SALISU MUKTAR FALALU

THE EVALUATION OF WALKWAYS DESIGN CONCEPTS FOR USERS' SATISFACTION IN SUSTAINABLE URBAN OPEN SPACES: A CASE STUDY OF IZMIR KONAK

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We certify that we have read the thesis submitted by Salisu Muktar Falalu titled **"The Evaluation of Walkways Design Concepts for Users' Satisfaction in Sustainable Urban Open Spaces: A Case Study of İzmir Konak"** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Applied Sciences.

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Salisu Muktar Falalu

15 / 06 / 2023

Day/Month/Year

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Salisu Muktar Falalu

Abstract

The Evaluation of Walkways Design Concept for Users Satisfaction in Sustainable Urban Open Spaces: A Case Study of Izmir Konak

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The evaluation of walkway design concepts in sustainable urban open spaces is crucial for ensuring user satisfaction and enhancing the quality of urban environments. This study focuses on the case of Izmir Konak City Square, aiming to assess the effectiveness of walkway designs and identify opportunities for improvement. Employing a qualitative and quantitative research methodology, questionnaires were administered to gather data on user perceptions and satisfaction levels, and also the responses from the participant has the total figure 224 responses and also the questionnaire was divided into four sections, which include the basic\information, the accessibility section, the design concept, and the sustainable urban open space. Moreover, the findings indicate that the current walkway design in Izmir Konak requires attention and enhancement. Users expressed a need for wider walkways to accommodate increased pedestrian traffic and improve overall mobility. Additionally, the study reveals the importance of incorporating new and innovative sustainable design concepts that align with environmental considerations and promote a sense of place. To enhance user satisfaction, several recommendations are proposed. Firstly, widening the walkways to provide more space for pedestrians and reduce congestion is crucial. This would enable users to navigate the urban open spaces comfortably and safely. The study's findings and recommendations provide valuable insights for the development and improvement of walkway design concepts in Izmir Konak and can serve as a guide for similar urban open spaces seeking to enhance user satisfaction and promote sustainable urban living. The conclusion section reveals the general overall result of the findings based on the users' responses.

Key Words: walkways design concept, user satisfaction, sustainable urban open space, urban pedestrian facilities, Izmir Konak City Square

Özet

Sürdürülebilir Kentsel Açık Alanlarda Kullanıcı Memnuniyeti Açısından Yürüme Yolları Tasarım Konseptinin Değerlendirilmesi: İzmir Konak Örneği

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Sürdürülebilir kentsel açık alanlarda yürüme yolu tasarım konseptlerinin değerlendirilmesi, kullanıcı memnuniyetini sağlamak ve kentsel çevrelerin kalitesini artırmak için çok önemlidir. Bu çalışma, yürüme yolu tasarımlarının etkinliğini değerlendirmeyi ve iyileştirme fırsatlarını belirlemeyi amaçlayan İzmir Konak Kent Meydanı örneğine odaklanmaktadır. Nitel ve nicel araştırma metodolojisi kullanılarak, kullanıcı algıları ve memnuniyet düzeyleri hakkında veri toplamak için anketler uygulanmış ve ayrıca katılımcıdan gelen yanıtların toplam sayısı 224'tür ve ayrıca anket, temel\bilgiler, erişilebilirlik bölümü, tasarım konsepti ve sürdürülebilir kentsel açık alan bölümünü içeren dört bölüme ayrılmıştır. Aayrıca bulgular, İzmir Konak'taki mevcut yürüme yolu tasarımının dikkat ve iyileştirme gerektirdiğini göstermektedir. Kullanıcılar, artan yaya trafiğini karşılamak ve genel hareketliliği iyileştirmek için daha geniş yürüyüş yollarına ihtiyaç duyduklarını ifade ettiler. Ek olarak çalışma, çevresel hususlarla uyumlu ve bir yer duygusu uyandıran yeni ve yenilikçi sürdürülebilir tasarım konseptlerinin dahil edilmesinin önemini ortaya koymaktadır. Kullanıcı memnuniyetini artırmak için çeşitli öneriler sunulmuştur. İlk olarak, yayalar için daha fazla alan sağlamak ve tıkanıklığı azaltmak için yürüyüş yollarının genişletilmesi çok önemlidir. Bu, kullanıcıların kentsel açık alanlarda rahat ve güvenli bir şekilde gezinmelerini sağlayacaktır. Çalışmanın bulguları ve tavsiyeleri, İzmir Konak'ta yürüyüş yolu tasarım konseptlerinin geliştirilmesi ve iyileştirilmesi için değerli bilgiler sağlar ve kullanıcı memnuniyetini artırmak ve sürdürülebilir kentsel yaşamı teşvik etmek isteyen benzer kentsel açık alanlar için bir rehber görevi görebilir. Sonuç bölümü, kullanıcıların yanıtlarına dayalı olarak bulguların genel genel sonucunu ortaya koymaktadır.

***Anahtar Kelimeler*:** yürüme yolları tasarım konsepti, kullanıcı memnuniyeti, sürdürülebilir kentsel açık alan, kentsel yaya tesisleri, İzmir Konak

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List of Abbreviations

WWDC:	Walkways Design Concept
SUOS:	Sustainable Urban Open Space
WWD:	Walkway Design
UOS:	Urban Open Space
PS:	Public Space
SWOT:	Strengths, Weaknesses, Opportunities, Threats

CHAPTER I

Introduction

Background to Study

Most of the urban pedestrian path ways as for the design of some walk ways concepts design for some of the users for their satisfaction are usually in too many different categories' such as the accessibility path of the urban area, the liveability of the urban area in the communities, the infrastructures facilities, and the safety and security of the given area (Akit, M., 2004). This are some major key components that are very important item's to be appraise for the needs of the users. It's therefore well beyond initialization a proposal technique to optimize this same augmentation of urban pedestrian facility in the urban areas environment's (Naghavi et al., 2009). Then it would be critical to promote walking experience in order to mitigate the effects of elevated automotive vehicle application in the field of the urban regions.

Urban open spaces play a vital role in the health and well-being of urban residents. They provide opportunities for recreation, relaxation, social interaction, and physical activity. One of the essential elements of the design of urban open spaces is walkways, which serve as key circulation routes that connect various amenities and destinations within the space (Papadimitriou E., 2012). Walkways can also enhance the aesthetic value of the space and create a sense of place for the users. The design of walkways in urban open spaces should be responsive to the needs and preferences of users, as it can significantly impact their satisfaction levels (Jaskiewicz, F., 2001).

Sustainable urban design principles emphasize the importance of creating walkways that prioritize the safety, accessibility, and comfort of all users, including pedestrians, cyclists, and people with disabilities (Lyle, & J. T., 1994). The design of walkways in urban open spaces should also consider factors such as landscape and site characteristics, user demographics, and the cultural and historical context of the space (C. Siddiqui et al., 2014). Therefore, evaluating the design concepts of walkways in

sustainable urban open spaces is crucial to ensure that they meet the diverse needs and preferences of users and contribute to the overall satisfaction of the users of these open spaces.

This evaluation of walk way design concept for user satisfaction in a sustainable urban open space will dissertation and with some basic analyzation for easy access for the user's comfortability access and also for some physical qualities of pedestrian paths on walkers' spatial experience to propose new design strategies for pedestrian spaces to be used by not only designers but also decision makers of the city's spatial structure. Konak square is taken as a case study due to the diversity that it has in its public spaces.

The evaluation of walkway design concepts for user satisfaction in sustainable urban open spaces is essential for several reasons. Firstly, user satisfaction plays a crucial role in promoting the utilization of pedestrian infrastructure and encouraging active modes of transportation. When pedestrians feel comfortable, safe, and engaged, they are more likely to choose walking as their preferred mode of travel, leading to reduced traffic congestion, improved air quality, and enhanced public health.

Secondly, sustainable urban development requires careful attention to the design and management of urban open spaces. Walkways, as integral components of these spaces, should align with principles of sustainability, considering factors such as energy efficiency, use of eco-friendly materials, greenery integration, and storm water management. Evaluating the existing walkway design concepts in Izmir Konak will enable a comprehensive assessment of their sustainability features and provide insights for future improvements.

Thirdly, the case study of Izmir Konak offers a unique opportunity to examine the relationship between walkway design concepts and user satisfaction in a specific cultural and geographical context. By focusing on Izmir Konak, the study can explore the cultural and historical aspects that influence user perceptions and preferences regarding walkway design. Understanding these contextual factors is crucial for

developing tailored design solutions that resonate with the local community and contribute to a sense of place.

To address the research gaps and contribute to the knowledge base in urban planning and design, this research study aims to evaluate the design concepts of walkways in Izmir Konak. Through a mixed-methods approach combining qualitative and quantitative data collection techniques, the study will gather insights from users regarding their satisfaction with the existing walkway design concepts. By analysing user feedback, identifying strengths and weaknesses, and comparing different design alternatives, the study will provide valuable information for urban planners, architects, and designers to enhance the quality of pedestrian infrastructure and create more enjoyable and sustainable urban open spaces in Izmir Konak.

Statement of the Problem

Urban open spaces play a critical role in promoting the health and well-being of urban residents, and the design of walkways in these spaces is an essential element that contributes to user satisfaction. However, despite the importance of walkways in urban open spaces, there is a lack of research on the design concepts of walkways in sustainable urban open spaces, particularly in the Konak district of Izmir, Turkey. Furthermore, there is a need to understand the factors that contribute to user satisfaction with walkways and to identify the opportunities and challenges associated with designing sustainable walkways in urban open spaces.

This study simd to address this gap in the literature by evaluating the design concepts of walkways in sustainable urban open spaces in the Konak district of Izmir and assessing their impact on user satisfaction. The study will also identify the factors that contribute to user satisfaction with walkways and make recommendations for improving the design concepts of walkways in the Konak district of Izmir. By doing so, this study will contribute to the body of knowledge on sustainable urban design and provide insights into the design of walkways in urban open spaces that meet the diverse needs and preferences of users.

