UGS, (81.19%) of responders had access within a 1 km radius. Furthermore, 88% of respondents reported that they quickly felt seasonal changes in the green environment in their housing area. However, an interesting insight to note is that regular physical activity was less common at UGS, accounting for only 10.25% of daily activities. Although many respondents were content with the

accessibility (83.76%) and diversity (62.39%) of green spaces, satisfaction with the quantity (64.10%) and social opportunities (46.15%) provided by UGS was more varied. Most respondents (79.48%) reported overall happiness with their housing area.

Table 13 Respondents' happiness

Criteria	Sub-Criteria	Frequency	Percentage (%)
Do you think you are experiencing well-being in your housing area?	Yes	**87**	**74.35**
	Not sure	**22**	**18.80**
	No	**7**	**5.98**
Are you experiencing well-being through the comfort provided by the green environment?	Yes	**89**	**76.06**
	Not sure	**19**	**16.23**
	No	**8**	**6.83**
Do you feel happiness in your housing area	Yes	**90**	**76.92**
	Not sure	**16**	**13.67**
	No	**10**	**8.54**
Can you easily access the green environment in your housing area?	Yes	**105**	**89.74**
	Not sure	**1**	**0.85**
	No	**11**	**9.40**
What is the proximity of the nearest green space to your housing area?	Within 1 km	**95**	**81.19**
	1-2 km	**16**	**13.67**
	2-5 km	**5**	**4.27**
	5-10 km	**1**	**0.85**
	More than 10 km	**0**	**0**
Do you easily feel the changes of season through the green environment?	Yes	**104**	**88**
	Not sure	**9**	**7.69**
	No	**3**	**2.56**
How often do you experience the green environment for an	Daily	**22**	**18.80**
	Weekly	**51**	**46.58**
	Monthly	**20**	**17.09**

outdoor activity? (examples: picnic, camping, sitting on the bench)	Seasonal Never	**16** **7**	**13.67** **5.98**
How often do you experience the green environment for regular physical activity based on the green environment? (examples: jogging, riding a bike)	Daily Weekly Monthly Seasonal Never	**12** **35** **18** **37** **14**	**10.25** **29.91** **15.38** **31.62** **11.96**
Does the current green environment in your housing area promote your regular physical activity?	Yes Not sure No	**55** **25** **36**	**47.00** **21.36** **30.76**
Are you satisfied with the accessibility to the green environment in your housing area?	Yes Not sure No	**98** **10** **8**	**83.76** **8.54** **6.83**
Are you satisfied with the diversity of the green environment in your housing area? (examples: wild green nature, urban park, garden)	Yes Not sure No	**73** **20** **23**	**62.39** **17.09** **19.65**
Are you satisfied with the quantity of green	Yes Not sure No	**75** **15** **26**	**64.10** **12.82** **22.22**

environment in your housing area?			
Are you satisfied with the social opportunities provided in your housing area?	Yes	**54**	**46.15**
	Not sure	**25**	**21.36**
	No	**37**	**31.62**
Are you satisfied with your housing area overall?	Yes	**93**	**79.48**
	Not sure	**12**	**10.25**
	No	**11**	**9.40**

4.13 Sociality

The result shows the perceptions and experiences of respondents about social interactions and community life in their housing area. A considerable portion reported satisfaction with their community life, representing 46.15%, and a significant portion reported dissatisfaction (24.78%) or extreme dissatisfaction (28.20%); most respondents (53.84%) said they could find varied cultural or social events in their housing areas. Reactions were more evenly split when asked if various communities or social activities are based on the UGS, with 27.35% confirming their existence, 36.75% expressing uncertainty, and 35.04% disputing their occurrence.

Furthermore, many respondents reported ambiguity (20.51%) or a lack of belonging (33.33%), even though many respondents reported having.
A sense of belonging in their housing areas (45.29%). On the other hand, opinions on living in communities varied, with 31.62% of respondents reporting happiness, 36.75% expressing uncertainty, and 30.76% expressing discontent. Additionally, there were differences in the frequency of conversation with neighbors; a notable percentage reported rare communication (21.36%) or occasional engagement (24.78%). Just 7.69% of respondents said they frequently met neighbors. Informal interactions with neighbors through UGS were rare and did not occur (30.76).