In simalar manner, due to the rising of urbanisation which lead to the incresement of global population around the world which tried to push on more provacation on the urban system.as the result of this increase population that we have around the globe, walk ways design concepts should be design and plan accordingly due to the large amount of users that needs this kind of facilities (Alfonzo, M.A., 2005).

According to many research and field surveys which indicate that users complain alot especially during working hours since the Konak city square is also a officially center in which this time are the rushing hours for the users movement from one place to another. This same safety of pedestrian is a big issue to mobility academics because they represent the much more at-risk car drivers in walkability fatalities. For instance, during the planning of any project by the architect or engineers, a care should be taken for designing any pedestrian sidewalks very efficient for urban open space especially when designing any urban project areas (Diaz, & E.M. 2002).

There are many pedestrian facilities that are absent in some of the communities' areas in many countries which is not right for the users' needs urban development system. There are some major risk behaviours about the road user's behaviour and the walkways design which can be categorized into two, the purposeful misconduct and non-intention wrongdoing (Southworth, M. 2005). The purposeful misconduct which also can be classified into two, disobedience and confrontational action, while the non-intentional wrongdoing is stated when the user is not aware of the risk coming to him unconditionally.

For instance, most of the users prefer to walk along the side of the road, which is very wrong and danger while some of the users prefer to walk around the which has walkways less danger (Aashto2004).

First of all, the walkways paths should be one of the numbers (one) issues that the government authority should be focusing and also to be considered on how to tackle the issues that most of the pedestrian sidewalk ways are facing nowadays. Majority

some of the developed countries and undeveloped countries are facing a difficult issue concerning the application way to have an accurate walkway for the user's movement from one place to another (Alfonzo, M.A., 2005).

Moreover, if we consider about the risks and the danger that some of the urban communities are dealing of is not right based on the user needs items and also is not something to be neglected from the government authorities. The main issues here is to try to evaluate the walkway design concepts for the user's satisfaction in sustainable urban open space which the case of study is Konak city square which is one of the most visit square in the city of Izmir (Southworth, M. 2005).

Purpose of the Study

The purpose of this study is to evaluate the design concepts of walkways in sustainable urban open spaces in the Konak district of Izmir, Turkey, and to assess their impact on user satisfaction. Further purpose of the study is outlined below:

1. To develop a new design strategy for pedestrian user's satisfaction in a sustainable urban open space in Konak City Square, Izmir Turkey.
2. The study will mainly focus on the walkway patterns of the area through identifying and evaluating elements that are important to pedestrian user satisfaction.
3. In order to re-design some error that are facing around the area by showing and suggestion about how to handle the situation in the area of the city square.

Research Questions

1. What are the design concepts of walkways in sustainable urban open spaces in the Konak District of Izmir?
2. What are the factors that contribute to user satisfaction with walkways in urban open Spaces?
3. How do landscape and site characteristics influence the design of walkways in urban Open spaces in the Konak district of Izmir?

Research Hypothesis

1. Factors related to sustainability, such as environmentally friendly materials, energy efficiency, accessibility, and overall urban planning are to be consider for user satisfaction.
2. Various elements such as width, materials, aesthetics, safety features, landscaping, seating arrangements, lighting, and integration with the surrounding environment.

Significance of the Study

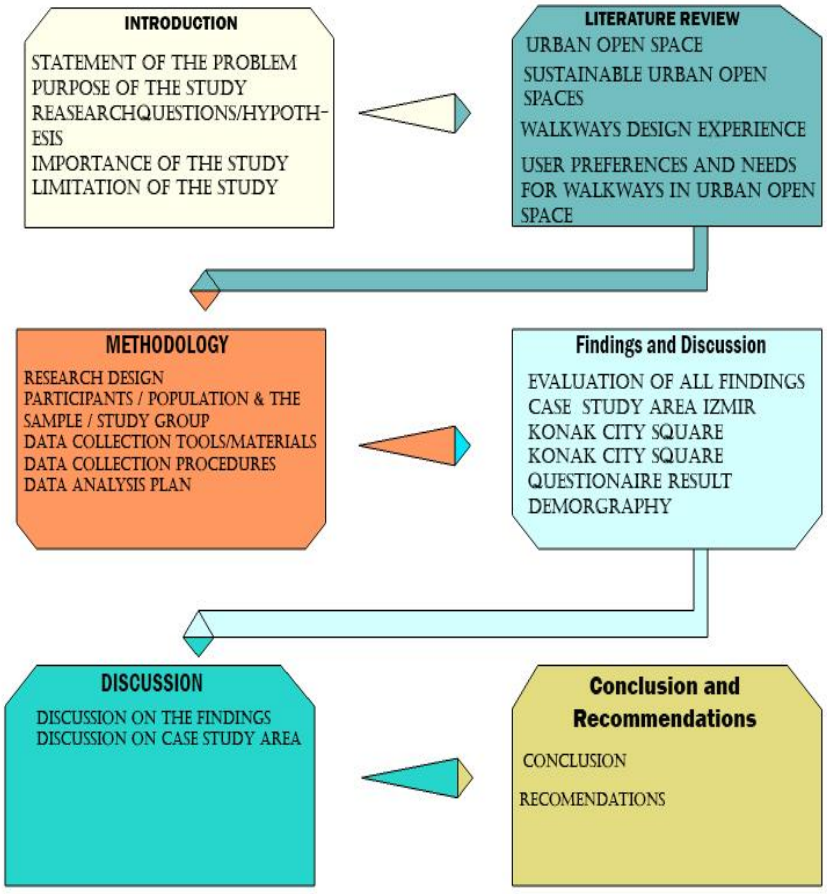
The research study will contribute to the existing body of knowledge in urban planning and design, specifically in the domain of walkway design and user satisfaction. The study's findings and recommendations can serve as a reference for future research, providing insights into the factors influencing user satisfaction, the impact of design concepts on pedestrian experience, and the integration of sustainability principles into walkway design. By sharing these findings, the study can foster further academic discourse and inform future research endeavours in urban design and planning.

Research Outline

The research outline serves as a guide for researchers to organize their thoughts, ensure the logical flow of information, and maintain consistency throughout the research project. It helps researchers stay focused and ensures that all essential elements of the research are covered in a systematic manner. It serves as a roadmap for researchers, providing a clear and logical framework for conducting and reporting their study. A research outline typically includes the following sections such as the introduction of the research topic, followed by the literature review, the methodology of the research, findings by representing the result, discussion sections according to findings, and then lastly the summering and the recommendations.

Figure 1

Research Outline



Limitations

The city square of Izmir is wide area and also the city Centre of Izmir but yet for the analyzation we will only try to evaluate the walkway design concepts for the users for their satisfaction in a sustainable urban open space. Based on the limitation of the research which will only evaluate the pathways by using some questionnaire for the users around the area or who visit the area before.

1. Limited sample size: Due to time and resource constraints, the sample size of participants may be limited, which could affect the generalizability of the findings.

2. Data collection challenges: The data collection process may face challenges, such as participant recruitment, data quality, or incomplete surveys, which could affect the findings data collection of the research study collectively.

3. Geographic limitations: This study focuses on the Konak district of Izmir, Turkey, and may not be applicable to other cities or regions with different cultural, social, or environmental contexts.

4. Time constraints: The time frame for the study may be limited, which could affect the depth and comprehensiveness of the research.

Definition of Terms

Walkway Design

Refers to the intentional planning and layout of pedestrian pathways within urban open spaces. It involves the consideration of various elements such as pathway configuration, materials, lighting, signage, seating, landscaping, and integration with the surrounding environment to create functional and aesthetically pleasing walkways (Greenwald, M & Boarnet, M, 2001).

User Satisfaction

Refers to the degree of fulfilment and contentment experienced by users or pedestrians in relation to the walkway design. It encompasses aspects such as safety, comfort, aesthetics, and functionality, ease of navigation, accessibility, and overall user experience. User satisfaction is a crucial factor in determining the success and usability of walkways (Besser & Dannenberg, 2005).

Sustainable Urban Open Spaces

Refers to urban areas that are designed and managed with a focus on environmental, social, and economic sustainability. Sustainable urban open spaces aim to provide green and accessible areas for recreation, social interaction, and ecological balance. These spaces often incorporate elements such as green infrastructure, biodiversity, energy efficiency, and storm water management to enhance sustainability (Alves, et al., 2021).

CHAPTER II

Literature Review

Urban open spaces are essential components of a city's social, cultural, and environmental fabric. They provide opportunities for recreation, relaxation, and social interaction, and can contribute to improving the quality of life of urban residents. Among the key features of (UOS) are walkways, which serve as important connectors between different areas of a city, linking neighbourhoods', parks, and other destinations the design of walkways in urban open spaces is crucial to ensure their functionality, safety, and aesthetic appeal, as well as their contribution to sustainability. Walkways need to be designed in a way that takes into account the needs and preferences of their users, and that provides a safe and accessible environment for people of different ages, abilities, and cultural backgrounds. Additionally, walkways design should reflect the principles of sustainable urban design, which include reducing the environmental impact of urban spaces, conserving resources, and enhancing the social and cultural aspects of urban life. This literature review aims to provide a comprehensive overview of the key concepts, practices, and research findings related to the evaluation of walkways design concepts for users' satisfaction in sustainable urban open spaces, with a particular focus on the case study of Izmir Konak. The review will examine the existing literature on the importance of walkways in urban open spaces, the design concepts and elements of walkways, the factors that contribute to user satisfaction with walkways, the tools and methods for evaluating walkways, and the sustainable design principles and practices for walkways in urban open spaces. By synthesizing and analysing the existing literature on these topics, this review aims to provide insights and recommendations for improving the design, evaluation, and management of walkways in urban open spaces, with a particular focus on the case study of Izmir Konak. The review will also identify gaps and challenges in the existing literature and suggest areas for further research and exploration.