Table 14: Respondents sociality

Criteria	Sub-Criteria	Frequency	Percentage (%)
Are you satisfied with your community life?	Yes	**54**	**46.15**
	Not sure	**29**	**24.78**
	No	**33**	**28.20**
Does your housing area provide diverse cultural or social open events or programs? (Examples: park concert, flea market)	Yes	**63**	**53.84**
	Not sure	**19**	**16.23**
	No	**34**	**29.05**
Do diverse communities or social events occur based on the green environment?	Yes	**32**	**27.35**
	Not sure	**34**	**36.75**
	No	**41**	**35.04**
Do you feel a sense of belonging in your housing area?	Yes	**53**	**45.29**
	Not sure	**24**	**20.51**
	No	**39**	**33.33**
Are you happy with your involvement in your housing community?	Yes	**37**	**31.62**
	Not sure	**43**	**36.75**
	No	**36**	**30.76**
Do you often communicate with people in your neighborhood?	Very often	**11**	**9.40**
	Occasionally	**29**	**24.78**
	Rarely	**0**	**0**
	Very rarely	**25**	**21.36**
	Never	**19**	**16.23**
Do you often casually meet your neighbors through the green	Very often	**9**	**7.69**
	Occasionally	**18**	**15.38**
	Rarely	**26**	**22.22**

environment? (Examples: during outdoor activity or walking)	Very rarely	**27**	**23.07**
	Never	**36**	**30.76**

4.14 Data on Residential Subjective Well-being Based on Green Environments

To ensure the Happiness level of residents from different districts in Prague, happiness was initially categorized into three subdomains in the Mapping happiness survey: Well-being, health state, and life satisfaction. For this analysis, independent samples t-tests were used to investigate the statistical data we have gathered. The table shows significant values resulting in the first subdomain of happiness criteria: subjective well-being based on the green environment.

Despite the different levels of statistical significance investigated between other criteria related to a green environment, there is a notable finding that residents of Prague are experiencing well-being in their housing area. The t value of 2.95 ($p < 0.005$) for this criterion indicates strong evidence to suggest that residence perception of wellbeing is related to the housing area and, therefore, the green environment with a statistical t-value of 2.81 ($p < 0.005$) for this criterion shows a piece of solid evidence to suggest that residents' perceptions of ease of access to green spaces are significantly different from what would be expected by chance alone.

Table 17: Subjective Well-being Based on Green Environments (Questions credits: Han & Kim, 2019)

Criteria	**Mean**	***t-Value***	***p***
Do you think you are experiencing well-being in your housing area?	4.32	2.95	0.001
Are you experiencing well-being through the comfort provided by the green environment?	4.04	0.37	0.359
Do you feel happiness in your housing area?	4.16	1.36	0.071
Can you easily access the green environment in your housing area?	4.31	2.81	0.002

Do you easily feel the changes of season through the green environment?	4.54	8.00	5.98

**** p < 0.001, ** p < 0.01, and * p < 0.05.*

4.15 Data on Residential Health State Based on Green Environments

The results of the analysis of Happiness level through resident's health status were found to be significant; residents who frequently engage in outdoor activities in green environments report a high level of subjective well-being as evidenced by a t value of 3.15 ($p < 0.001$), Another result to consider is that using a green environment for stress release is also linked to a higher level of subjective well-being; this later is supported by a t-value of 2.67 ($p = 0.004$). Additionally, residents who believe that the green climate promotes regular activity demonstrate notably elevated levels of subjective well-being with a t-value of 3.32 ($p = 0.005$).

Table 18: Health State Based on Green Environments (Questions credits: Han & Kim, 2019)

Criteria	**Mean**	***t-Value***	***p***
How often do you experience a green environment in an outdoor activity?	4.33	3.15***	0.000
How often do you experience the green environment to release your stress?	4.2	2.67**	0.004
Does the current green environment in your housing area promote your regular physical activity?	4.27	3.32**	0.005

**** p < 0.001, ** p < 0.01, and * p < 0.05.*

4.16 Data on Residential Life Satisfaction Based on Green Environments

The analysis results reveal notable insights among Prague residents' life satisfaction based on the green environment; the respondents satisfied with the accessibility to green spaces report a higher level of life satisfaction (t-value of 2.83 ($p = 0.002$)). On the other

hand, residents satisfied with the number of green environments in their housing area reported significant life satisfaction with a t-value of 3.78 ($p < 0.001$); in contrast, overall housing area satisfaction positively impacts life satisfaction. Evidenced by a t-value of 2.67 ($p = 0.004$), social opportunities suggest a potential negative impact on life satisfaction, where residents show dissatisfaction with the social opportunities provided in their housing area.

Table 19: Life Satisfaction Based on Green Environments (Questions credits: Han & Kim, 2019)

Criteria	**Mean**	***t-Value***	***p***
Are you satisfied with the accessibility to the green environment in your housing area?	4.29	2.83**	0.002
Are you satisfied with the diversity of the green environment in your housing area? (examples: wild green nature, urban park, garden)	1.52	-38.53*	9.33
Are you satisfied with the quantity of green environment in your housing area?	4.38	3.78***	0.000
Are you satisfied with the social opportunities provided in your housing area?	3.05	-6.54*	2.68
Are you satisfied with your housing area overall?	4.27	2.67**	0.004

**** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$.*

In summary, the findings highlight the crucial role of green space in fostering happiness, well-being, and life satisfaction among Prague residents.

4.17 Data on Residential Sociality based on green environment

The results show significant findings across the criteria the author wants to investigate; residents show high satisfaction with community life, as indicated by a t-value of 3.45 and a p-value of 0.000. furthermore, housing areas are perceived to offer diverse cultural

and social events; this is supported by a t-value of 3.23 and a p-value of 0.000. However, there is a contrast in the perception of the social event facilitated by the green space suggestion, a notable inconsistency in community engagement through green space.

Table 20: Sociality based on Green Environment (Questions credits: Han & Kim, 2019)

Criteria	**Mean**	***t-Value***	***p***
Are you satisfied with your community life?	3.49	3.45***	0.000
Does your housing area provide diverse cultural or social open events or programs? (examples: park concert, flea market)	3.45	3.23***	0.000
Do diverse communities or social events occur based on the green environment?	2.36	-4.60*	3.72
Do you often casually meet your neighbors through the green environment? (examples: during outdoor activity or walking)	1,79	-45.55*	3.70

**** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$.*

6. Discussion

The present study fulfilled two goals. Firstly, it uncovered the role of perceived green space characteristics in residents' life satisfaction and happiness. Secondly, the research demonstrated that a green city can be paralleled with a happy city by exploring several factors that contribute to green cities and, eventually, happy cities.

6.1 WWhat is the relationship between urban greenery and residents' perceived sense of well-being in Prague?

The connection between happiness and urban greenery among the residents of cities is an issue that has been gaining much significance in urban planning and health conversation; this study explores this linkage by looking at self-reported happiness about UGS from people living in Prague. It follows a trend in research focusing on the importance of green environments to human well-being and QoL.

This study analyzes the self-reported happiness towards UGS among Prague residents; many studies have been carried out on how significant a green environment is for the well-being of a person. The results on green urban areas confirm the results of a similar study by White et al., (2013).

In this thesis, happiness is defined as comprising such dimensions as life satisfaction, psychological well-being, physical health, and environmental quality. A happy city, therefore, is a place where all levels of happiness and vitality of citizens are provided and promoted. The mapping happiness framework was employed to examine how different dimensions of urban greenery relate to elements of its subdomains.

The findings of this study, based on descriptive statistics and T-test analysis, revealed several important insights regarding the relationship between UGS and residents' well-being in Prague.