Urban Open Space

Urban open spaces play a vital role in enhancing the quality of urban environments and promoting the well-being of city dwellers. These spaces, such as parks, plazas, squares, waterfronts, gardens, and green belts, are fundamental components of urban planning and design, contributing to the creation of livable and sustainable cities (Frumkin et al., 2004; Loukaitou-Sideris & Ehrenfeucht, 2016). The recognition of the importance of urban open spaces has led to an increasing body of research focusing on their design, management, and the benefits they provide to individuals and communities.

Urban open spaces are considered the lungs of a city, providing a breath of fresh air amidst the concrete and steel. These spaces act as social, cultural, and recreational hubs, serving as gathering places where people can engage in various activities and connect with nature (Louv, 2005). They offer a break from the hustle and bustle of urban life, providing an escape into tranquil and green environments.

The design of urban open spaces is crucial in shaping the character and functionality of a city. Parks and gardens provide opportunities for leisure activities, including walking, jogging, picnicking, and playing sports (Coley et al., 2017). Plazas and squares serve as central meeting points for social interactions, community events, and cultural celebrations (Gehl, 2010). Waterfronts offer scenic views, waterfront promenades, and spaces for relaxation and leisure activities (Carr et al., 1992). Green belts and nature reserves contribute to ecological conservation and provide habitats for diverse flora and fauna (Pickett et al., 2001).

Numerous studies have examined the benefits that urban open spaces provide to individuals and communities. Research has shown that access to green spaces within cities has a positive impact on physical and mental health. Engaging in physical activities in urban parks and green spaces has been associated with reduced risks of obesity, cardiovascular diseases, and other chronic health conditions (Lee & Maheswaran, 2011; Kaczynski et al., 2014). Green spaces also offer psychological

benefits, such as stress reduction, improved mood, and enhanced cognitive functioning (Hartig et al., 2014). Spending time in nature-rich environments has been linked to increased feelings of happiness, restoration, and overall well-being (White et al., 2013).

Urban open spaces also contribute to social cohesion and community development. They act as gathering places that facilitate social interactions, foster a sense of belonging, and strengthen social bonds (Pretty et al., 2007). These spaces provide opportunities for people from diverse backgrounds to come together, fostering social integration and cultural exchange (Hou, 2010). Community events and activities held in urban open spaces promote civic engagement and create a sense of shared ownership and pride (Brown & Reed, 2000).

Furthermore, urban open spaces have environmental benefits that contribute to the sustainability of cities. They provide habitats for wildlife, support biodiversity, and help maintain ecological balance (McPhearson et al., 2015). Green spaces act as carbon sinks, absorbing carbon dioxide and mitigating the impacts of climate change (Gómez-Baggethun et al., 2013). They also contribute to improved air quality by filtering pollutants and reducing heat island effects (Nowak et al., 2006). Urban open spaces can serve as storm water management systems, reducing the risk of flooding and improving water quality (Benedict & McMahon, 2002). Their ecological functions contribute to creating resilient and sustainable urban ecosystems.

To ensure the optimal utilization and management of urban open spaces, research has examined various aspects such as design principles, maintenance strategies, user preferences, and participatory approaches (Gobster et al., 2007). This body of knowledge informs urban planners, landscape architects, and policymakers in creating inclusive and user-friendly open spaces that cater to the diverse needs and preferences of urban residents.

Urban open spaces are vital components of urban planning and design, enhancing the quality of urban environments and promoting the well-being of city dwellers. These spaces provide a range of benefits, including physical and mental health, social cohesion, and environmental sustainability. Ongoing research continues to advance our understanding of the design, management, and benefits of urban open spaces, enabling the creation of livable and sustainable cities that prioritize the well-being and satisfaction of their residents.

Figure 2

Urban Open Space, located in Xuzhou, China (Arch Daily, 2022)

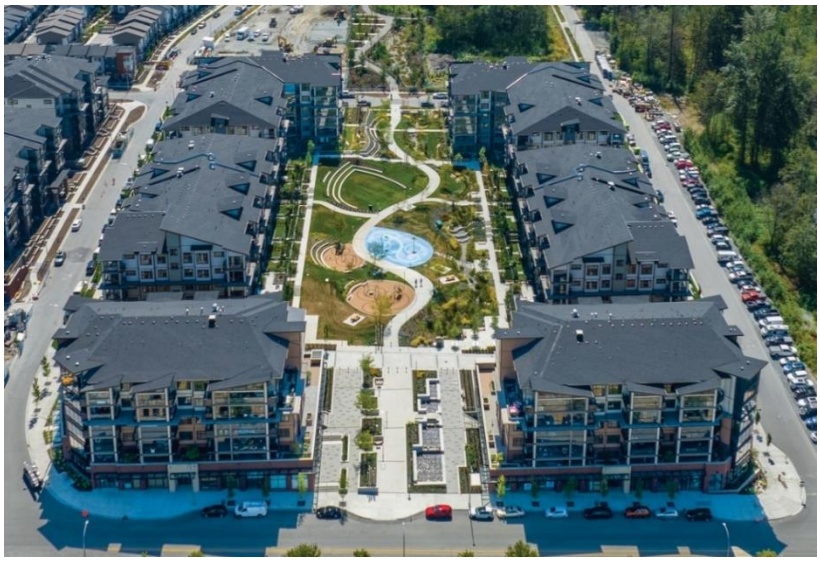
The development of (UOS) is an effect of several distinct epistemic postures that wholly analogous any ancient Greek concepts of private home, agora marketplace, and official public space (Southworth, M. 2005).

Firstly, the method here represent a space of unhindered liberty for oneself, the next is the area of open interaction and siting areas within peers and close acquaintances, as well as thirdly seems that the only space for publicly spoken words that must be adhere to accepted standards along in order to be legible as a prerequisite for an argument to be, and also the democracy must create some (UOS) of the areas that

residents are able to develop many ways of being aware and sharing (Diaz, & E.M. 2002).

Figure 3

The Carvolth Integrated Urban Open Space in Langley, Canada (Arch Daily, 2022)



Likewise, they proposed the concept with regard to the utilitarianism of (UOS) instead of restricting its scope to the query concerning ownership or accessible in some of the (UOS) areas. (UOS) may be described as an accumulation for interactions that take place when the unique ideologies as well as the preferences of every individual or some of the organizations that appeared in an amicable conflict with one another. In this view, it is possible to comprehend that locations that are ostensibly privatized (sitting areas, restaurants, cafes, clubs) which also indicate some possess for purpose for the benefit of each other's (Yagil, D., 2000).

For illustration this is the Grand Canal linear park, for design approach which this park will directly encourage the purpose of (UOS) for users' satisfaction needs for a better quality of life. As the result of this given space many opportunities will rise up in terms of user's daily activities and also to initiate both social and cultural activities.

Figure 4

The Grand Canal Linear Design Park in Mexico City (Arch Daily, 2020)

Anthropology researchers as well as geographic researchers specifically explore that the ideas of (UOS) within relation to the context of the historical human study is due to the many study points of view from the researchers, this becomes hard to lay out the idea of some areas in (UOS). Researchers in anthropology identify (UOS) as an entity wholly or partially both physically and socially developed, while the main architecture is among these numerous individuals and traditionally formed of artifacts (Ewing, et.al 2004).

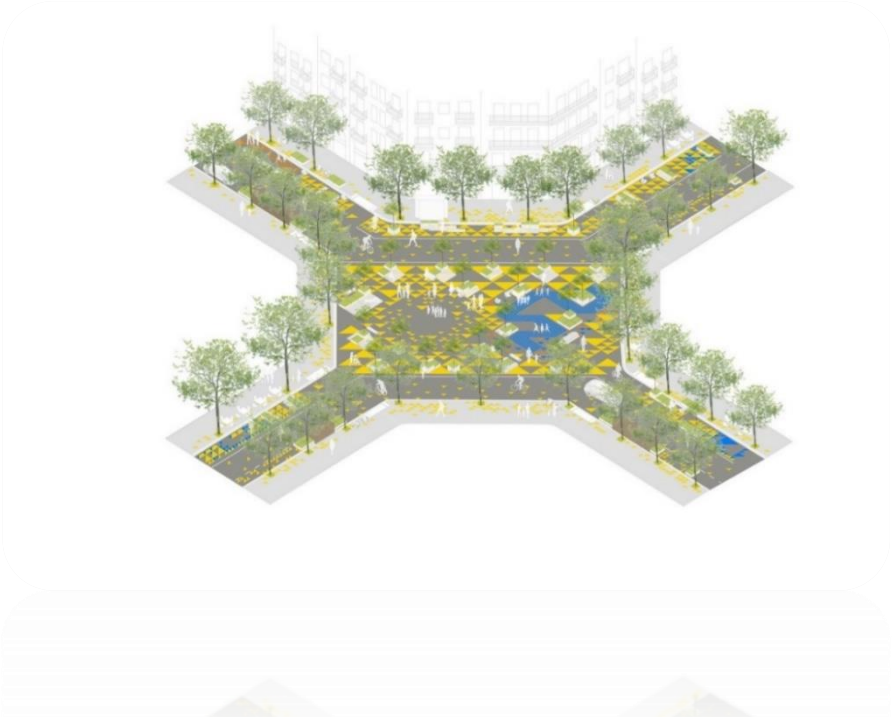
Figure 5

The Super Block of Sant Antoni in Barcelona Spain, (Arch Daily, 2019)

The super block was designed to enhance the urban environment for the area with some outrageous design principle according to public space which also this block was previously an urban road high which later was transformed too lively (UOS).

Figure 6

Design Principles of Super Block of Sant Antoni, (Arch Daily, 2019)



Researchers in anthropology believe that (UOS) cannot be evolve upon its own evolution, yet it also acts as an inherent and dynamic element of everyday existence that is inextricably which is related to society as well as unique traditions or any cultural or social activities (Moura, et al.2017).