Firstly, the first domain of residents' life satisfaction based on the green environment provides insights into the connection between well-being and green spaces around Prague; the analysis suggested that easy access to green areas and substantial availability of green space positively influence residents' overall life satisfaction. Furthermore, the data shows that one's perception of their housing neighborhood influences their well-being. This shows solid evidence that residents' perception of ease of access to green space significantly differs from what would be expected by chance alone. The survey

results suggest that our surroundings profoundly impact our mental state; these findings prove the importance of green spaces in Prague's urban environment, and they also indicate that improving access to green spaces positively contributes to residents' overall well-being and satisfaction with their living environment.

Moreover, the study showcases a strong association between engagement in outdoor activities within green environments and resident's subjective well-being. Those who engage in outdoor activities in green environments report a high level of happiness; this suggests a strong association between outdoor activities in green environments and the level of happiness among the residents, indicating the role of UGS in promoting an active lifestyle and supporting overall health and well-being. Additionally, green spaces served as a valuable setting for stress relief, with residents utilizing these environments reporting a higher level of subjective well-being (individual's subjective experience and perception of their own life); the results underscore the role of green space as a beneficial environment for mental relaxation and stress reduction and contribution to overall happiness. Therefore, greenery provides opportunities for cognitive relations. Spending time in natural settings can enhance cognitive functioning through various pathways, including restoration of attention, reduction of mental fatigue, and promotion of creative thinking, and it contributes to the overall happiness of its users. The study highlighted the importance of traceable green spaces (green areas that are delineated, mapped, or documented within a city's planning documents or databases) in promoting regular physical activity, which was linked to higher levels of subjective well-being among residents. Accessible and well-connected green infrastructure encourages residents to engage in active lifestyles, fostering happiness and vitality within the community.

Therefore, these findings answer the main question this thesis wants to investigate and highlight the relationship between greenery and residents' sense of well-being in Prague; this relation can be characterized as a positive and statistically significant correlation.

6.2 If green spaces influence well-being and happiness, which specific characteristics contribute the most to residents' perceptions?

6.2.1 Accessibility of green spaces

Individual perceptions are essential when evaluating the benefits of UGS for well-being. Based on the data analysis, several specific characteristics of green spaces emerge as

significant contributors to residents' perceptions of well-being and happiness in Prague. Firstly, the accessibility of green spaces to housing areas plays a pivotal role. This is evident from the high levels of reported community life satisfaction among residents with easy access to green areas. Additionally, the frequency of casual interactions with neighbors in green environments suggests that the accessibility of these spaces fosters social connections and a sense of community, which are known to impact well-being positively.

6.2.2 Proximity to green spaces

Much research suggests that proximity to green spaces is associated with various positive outcomes, including enhanced well-being and happiness among residents; the data reveals that the majority of respondents (81.19%) noted that the nearest green space to their residential area is within a 1km radius, therefore, residents residing within proximity to green space most likely to enjoy benefits such as relaxation recreation and stress relief due to easy access to a green environment.

The proximity of green space to residential areas aligns with the concept that access to such spaces positively influences residents' well-being and happiness. Various studies have demonstrated that living near a green space is linked to improved mental health and increased physical activity (as evidenced by 80% of respondents preferring to engage in physical activities within green spaces); therefore, the high percentage of respondents residing within 1km of green space likely reflects a positive aspect of their living environment that contributes to their overall satisfaction.

6.2.3 Diverse cultural and social events in the green space

Furthermore, diverse cultural and social events within the green space in the housing areas, often facilitated by accessible green spaces, are closely associated with residents' satisfaction. These events, from park concerts to flea markets, provide recreational opportunities and platforms for social interactions and community bonding. Therefore, the accessibility of green spaces contributes to physical well-being and the social aspect of residents' lives, enhancing overall happiness.

6.2.4 Aesthetics of the green space

Moreover, while the quality of green spaces, including maintenance and amenities, influences residents' perceptions, the aesthetics of the green space also plays a vital role.