Figure 7

Sitting Arrangements for Public User's in Super Block Sant Antoni (Arch Daily, 2019)

Based on the figure (7) above the sitting arrangement makes it more flexible in terms of spacing the benches accordingly for public users' satisfaction. These spaces provide a range of benefits, including physical and mental health, social cohesion, and environmental sustainability. Ongoing research continues to advance our understanding of the design, management, and benefits of urban open spaces, enabling the creation of liveable and sustainable cities that prioritize the well-being and satisfaction of their residents.

Figure 8

Domino Park in North Brooklyn, New York (Arch Daily, 2020)

Moreover the (UOS) has some influence towards the users which play a big role for using the space more wisely for instance the figures below are example of different times when the users still use this space for meeting and siting area the figures are in Izmir Kordon square which is a famous square in the city (Alfonzo, M.A., 2005).

Figure 9

Urban Open Space in Konak Kordon Square in Alsancak (Gezimanya, 2020)

(UOS) has some crucial effect on the users especially when the pandemic occurs, people have to stay at home without coming out for some few days but yet the authority plan a way for not connected together around the space area which they circle some of the areas by using some dimensions.

In Ching's book (2007), He furthermore describes the human being in urban open space and observes that "space sometimes transcends with us and happiness." Humans start moving, perceive stages, gurgling sounds, realize breezes, and odour the perfume of a garden area in blossoms further through (UOS) that surrounds us.

This is a naturally occurring substance, similar as wooden or stone surfaces. But still, it resembles a nebulous mist by nature. Our impression including the boundary lines created through form-defining features affects this same fractal pattern, size, and lighting like an object. Architectural emerges since these features of masses start to contain, confine, mold, and order (UOS) (Ching's 2007).

Figure 10

Skanderbeg Square, Tirana, Albania (Arch Daily, 2017)

Differ in various terms, some particular (UOS) is strongly influenced by the activity of its own inhabitants. Humans are far more drawn towards large spaces than small ones. So even though humans want to rest, dine, or exercise, amending welcoming spaces during which a number of different events are actually occurring. A multitude of tasks actually give (UOS) life and a broad spectrum of life. This idea of a space is a region that is separated into many shapes, each serving a distinct purpose, and the architecture is found within such a (UOS) which is the result of the fusion of culture and materiality (Ching's 2007).

Figure 11

Skanderbeg Square, in Tirana, Albania with Shading Elements (Arch Daily, 2017)

Beneath this, there are some outlines for certain basic definitions of (UOS) below, along with the part that follows, I'll attempting to obtain a more complete knowledge by examining how (UOS) and the public sphere are related (for the most thorough typology of (OPS) including corresponding critics to present). Thus, the interest of accounting again for repercussions of either the term public space (PS) for a democratic system, I shall seek to comprehend everything as completely as possible.

The descriptions provided beneath should also be viewed as provisional and supportive of one another because (PS) is a changing concept (Carmona, M., el, al. 2003).

Figure 12

Trafalgar Square in London, England (Wikipedia, 2007)

Another fundamental problem that is facing the (UOS) seems to be unlike initially, when streets and public squares were founded and operated by the authorities, the spaces is sustained for municipal governments, users are going to be governed for owner occupiers who are granted the authority to impose restrictions in place and regulate events (Minton, A. 2006).

(Kohn 2004) reviews the connection among both individual ownership, public space, and political participation, recounting alterations to the legal definition of public space. Kohn claims some of the authorities that designed environment's structure pattern and regulatory could also reaffirm or develop some alternatives correlations of being included or excluded. Some Spaces procedures and modern architecture pathways could indeed ameliorate or amplify inculcated social processes by organizing public views, interrelations, or even intentions.

The main goals of (UOS) are to establish an interconnected standard format but instead perceptions which foster cohesion among users who might be divided by private entities. Examines the relationship between private ownerships, (UOS) or even democratic engagement, detailing changes towards the legitimate term public open space.

Aims and Significance of Urban Open Spaces

Urban open spaces serve important purposes in urban environments, and their significance extends to various aspects of urban life. These spaces are designed and maintained with specific aims in mind, and their presence contributes to the overall well-being and functionality of cities. Understanding the aims and significance of urban open spaces is crucial for effective urban planning and design.

The primary aim of urban open spaces is to provide accessible and inclusive environments that enhance the quality of urban life (Gehl, 2010). These spaces are designed to be welcoming and inviting, creating opportunities for people to engage in a range of activities. By offering a break from the built-up and densely populated areas of the city, urban open spaces provide a respite where individuals can relax, connect with nature, and rejuvenate. These spaces offer a counterbalance to the fast-paced urban lifestyle, promoting a sense of calm and tranquillity.

Urban open spaces also aim to promote physical and mental well-being (Louv, 2005). Through their design and amenities, these spaces encourage physical activity and outdoor recreation. Parks and green areas provide opportunities for walking, jogging, cycling, and other forms of exercise. Access to nature within urban environments has been associated with improved physical health outcomes, including reduced risks of obesity, cardiovascular diseases, and other chronic health conditions (Lee & Maheswaran, 2011). Moreover, spending time in nature-rich environments has been linked to psychological benefits, such as stress reduction, improved mood, and enhanced cognitive functioning (Hartig et al., 2014).

Another important aim of urban open spaces is to foster social cohesion and community interaction. These spaces act as social hubs, where people from diverse backgrounds can come together, interact, and engage in social activities (Hou, 2010). They serve as meeting points for friends, families, and communities, creating opportunities for social connections, cultural exchange, and community events. The presence of urban open spaces encourages social interactions, strengthens social bonds, and fosters a sense of belonging and community pride (Pretty et al., 2007).

Additionally, urban open spaces contribute to the environmental sustainability of cities. They serve as green lungs, providing habitats for wildlife and contributing to biodiversity conservation (McPhearson et al., 2015). Through their vegetation, these spaces absorb carbon dioxide, mitigate the impacts of climate change, and improve air quality (Gómez-Baggethun et al., 2013). Urban open spaces also play a crucial role in managing storm water runoff, reducing the risk of flooding, and improving water quality (Benedict & McMahon, 2002). Their presence helps to create a more resilient and sustainable urban ecosystem.

The significance of urban open spaces extends beyond their immediate physical and environmental attributes. These spaces have the potential to attract tourists, enhance the image of a city, and contribute to economic development. Well-designed and well-maintained urban open spaces can act as tourist attractions, drawing visitors who appreciate the beauty and recreational opportunities they offer. They also enhance the overall attractiveness and liveability of a city, making it more desirable for residents, businesses, and investors.

Moreover, urban open spaces contribute to the overall cultural and aesthetic fabric of a city. They provide opportunities for public art installations, cultural events, and performances, enriching the cultural landscape of urban environments. The design and aesthetics of these spaces play a significant role in creating an appealing and visually pleasing urban environment.

Urban open spaces serve multiple aims and hold great significance in urban planning and design. They provide accessible and inclusive environments that enhance the quality of urban life by promoting physical and mental well-being, fostering social cohesion, and contributing to environmental sustainability. These spaces create opportunities for recreation, relaxation, social interaction, and cultural engagement, thereby enriching the urban experience and improving the overall livability of cities. Recognizing the aims and significance of urban open spaces is essential for effective urban planning, ensuring the creation and maintenance of vibrant, sustainable, and people-centric urban environments (Karşıyaka Haber, 2018).

Figure 13

Halk Nature Reserve Park in Mavişehir (Karşıyaka Haber,2018)

The new breath to new breath to Mavişehir Halk Nature reserve, created under the Izmir Municipalities upon the space measuring over 100,000 sq. in Mavişehir, Karşyaka, could rank among lead to quality within that space (Karşıyaka Haber, 2018).

This People's choice of Field is located at Karşyaka which has been finished by the Izmir municipal council, whose constructs recreational and park places that are going

to offer locals with such a cool breeze along including its urban green layouts. Again, on site of over 100,000 sq. meters, Halk Park was created using a contemporary and creative technique (Greenwald, & Boarnet, 2001).

In relation to certain 66,500 sq. meters of open areas, Halk Park features are two exercise centers, including one designed specifically targeting seniors, including 3 different public parks for young kids. In furthermore to the above, the park has three pedestrian crosswalks, two water barriers, and a caravan cafeteria, with internet access. The Metropolis Administration has indeed created grassland relaxation spaces that offer local inhabitants of Izmir a wonderful freedom to pursue its sunlight. In Halk Park, 610 various varieties of trees, 6,000 grasses, including 3,750 grounds covers as well as encasing vegetation are currently being started planting (Karşıyaka Haber, 2018).

Role of Urban Spaces

Urban open spaces play a crucial role in shaping the urban environment and contributing to the well-being of urban residents. These spaces, which include parks, plazas, squares, waterfronts, gardens, and green belts, serve multiple functions and provide numerous benefits to individuals and communities.

One of the primary roles of urban open spaces is to provide areas for recreation and leisure activities. Parks and green spaces offer opportunities for physical exercise, sports, picnics, and relaxation (Brown & Reed, 2000). These spaces provide a break from the built-up areas of the city and offer opportunities for individuals to connect with nature, improving their physical and mental well-being (Coley et al., 2017). Urban open spaces also offer settings for cultural and artistic events, fostering creativity and community engagement (Hou, 2010).

Furthermore, urban open spaces act as social gathering places, facilitating social interactions and community engagement. They serve as meeting points for people from diverse backgrounds, promoting social cohesion and a sense of belonging (Carr et al., 1992). These spaces offer opportunities for individuals to come together, engage in

conversations, and participate in community activities, strengthening social bonds and fostering a sense of community (Loukaitou-Sideris & Ehrenfeucht, 2016).

Urban open spaces also play a role in improving the environmental quality of cities. They contribute to the mitigation of climate change by absorbing carbon dioxide and providing shade and cooling effects (Nowak et al., 2006). Vegetation in these spaces helps to improve air quality by filtering pollutants and reducing noise levels (Gehl, 2010). Additionally, urban open spaces serve as green infrastructure, managing storm water runoff and reducing the risk of flooding (Pickett et al., 2001). They also support biodiversity by providing habitats for various plant and animal species (Gobster et al., 2007).

Moreover, urban open spaces contribute to the economic vitality of cities. Well-designed and well-maintained open spaces can attract visitors, stimulate tourism, and boost local businesses (Gehl, 2010). These spaces enhance the image and attractiveness of a city, making it more appealing for residents, businesses, and investors (Carr et al., 1992).

The role of urban open spaces is closely linked to the concept of sustainable urban development. These spaces promote environmental, social, and economic sustainability by providing access to nature, fostering social interactions, and contributing to a sense of place and identity (Frumkin et al., 2004). They support the overall liveability and resilience of cities by offering spaces for people to connect with nature, engage in physical activities, and build social connections (McPhearson et al., 2015).

Urban open spaces play a multifaceted role in urban environments. They provide areas for recreation, leisure, and cultural activities, fostering physical and mental well-being. These spaces also serve as social gathering places, promoting social cohesion and community engagement. Additionally, urban open spaces contribute to the environmental quality of cities by mitigating climate change, improving air quality, and

supporting biodiversity. Their presence enhances the economic vitality of cities by attracting visitors and stimulating local businesses. Overall, urban open spaces contribute to sustainable urban development, creating vibrant, inclusive, and livable cities.

Benefits of Urban Open Spaces

Urban open spaces offer a wide range of benefits to individuals, communities, and the environment. Here are some key benefits of urban open spaces:

i. Physical and Mental Well-being: Urban open spaces provide opportunities for physical activity, exercise, and outdoor recreation. They offer spaces for walking, jogging, cycling, and sports activities, contributing to improved physical fitness and overall health (Lee & Maheswaran, 2011). Engaging in physical activity in green spaces has been associated with reduced risks of obesity, cardiovascular diseases, and other chronic health conditions (Kaczynski et al., 2014). Additionally, spending time in nature-rich environments within urban settings has been linked to reduced stress, improved mood, and enhanced mental well-being (Barton & Pretty, 2010).

ii. Social Interaction and Community Building: Urban open spaces act as social gathering places, bringing people from diverse backgrounds together. They provide settings for social interactions, conversations, and community events (Carr et al., 1992). These spaces foster social cohesion, strengthen social bonds, and promote a sense of belonging and community pride (Pretty et al., 2007). Parks, plazas, and squares often serve as venues for cultural celebrations, performances, and community festivals, enhancing community engagement and cultural exchange (Hou, 2010).

iii. Environmental Sustainability: Urban open spaces contribute to environmental sustainability by providing green infrastructure within cities. They absorb carbon dioxide and release oxygen, mitigating the impacts of climate change (Gómez-Baggethun et al., 2013). Vegetation in open spaces helps to filter pollutants,

improve air quality, and reduce noise levels, creating healthier and more pleasant urban environments (Gehl, 2010). Furthermore, these spaces play a role in storm water management by reducing runoff, preventing flooding, and improving water quality (Benedict & McMahon, 2002). Urban open spaces also support biodiversity by providing habitats for various plant and animal species (Gobster et al., 2007).

iv. Improved Quality of Life: Access to urban open spaces enhances the quality of life for urban residents. These spaces offer a respite from the fast-paced urban environment and provide opportunities for relaxation, contemplation, and connection with nature (Coley et al., 2017). They contribute to the aesthetic appeal and attractiveness of cities, creating visually pleasing landscapes and enhancing the overall liveability of urban areas (Gehl, 2010). Urban open spaces offer settings for leisure activities, picnics, and outdoor gatherings, providing enjoyable experiences for individuals, families, and communities.

v. Economic Benefits: Well-designed and well-maintained urban open spaces have economic benefits for cities. They attract visitors and tourists, contributing to local businesses and stimulating economic activity (Gehl, 2010). Urban open spaces enhance the image and reputation of a city, making it more attractive for residents, businesses, and investors (Carr et al., 1992). They can serve as catalysts for urban revitalization, attracting investment and improving property values in surrounding areas (Hou, 2010).

Figure 14

Keqiao Center for Business District in Shaoxing River Basin China, (Plat Studio, 2021)

Urban open spaces offer numerous benefits, including improved physical and mental well-being, enhanced social interaction and community building, environmental sustainability, improved quality of life, and economic advantages for cities. Recognizing and prioritizing the creation and maintenance of urban open spaces is essential for promoting healthier, more livable, and sustainable urban environments.

Sustainable Urban Open Spaces

Sustainable urban open spaces are designed and managed with a focus on environmental, social, and economic sustainability. These spaces contribute to the overall sustainability of cities by incorporating sustainable practices and principles into their design, construction, and operation. Here are some key aspects and strategies related to sustainable urban open spaces (Basu, & Sevtsuk, 2022).

Environmental Sustainability: Sustainable urban open spaces prioritize environmental conservation and resource efficiency. They integrate green infrastructure elements such as trees, plants, and permeable surfaces to enhance biodiversity, improve

air quality, and manage storm water runoff (Nowak et al., 2006; Benedict & McMahon, 2002). These spaces may incorporate sustainable water management systems, such as rain gardens, bios wales, or constructed wetlands, to capture and filter storm water, reducing the strain on municipal drainage systems (CIRIA, 2015). Renewable energy technologies, such as solar panels or wind turbines, may be integrated into the design to generate clean energy for lighting or other energy requirements (De Ridder et al., 2014).

Climate Resilience: Sustainable urban open spaces consider the impacts of climate change and aim to enhance the resilience of cities. They may include climate-responsive design features such as shading structures, green roofs, or heat-resistant materials to mitigate urban heat island effects and provide cool microclimates (Gómez-Baggethun et al., 2013). The selection of native or climate-adaptive plant species helps to increase the resilience of vegetation to changing climate conditions (Hough, 2004). Additionally, these spaces can be designed to provide natural habitats and corridors that support biodiversity and enable species adaptation to climate change (Ahern, 2013).

Social Equity and Inclusivity: Sustainable urban open spaces prioritize social equity and inclusivity, aiming to serve the needs of diverse communities. They are designed to be accessible and inclusive, providing features such as barrier-free pathways, seating areas, and playgrounds that cater to people of all ages and abilities (Aldred, 2012). Community engagement and participatory design processes involve local residents and stakeholders in the planning and decision-making processes, ensuring that the spaces reflect the needs and aspirations of the community (Carmona et al., 2008). These spaces may also incorporate cultural and educational elements that celebrate local heritage and promote social cohesion (Loukaitou-Sideris & Ehrenfeucht, 2016).

Economic Viability: Sustainable urban open spaces can contribute to the economic vitality of cities. They serve as attractive destinations that draw visitors and tourists, generating economic activity for local businesses, such as cafes, shops, and recreational services (Gehl, 2010). Well-designed and well-maintained open spaces

enhance property values and can contribute to real estate development and urban revitalization (Hou, 2010). Moreover, sustainable practices, such as energy-efficient lighting, water conservation measures, and cost-effective maintenance strategies, can help reduce operational costs and ensure long-term financial sustainability (Cabe, 2005).

By integrating environmental, social, and economic considerations, sustainable urban open spaces contribute to the creation of livable, resilient, and vibrant cities. They provide opportunities for people to connect with nature, engage in physical activities, and foster social interactions. Furthermore, these spaces enhance the ecological integrity of urban environments, contribute to climate change adaptation, and support the well-being and quality of life of urban residents (Basu, & Sevtsuk, 2022).

Importance of Walkways in Sustainable Urban Open Spaces

Walkways play a crucial role in creating sustainable urban open spaces. They serve as essential elements of the urban infrastructure and contribute to the overall functionality, accessibility, and aesthetics of these spaces. Here are the key reasons why walkways are important in sustainable urban open spaces (Frumkin et al., 2004).

Enhancing Pedestrian Mobility

Walkways provide designated paths for pedestrians, promoting walking as a sustainable mode of transportation. They connect different areas within the urban open spaces, such as parks, plazas, and waterfronts, making it easier for people to navigate and access various amenities and destinations. By encouraging walking, walkways reduce the dependence on motorized vehicles, thereby decreasing traffic congestion, air pollution, and carbon emissions (Litman, 2019). This supports sustainable urban mobility and contributes to a healthier and more liveable city.

Promoting Active Lifestyles

Walkways encourage physical activity and contribute to public health and well-being. By providing safe and attractive pedestrian routes, they create opportunities for people to engage in walking, jogging, running, and cycling. Regular physical activity

has numerous health benefits, including reduced risks of obesity, cardiovascular diseases, and mental health disorders (CIRIA, 2015). Walkways in urban open spaces provide accessible and inclusive spaces for people of all ages and abilities to engage in physical activities, promoting a culture of active lifestyles.

Figure 15

Keqiao Center Promoting Sustainable Urban Open Space (Plat Studio, 2021)

Creating Social Spaces

Walkways in urban open spaces serve as social connectors, facilitating social interactions and community engagement. They provide spaces where people can meet, gather, and engage in conversations, fostering a sense of community and social cohesion (Gehl, 2010). Well-designed walkways may include seating areas, gathering spaces, and plazas, creating opportunities for people to socialize, relax, and enjoy the surroundings (Carr et al., 1992). These social interactions contribute to the vibrancy and liveliness of urban open spaces, enhancing the overall quality of life for residents and visitors.

Improving Safety and Security

Well-lit and well-designed walkways enhance safety and security in urban open spaces. Adequate lighting along walkways improves visibility and reduces the risk of

accidents, creating a safer environment for pedestrians, especially during evening hours (Nasar, 2007). Clear sightlines and unobstructed pathways improve personal safety and reduce the potential for crime and antisocial behaviour (Loukaitou-Sideris & Ehrenfeucht, 2016). Incorporating features such as surveillance cameras, emergency call boxes, and effective maintenance strategies further enhance the security and comfort of walkways.