Most residents (61.5%) prefer experiencing green spaces through all senses, including visual appreciation. Additionally, 21.36% of residents prioritize the visual experience of green environments over other senses, highlighting a significant emphasis on aesthetics.

The results highlight the importance of the visual appeal of green space in shaping individuals' experiences and perceptions; it plays a vital role in creating an attractive and inviting green environment, which contributes to well-being and happiness among residents.

Investing in the aesthetic (physical appeal, accessibility, biodiversity, cleanliness and maintenance, natural scenery) of green space improves residents' well-being and happiness. It enhances the overall livability and attractiveness of the urban environment, including principles of landscape design, such as harmony, balance, and proportions. Cities can create environments that promote holistic well-being and foster a sense of pride and belonging.

6.2.5 Quantity of green space

In Prague, renowned for being a "green city," approximately 53% of its area is dedicated to urban green spaces, boasting an impressive 136m2 of greenery per capita. This substantial percentage underscores the city's commitment to maintaining an abundant natural landscape within its urban confines.

The quantity of green space is another critical characteristic that significantly impacts resident's perception of well-being and happiness; a notable majority of respondents 64.10% showed satisfaction with the amount of green space, and this same exceptional majority expressed a high level of life satisfaction; these findings suggest that access to adequate green space is associated with a high level of satisfaction among residents, indicating the positive influence of greenery on happiness. Good green space quantity (based on the World Health Organization recommends a minimum of 9m2 of green space per individual with an ideal value of 50 m2 per capita.) contributes to multiple aspects of good well-being, including physical health, mental well-being, and social cohesion; when it comes to physical health, sufficient green space enables residents to engage in outdoor activities such as walking and jogging, promoting an active lifestyle and reducing the risk of chronic diseases. Additionally, satisfaction with the quantity of green environment in housing areas reflects the positive impact of green space on residents' QoL and happiness.

Municipalities and urban planners should consider expanding public green areas to meet the growing demands of residents and ensure equitable access to a nature-rich environment for all citizens.

6.2.6 Green space conservation

Most respondents expressed satisfaction with the efforts made to preserve their neighborhood's natural environment; this indicates a generally positive perception of the conservation efforts, suggesting that residents appreciate initiatives to protect green space within their communities. Preservation efforts not only help maintain the ecological balance and biodiversity within the housing area but also provide multiple benefits for residents, including opportunities to enjoy nature and recreation; however, it is essential to the notable portion who expressed dissatisfaction or neutrality towards the preservation efforts being made in their neighborhood, the resident's feedback could indicate potential areas for improvement in conservation strategies such as addressing issues relation to maintenance, easy access or the expansion of the green space in the housing area.

Overall, the survey data put into light the importance of ongoing efforts (Prague 2030 climate plan to reduce CO2 emission by 45% before 2030) to preserve the natural environment in urban neighborhoods by prioritizing green space conservation and actively engaging residents in preservation initiatives within the housing area, communities could continue to foster healthy environments that promote health, high quality, and happiness for all residents.

In conclusion, the analysis shows various characteristics of green spaces and how this significantly influences residents' perception of well-being and happiness in Prague. Accessibility emerges as a pivotal factor, with easy access to green areas positively impacting community life satisfaction and fostering social connection; being close to green space with a proximity of 1km is associated with multiple positive outcomes. Additionally, diverse cultural and social events in green spaces enhance recreational opportunities. Aesthetics play an essential role, with residents preferring visually appealing green spaces. Furthermore, satisfaction with the quantity of green space reflects its positive influence on residents' QoL and happiness. Overall, all characteristics contribute to residents' perception, accessibility, and aesthetics, which appear to impact well-being and happiness in Prague. Significantly.

6.3 What factors are essential for successful urban planning in the context of promoting happiness and well-being in cities like Prague?

The concept of happy cities has been gaining more attention among researchers and scholars in planning and social studies. It is not enough to create just sustainable cities; it is essential to create happy cities that foster a sense of well-being among residents.

Cities are home to various parts of the world's population, providing access to jobs and public services; however, cities face significant social and environmental challenges that influence how residents perceive their lives and assess their overall well-being and satisfaction with life.

A city's physical and social environment can impact people's emotional and psychological states, sense of belonging, purpose, happiness, and overall satisfaction with life. This research results contribute to the vast literature review on the relationship between urban context and happiness and underscore evidence of the pivotal role. In urban planning and policymaking, the goal is to enhance the well-being and happiness of residents.

The survey results underscore that the relationship between happiness and the city context is very complex and multifaceted, and both city context and individual factors should be considered when developing initiatives for improving well-being and promoting happiness in cities.

The results inform policymakers and city planners on the key components that can shape residents' experience in a city, such as urban design, public spaces, and community resources, in their efforts to improve the well-being of residents. Urban design, public spaces, and the availability of community resources are vital components that can shape the experience of residents in a city (Olsen et al., 2019).

Urban design is a critical component that shapes residents' experience in a city, such as the availability of green spaces. Walkable, well-connected towns and neighborhoods contribute to residents' satisfaction and happiness with their living environments. The survey results highlight the importance of accessibility to green areas and the positive impact of diverse cultural and social events within public spaces for residents' happiness. Therefore, urban planning should highlight designs facilitating social interaction, physical activity, and natural access to promote residents' well-being.

One of the essential ways that cities can be designed to promote happiness is by shedding light on public spaces such as parks and visitor centers, community centers, and sports facilities. They provide opportunities for people to socialize and be connected to nature, and this research has shown that green space has a positive impact on mental health, which is crucial for creating happy cities; therefore, if we understand the effect of urban design on people's feelings and behavior, we can make cities more comfortable.

A study in Los Angeles revealed that people who live in areas with more parks are more helpful and trusting than people who do not, regardless of their income or race. Nature is not merely good for us. It brings out the good in us ('Happy City the Book', n.d.).

Table 21: Strategies for Enhancing Urban Livability Through Green Spaces

Theme	Strategy
Community Engagement and Participation	The involvement of local communities in the planning and development phase and the maintenance of green spaces is pivotal for creating spaces that reflect the needs of those who use them.
Innovative Urban Design	Innovative design should consider the multifunctional role of green spaces improving residents' health and well-being, such as parks, green roofs, and vertical gardens.
Policy and Investment	Policies should prioritize integrating green spaces into urban planning and development projects. These are important for ensuring that cities provide adequate spaces for residents' vital areas, such as parks and urban public green spaces.

6.4 Is A Green City Also a Happy City?

The research pushes the assumption that a green city can be paralleled with a happy city. Through the Happiness Framework Analysis of Prague's urban greenery, it has become evident that there is a significant positive correlation between green spaces and the residents' perceived sense of wellbeing. A notable portion of respondents reported higher levels of satisfaction and happiness through the green space; those who frequently experience the green space for physical activity or basic socializing reported a high level of life satisfaction and fulfillment; these same categories live within 1km of a green space whether it is in the housing area or public park, this underscores that proximity of a green

space regardless the size of it highly influence people positive feelings that could eventually lead to people happiness which is identified as wellbeing in this thesis. This research also highlights how green cities address critical components of happiness and QoL.

Therefore, a green city, as predefined in the literature review, is understood in this research as a metaphor for maintaining existing nature while making it usable for urban residents; it also refers to enhancing the urban nature and establishing nature in the city for a better relationship between the built environment and nature. Meanwhile, a happy city is a city that integrates economic, environmental, and social aspects to improve the quality of city life for present and future generations. Both definitions share the same aspect: improving the QoL of its residents.