Supporting Sustainable Design Principles

Walkways in sustainable urban open spaces can be designed with environmentally friendly materials and techniques. The use of permeable surfaces allows for natural drainage and reduces storm water runoff, contributing to water conservation and mitigating flooding risks (CIRIA, 2015). Incorporating green infrastructure elements along walkways, such as street trees and vegetation, improves air quality, reduces the urban heat island effect, and enhances the aesthetics of the space (Nowak et al., 2006; Gómez-Baggethun et al., 2013). Integrating sustainable design principles into walkways aligns with broader environmental sustainability goals and helps create more resilient and ecologically sensitive urban environments.

Walkways play a vital role in sustainable urban open spaces by enhancing pedestrian mobility, promoting active lifestyles, creating social spaces, improving safety and security, and supporting sustainable design principles. They contribute to the overall sustainability, accessibility, and liveability of cities, fostering healthier, more vibrant, and environmentally responsible urban environments.

Walkways are an essential component of sustainable urban open spaces because they provide a safe, accessible, and sustainable means of transportation and recreation for pedestrians. Well-designed walkways can encourage people to walk instead of using cars or other motorized modes of transportation, which can reduce traffic congestion, air pollution, and carbon emissions (Gehl, J. 2010).

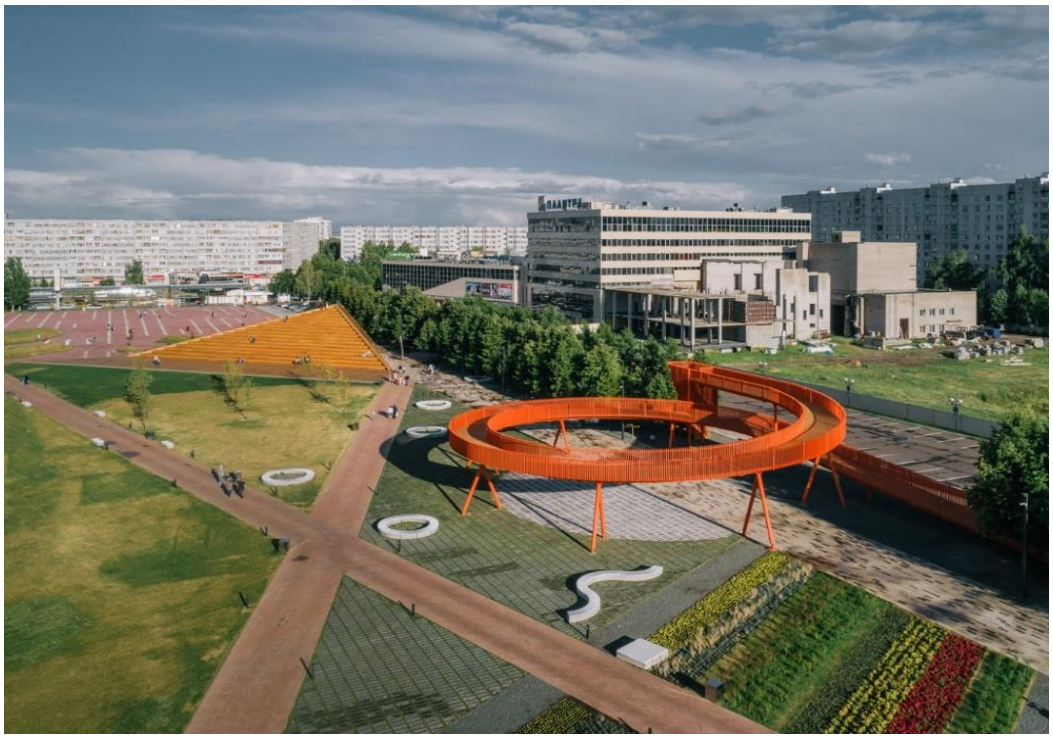
Figure 16

Azatlyk, Central Square with Sustainable Design Approaches. (Arch Daily, 2020)

In addition to their environmental and health benefits, walkways can also improve the accessibility and connectivity of urban open spaces. By providing well-connected and well-maintained paths for pedestrians, walkways can enhance the connectivity of urban neighborhoods and improve access to public transportation and other urban amenities. Walkways can also enhance the safety and security of urban open spaces by providing well-lit and well-maintained paths for pedestrians (Jacobs, J. 1961).

Figure 17

Top View of Azatlyk Central Square (*Arch Daily, 2019)*



Additionally, walkways can contribute to the aesthetics and functionality of sustainable urban open spaces. By incorporating design elements such as greenery, public art, and seating areas, walkways can enhance the visual appeal of urban open spaces and provide comfortable and attractive areas for social interaction and relaxation. By providing multi-functional spaces for walking, jogging, cycling, and other recreational activities, walkways can increase the functionality and livability of sustainable urban open spaces (Gehl, J. 2010).

Figure 18

Central Pedestrian Area in Vratsa Bulgaria, (Big see, 2021)

Overall, walkways are a critical component of sustainable urban open spaces, as they contribute to environmental, health, social, and economic sustainability (Gehl, J. 2010). By promoting walking and other forms of active transportation, enhancing connectivity and accessibility, improving safety and security, and increasing functionality and aesthetics, walkways can help create more sustainable, healthy, and livable urban environments (Jacobs, J. 1961).

Sustainable urban design principles are a set of guidelines and strategies that aim to create urban environments that are socially, economically, and environmentally sustainable. These principles emphasize the importance of reducing the negative impacts of urbanization, such as pollution, congestion, and sprawl, and promoting the positive impacts, such as livability, sustainability, and resilience (Gehl, J. 2010).

Sustainable urban design principles include concepts such as compact and mixed-use development, pedestrian and bicycle-friendly infrastructure, green infrastructure, and energy-efficient buildings. Compact and mixed-use development, for example, involves building compact, walkable neighborhoods that mix different land uses, such as residential, commercial, and recreational, in close proximity (Gehl, J. 2010).

Figure 19

The Paseo Del Muelle Uno, in Malaga Spain, (Tripkay, 2015)

Pedestrian and bicycle-friendly infrastructure includes designing streets, sidewalks, and public spaces that prioritize the needs and safety of pedestrians and cyclists over those of cars. Green infrastructure involves using natural systems, such as parks, green roofs, and rain gardens, to manage storm water runoff, improve air quality, and provide habitat for wildlife. Finally, energy-efficient buildings involve designing and constructing buildings that use minimal amounts of energy and produce minimal amounts of greenhouse gas emissions (Jacobs, J. 1961).

i. Compact and Mixed-Use Development: Promoting compact and mixed-use development is a fundamental principle of sustainable urban design. It involves designing cities and neighbourhoods in a way that reduces urban sprawl and

promotes the efficient use of land. Compact development encourages higher population densities, which can support the provision of public transportation, reduce the need for private vehicles, and minimize energy consumption for commuting (Newman et al., 2009). Mixed-use development combines residential, commercial, and recreational spaces within close proximity, creating walkable communities and reducing the need for long-distance travel.

ii. Connectivity and Walkability: Creating connected and walkable neighbourhoods is essential for sustainable urban design. It involves designing streets, sidewalks, and pathways that prioritize pedestrians, cyclists, and public transportation. Well-designed and well-connected networks of sidewalks and bike lanes encourage active transportation, reduce reliance on cars, and promote physical activity (Jacobsen, 2003). A focus on walkability ensures that essential amenities, such as schools, parks, shops, and public transportation, are easily accessible, contributing to a vibrant and liveable urban environment.

iii. Green Infrastructure and Biodiversity: Integrating green infrastructure and promoting biodiversity is a critical aspect of sustainable urban design. Green infrastructure includes elements such as parks, urban forests, green roofs, and rain gardens that provide multiple environmental benefits. These features help mitigate the urban heat island effect, improve air quality, reduce storm water runoff, and provide habitats for wildlife (Colding & Barthel, 2017). Preserving existing green spaces, incorporating native plants, and creating wildlife corridors contribute to maintaining and enhancing urban biodiversity, supporting ecosystem services and ecological resilience.

iv. Energy Efficiency and Renewable Energy: Sustainable urban design principles emphasize energy efficiency and the use of renewable energy sources. Buildings designed with energy-efficient features, such as proper insulation, efficient heating and cooling systems, and smart lighting, reduce energy consumption and greenhouse gas emissions (Girardet, H. 2019). Incorporating renewable energy

technologies, such as solar panels and wind turbines, into urban infrastructure can help generate clean energy and reduce reliance on fossil fuels (De Ridder et al., 2014). District-level energy systems, such as combined heat and power (CHP) or district heating and cooling, can further optimize energy use and reduce wastage.

v. Social Equity and Inclusivity: Sustainable urban design principles aim to create socially equitable and inclusive cities. This involves providing equal access to essential services, amenities, and opportunities for all residents, regardless of income, age, or abilities. It includes designing accessible infrastructure, such as ramps, elevators, and tactile paving, to accommodate people with disabilities. Affordable housing, community facilities, and public spaces that cater to diverse populations contribute to social cohesion and equity (Carmona et al., 2008). Engaging local communities in the design and decision-making processes ensures that their needs and perspectives are considered.

vi. Adaptive Reuse and Heritage Conservation: Sustainable urban design principles encourage adaptive reuse and the conservation of heritage buildings and sites. Adaptive reuse involves repurposing existing structures for new functions, rather than demolishing and constructing new buildings. It helps preserve architectural heritage, reduces construction waste, and maintains the cultural identity of a place (Davies, 2010). Retrofitting and renovating older buildings to improve energy efficiency and meet modern standards contribute to reducing resource consumption and carbon emissions.

User satisfaction in sustainable urban open spaces is a crucial aspect of urban planning and design. The success of sustainable urban open spaces is measured not only by their environmental and economic performance but also by the level of satisfaction and well-being they provide to the users. User satisfaction encompasses various factors, including the functionality, aesthetics, accessibility, safety, and social interactions within these spaces. Understanding and enhancing user satisfaction is essential for creating

inclusive and vibrant open spaces that meet the diverse needs and preferences of the community.

Walkways Design Experience

Walkway design experience refers to the practical knowledge, skills, and expertise gained through the process of designing and implementing pedestrian walkways in urban environments (Appleyard et al., 1981). It encompasses the understanding of various factors and considerations involved in creating functional, aesthetically pleasing, and safe walkways that cater to the needs of pedestrians.

Figure 20

Walking Design Experience in Place de la République, Square, (Flickr, 2014)

The design experience of walkways involves a multidisciplinary approach, incorporating principles of urban planning, landscape architecture, transportation engineering, and human centred design (Appleyard et al., 1981). Designers must consider factors such as the surrounding built environment, pedestrian flow patterns, accessibility requirements, safety measures, aesthetics, and integration with the overall urban fabric.

One aspect of walkways design experience is the understanding of pedestrian behaviour and preferences. Designers need to analyse pedestrian movement patterns, identify desire lines, and consider the needs of different user groups, including pedestrians with disabilities, elderly individuals, and families with children (Francis et al., 2012). This knowledge helps in determining the optimal layout, width, and materials for the walkways, ensuring that they are comfortable, inclusive, and enjoyable for users.

Figure 21

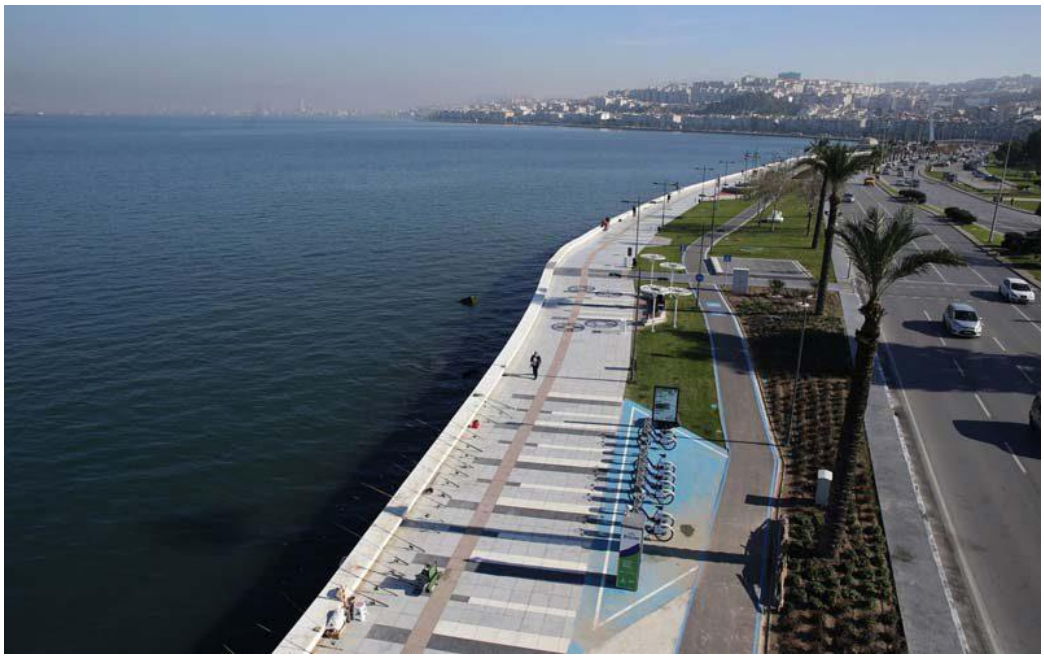
The walkway design experience with shading elements in konak city square, (Author 2023)

Another important aspect is the selection of appropriate materials and design elements for the walkways. Factors such as durability, slip resistance, ease of maintenance, and sustainability considerations play a crucial role (Appleyard et al., 1981). The choice of materials can vary from concrete and asphalt to pavers, natural stone, or recycled materials, depending on the context, aesthetics, and functional requirements of the walkway.

Experience in walkways design also involves addressing safety and security concerns. Designers must consider measures such as proper lighting, clear signage, visibility around corners, and the provision of pedestrian crossings (Newman et al., 2009). Designing walkways with sufficient separation from vehicular traffic and incorporating features like bollards, handrails, and tactile paving for visually impaired individuals contribute to enhancing safety and creating a secure pedestrian environment.

Figure 22

The aerial view around the coastal road, passport Izmir Göztepe District, (Turna, 2021)



Moreover, the aesthetic aspect of walkways design experience is vital in creating an inviting and visually pleasing environment. The use of landscaping elements, street furniture, public art, and wayfinding signage can enhance the visual appeal and identity of the walkways (Gehl, 2010). Attention to details such as colour schemes, texture, and the integration of green spaces and vegetation also contribute to creating a pleasant pedestrian experience.

To gain walkways design experience, designers often engage in site assessments, conduct user surveys, collaborate with multidisciplinary teams, and learn from previous design projects and best practices (Francis et al., 2013). It is through this iterative process of observation, analysis, and implementation that designers refine their skills and understanding of creating walkways that meet the needs and aspirations of the community.

Designing for Walkways in Urban Open Spaces

This requires careful consideration of various factors to ensure functionality, aesthetics, accessibility, and safety for pedestrians. Walkways play a crucial role in facilitating pedestrian movement, enhancing connectivity, and promoting active transportation in urban environments. Here, we will explore key design considerations for walkways in urban open spaces.

Connectivity and Network Design: Walkways should be designed as part of a comprehensive pedestrian network that connects various destinations within the urban open space and its surrounding areas. The network design should consider factors such as directness, continuity, and accessibility, allowing pedestrians to navigate efficiently and seamlessly throughout the space (Handy et al., 2002). Well-planned and integrated walkway networks promote walkability and encourage people to choose walking as a mode of transportation.

Width and Capacity: The width of walkways should be appropriate to accommodate the anticipated pedestrian flow. It should be wide enough to accommodate pedestrians comfortably, allowing for both single-file and side-by-side walking (Dowling, 2008). Considerations should be given to factors such as the expected number of users, the presence of bicycles or other wheeled devices, and the potential for future growth in pedestrian activity.

Universal Design and Accessibility: Walkways in urban open spaces should be accessible to people of all ages and abilities. Incorporating universal design principles

ensures that individuals with disabilities, seniors, and parents with strollers can navigate the walkways safely and comfortably. Features such as ramps, curb cuts, handrails, and tactile paving should be integrated to enhance accessibility (Steinfeld & Maisel, 2012).

Material Selection: The choice of materials for walkways should consider factors such as durability, maintenance requirements, aesthetics, and environmental sustainability. Common materials include concrete, asphalt, paving stones, and permeable surfaces. The selection should be based on the anticipated level of use, climate conditions, and the overall design concept of the (UOS) (Frändegård & Marsal, 2013). Additionally, incorporating green infrastructure elements, such as pervious pavements or plantings, can contribute to environmental sustainability by managing storm water runoff.

Lighting and Safety: Adequate lighting is essential for walkways in urban open spaces, ensuring visibility and enhancing safety during both daytime and night time use. Properly designed lighting fixtures should be strategically placed to provide even illumination along the walkways, minimizing shadows and creating a sense of security. Additionally, integrating safety features such as pedestrian crossings, signage, and traffic calming measures enhances pedestrian safety and encourages adherence to designated walking areas (Frändegård & Marsal, 2013).

Aesthetics and Place making: Walkways should be designed to enhance the visual quality and attractiveness of the urban open space. Considerations should be given to landscaping, street furniture, public art, and other design elements that create a sense of place and promote a positive user experience (Carmona et al., 2003). Integrating greenery, trees, and vegetation along the walkways contributes to a pleasant and inviting atmosphere.

Maintenance and Sustainability: Walkways should be designed with ease of maintenance in mind. The choice of materials, such as low-maintenance surfaces or self-cleaning materials, can reduce the time and resources required for upkeep (Dowling,

2008). Furthermore, incorporating sustainable design features, such as using recycled materials, implementing storm water management strategies, and minimizing environmental impacts, aligns with the principles of sustainable urban development.

These are of significant importance as they serve multiple purposes that contribute to the overall functionality and liveability of the urban environment. Firstly, walkways provide safe and designated paths for pedestrians, separating them from vehicular traffic and promoting pedestrian safety (Handy et al., 2002). They enhance connectivity by linking different areas within the urban space, enabling easy access to amenities, public transportation, and recreational areas (Carmona et al., 2003). Walkways also encourage active transportation and physical activity, supporting public health and reducing reliance on cars (Frändegård & Marsal, 2013).

Moreover, well-designed walkways enhance the aesthetics of urban open spaces, creating visually pleasing environments that attract people to walk and spend time outdoors (Carmona et al., 2003). They contribute to the creation of vibrant and inclusive communities, facilitating social interactions and community engagement (Carmona et al., 2003). Additionally, walkways play a crucial role in promoting sustainable urban development by encouraging sustainable modes of transportation and reducing carbon emissions (Handy et al., 2002).

Design Concepts Process of Walkways in Urban Open Spaces

Design concepts of walkways in urban open spaces refer to the principles and strategies that guide the design and construction of walkways in outdoor areas, such as parks, plazas, and streetscapes. These design concepts include factors such as accessibility, safety, aesthetics, functionality, and environmental sustainability (Lynch, K. 1981).

Figure 23

Pedestrian Pathways Perspective as the Sidewalk (Active Design Guidelines, ADG,2009)

Accessibility refers to the degree to which walkways are accessible to people of all ages and abilities, including those with disabilities. Safety refers to the degree to which walkways are safe for pedestrians, free from hazards such as tripping hazards, obstructions, and poor lighting. Aesthetics refer to the degree to which walkways are visually pleasing and harmonious with their surrounding environment. Functionality refers to the degree to which walkways are well designed for their intended use, whether it be for commuting, exercise, or leisure.