Fundamentally, both green city and happy city share the similar goal of creating a livable, sustainable, inclusive urban environment that enhances and promotes the well-being and happiness of present and next generations; the typical focus on improving the OoL for residents proves the pivotal role of integrating urban nature into the urban context and switch to more holistic approaches to urban planning and design, nonetheless yes A green city is a happy city is we consider the case study of Prague, The presence of greenery, and opportunities for outdoor activities contribute to improved physical and overall wellbeing. In contrast, sustainable practices promote a sense of responsibility and connection to the environment. Ultimately, by prioritizing the intersection of environmental, social, and economic factors, green cities create environments where residents can thrive and lead fulfilling lives, aligning with the principles of a happy city. Prague Climate Plan 2030 is the perfect example of how a green city is a city of well-being by focusing on creating a more sustainable environment for its residents that aims to reduce adverse climate change through nature-based solutions such as green and blue infrastructure.

Considering the study results, urban planners should think beyond aesthetics and functionality; people make the city; therefore, an unwell city reflects its people, “One thing is certain: *we all translate our ideas of happiness into form. It happens when you buy a car. It happens when a CEO contemplates the form of a new skyscraper headquarters or when a master architect lays out a grand scheme for social housing. It happens when planners, politicians, and community boards wrestle over roads, planning*

regulations, and monuments. It is impossible to separate the life and design of a city from the attempt to understand happiness, to experience it, and to build it for society. The search shapes cities, and cities shape the search in return." ('happy city the book', n.d.)

Future urban development and regeneration efforts in other cities seeking to elevate their livability should prioritize green and sustainable initiatives; based on the results from this research in Prague, it is evident that the strategic development and preservation of green areas can transform urban environments into places of happiness and well-being.

6.5 Limitations

This study offers valuable insights into the complex relationship between urban greenery and residents' perceived well-being in Prague. Nonetheless, it is essential to mention several limitations that may impact the interpretation of the thesis findings. To begin with, the study's sample may not fully represent the diversity of Prague's population, as we had 191 respondents to the survey, which led to sample size bias and limited the reliability of the results. Secondly, self-reported data from the survey, such as happiness and well-being, introduces the possibility of response bias, where participants may provide socially desirable responses or overemphasize positive experiences with green spaces. Given these limitations, there is much room for further research. Most importantly, future research should be directed to a more comprehensive understanding of the relationship between urban greenery and residents' well-being, establishing the causality of the identified effects and informing more effective urban planning strategies to promote happiness and QoL in cities.

7. Conclusion

The author investigated a possible correlation between urban green space and happiness and the sense of well-being of residents of Prague; the findings are consistent with the general theme investigated, along with the thesis title: **Is a green city also a happy city?**

While it is assumed that cities that rank high on green city indexes foster well-being and happiness for their residents, this thesis's findings show a favorable relationship between urban greenery and a perceived sense of well-being, supporting the thesis hypothesis.

The author explored various indicators of happiness and well-being, such as life satisfaction and psychological well-being, health, access to art and informal education, green environment, sociality, and other factors within Prague's urban environment through a well-developed framework; all the findings highlight the thesis hypothesis and show a strong link between Prague status as a green city and its resident's sense of happiness.

The recognition of happiness as a basic human need underscores the significance of creating suitable conditions within cities to enhance residents' well-being and happiness. At the same time, other studies have recognized this importance, but there has been a gap in fully considering the opportunities cities offer to increase happiness and well-being; the current study research aims to address this matter by identifying factors that contribute highly to creating happy cities by prioritizing green space within urban environments contexts. This research provides a valuable foundation for further studies on the development of cities and urban happiness; its contribution lies in laying the groundwork for future investigation and interventions to foster happier and more livable cities for its residents.

"The city is not merely a repository of pleasures. It is the stage on which we fight our battles, where we act out the drama of our own lives. It can enhance or corrode our ability to cope with everyday challenges. It can steal our autonomy or give us the freedom to thrive. It can offer a navigable environment or create a series of impossible gauntlets that wear us daily. The messages encoded in architecture and systems can foster a sense of mastery or helplessness." ('happy city the book', n.d.)

Planners can contribute to more significant opportunities for happiness by incorporating strategies that include integrating happiness-related indicators into health impact

assessments and employing a new, participatory neighborhood planning process Through Happiness Framework (Pfeiffer & Cloutier, 2016).

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