Figure 24

The Walking Path Experience along the Izmir Konak (The City Fix, 2018)

Finally, environmental sustainability refers to the degree to which walkways are designed to reduce their impact on the environment, such as through the use of sustainable materials and green infrastructure (Calthorpe, P. 1993).

Design Elements of Walkways

Design elements of walkways refer to the individual components that make up the overall design of a walkway. These design elements include factors such as width, length, curvature, slope, and surface texture (Calthorpe, P. 1993).

The width of a walkway, for example, is an important design element that can impact the number of pedestrians that can use the walkway at once, as well as the degree of separation between pedestrians and other modes of transportation, such as bicycles or cars. The length of a walkway can impact the level of physical activity that pedestrians engage in while using the walkway. Curvature can impact the visual interest and flow of the walkway, while slope can impact the ease of use and accessibility of the walkway.

Finally, surface texture can impact the level of slip resistance and comfort of the walkway (Lynch, K. 1981).

Types of Walkways

Types of walkways refer to the different forms and configurations that walkways can take in urban open spaces. Common types of walkways include sidewalks, footpaths, trails, promenades, and boardwalks (Calthorpe, P. 1993).

Sidewalks are typically found along streets and provide a designated path for pedestrians to walk alongside vehicular traffic. Footpaths are typically found in natural areas, such as parks and trails, and provide a path for pedestrians to walk through natural landscapes (Calthorpe, P. 1993). Trails are similar to footpaths but are typically longer and more rugged.

Promenades are wide, landscaped walkways that are typically found in urban waterfront areas or scenic locations. Finally, boardwalks are elevated walkways that are typically found in coastal areas or wetlands and provide access over unstable terrain (Calthorpe, P. 1993).

Materials and Finishes for Walkways

Materials and finishes for walkways refer to the different types of materials and finishes that can be used in the construction of walkways. Common materials include concrete, asphalt, brick, pavers, and natural stone. Each material has its own unique advantages and disadvantages in terms of durability, aesthetics, and cost. Concrete, for example, is durable and low maintenance but may not be visually appealing. Brick and pavers, on the other hand, are visually appealing but may require more maintenance than concrete. Natural stone is durable and visually appealing but may be more expensive than other materials (Lynch, K. 1981).

Figure 25

Minor Pedestrian Pathway in Konak City Square (Author 2023)

Finishes for walkways can include different types of textures and colors, as well as surface treatments that provide slip resistance and durability. Overall, the choice of materials and finishes for walkways will depend on factors such as budget, aesthetics, and intended use.

Factors That Contribute to User Satisfaction in Walkways

These factors can be categorized into three main dimensions: physical and environmental factors, social and cultural factors, and psychological and emotional factors.

Physical and Environmental Factors

The physical and environmental factors that contribute to user satisfaction with walkways are numerous. For instance, the width of the walkway is an important factor

that determines how many people can walk on it at a time, and how comfortable they feel.

A narrow walkway may cause users to feel cramped and uncomfortable, whereas a wider walkway can accommodate more users and provide a more pleasant experience. The length of the walkway can also affect user satisfaction, as users may prefer shorter or longer walkways depending on their preferences. The slope and curvature of the walkway are also important, as these can affect how easy it is to navigate the walkway, and how comfortable users feel while walking (Calthorpe, P. 1993).

Environmental factors such as the presence of trees, plants, and other natural elements can also enhance user satisfaction with walkways. These elements provide shade, create a natural environment, and help to reduce the impact of urban heat islands. Additionally, the quality of lighting, shade, and other environmental features can influence user satisfaction (Calthorpe, P. 1993).

Social and Cultural Factors

Social and cultural factors that contribute to user satisfaction with walkways are also important to consider. For example, the presence of other users can create a sense of community and social interaction, which can enhance user satisfaction (Calthorpe, P. 1993). However, a crowded walkway may also cause users to feel anxious and uncomfortable. The level of safety and security can also influence user satisfaction, as users may feel more at ease in a well-lit and secure environment (Lynch, K. 1981).

Cultural factors such as the design of the walkway to reflect local customs, aesthetics, and traditions can also impact user satisfaction. For example, incorporating local art or cultural motifs into the design of the walkway can create a sense of identity and pride for the local community (Leyden, K. 2003).

Psychological and Emotional Factors

Psychological and emotional factors that contribute to user satisfaction with walkways can be complex. For instance, the sense of privacy that users feel while using a walkway can impact their satisfaction. Users may feel more comfortable on a walkway that provides some degree of privacy, such as a walkway with hedges or trees lining it. The level of sensory stimulation can also affect user satisfaction, such as colors, textures, sounds, and smells. For example, using calming colors and textures can create a relaxing environment that enhances user satisfaction (Jaskiewicz, F. 2001).

Psychological factors such as the level of stress and anxiety caused by the walkway design can also impact user satisfaction. For instance, users may feel stressed or anxious if a walkway is too narrow, steep, or poorly lit. In contrast, a well-designed walkway can provide a sense of control and ownership, which can enhance user satisfaction (Calthorpe, P. 1993).

Evaluation of Walkways in Urban Open Spaces

Evaluating walkways in urban open spaces is important to ensure that they meet the needs of users and contribute to the sustainability of the surrounding environment. Evaluation can be done through a number of different methods such as user surveys, interviews, observations, and technology-based tools like GPS tracking and sensor data. Evaluation can help identify areas for improvement, inform decisions regarding future investments in walkway infrastructure, and measure the effectiveness of existing walkways (Lynch, K. 1981).

Factors that can be evaluated include accessibility, safety, comfort, and usability. Accessibility refers to how easily people can use the walkway, including factors such as the width of the walkway and the presence of obstacles. Safety includes factors such as lighting, visibility, and the presence of hazards like uneven surfaces or obstacles (Jaskiewicz, F. 2001).

Comfort includes factors like the quality of the walking surface, the availability of benches or other seating, and the presence of trees or other forms of shade. Usability includes factors like the presence of directional signage, the proximity of public transit stops, and the integration of the walkway into the surrounding built environment (Southworth, M.2005).

Tools and Methods for Evaluating Walkways

There are various tools and methods that can be used to evaluate walkways in urban open spaces. Surveys and interviews can be used to gather user feedback about their experiences using the walkway. Observations of user behavior can also provide insights into the use and effectiveness of walkways. Technology-based tools like GPS tracking and sensor data can provide additional data about how people use the walkway, including the time of day and the duration of their use (Leyden, K. 2003).

Case Studies of Walkway Evaluation in Different Contexts

Case studies can provide valuable insights into the evaluation of walkways in different contexts. By studying walkways in different cities or in different types of open spaces, researchers can identify best practices for evaluating walkways and inform decisions regarding walkway design and infrastructure investments.

For example, a case study of walkway evaluation in a busy commercial district may reveal that wider walkways or the addition of seating areas can improve user satisfaction.

Walkability Indexes and Their Applications

Walkability indexes are tools that can be used to evaluate the quality of walkways and the overall walkability of an urban area. These indexes take into account factors such as sidewalk width, intersection design, and the presence of amenities like benches or bike racks. Walkability indexes can help inform decisions regarding walkway infrastructure investments and can also be used to compare the walkability of different areas (Eboli, et al., 2023).

For example, a walkability index may reveal that a certain area has low walkability due to a lack of accessible walkways, and investments in walkway infrastructure may be needed to improve the overall walkability of the area. Walkability indexes can also be useful for policy makers in setting goals for improving the walkability of their city or neighbourhood (Hine J. 1996).

Sustainable Design Principles for Walkways

Sustainable design principles refer to a set of guidelines that promote the use of design strategies and materials that are environmentally friendly, socially responsible, and economically viable. In the context of walkways in urban open spaces, sustainable design principles can include the use of materials that are durable, low maintenance, and made from sustainable sources, such as recycled materials (Cabe, 2005).

Additionally, the principles can promote designs that incorporate natural elements, such as trees and vegetation, which can help to reduce heat and improve air quality. Sustainable design principles can also emphasize the use of renewable energy sources, such as solar powered lighting for walkways (Cabe, 2005).

Examples of Sustainable Walkway Design Concepts

1. Green infrastructure: This refers to the use of vegetation, such as trees and shrubs, to provide shade, reduce heat, and improve air quality. Green infrastructure can also help to manage storm water runoff and improve biodiversity.
2. Permeable paving: This refers to the use of materials that allow water to seep through, such as porous concrete or gravel, instead of traditional impermeable materials like asphalt. Permeable paving can help to reduce storm water run-off and replenish groundwater.
3. Low maintenance materials**:** This refers to the use of materials that are durable and require minimal maintenance, such as concrete or composite decking. Low maintenance materials can help to reduce the use of resources, such as water and energy, for maintenance and upkeep.

4. Solar-powered lighting: This refers to the use of solar panels to power lighting along walkways. Solar-powered lighting can help to reduce energy consumption and greenhouse gas emissions. Overall, incorporating sustainable design concepts and practices for walkways in urban open spaces can lead to a more environmentally friendly, socially responsible, and economically viable solution that promotes the well-being of both users and the surrounding environment.

Cultural and Demographic Influences on User Preferences

User preferences for walkways in urban open spaces can be influenced by various cultural and demographic factors. For example, individuals from different cultures or age groups may have different preferences for the design and aesthetics of walkways.

Additionally, the surrounding environment can also influence user preferences, such as the presence of nearby landmarks, natural elements, or cultural influences. Understanding these cultural and demographic factors can help to ensure that walkways are designed to meet the needs and preferences of the diverse range of users who will be utilizing them (Hine J. 1996).

Safety and Accessibility Concerns

User safety and accessibility are important factors to consider when designing walkways in urban open spaces. Walkways should be designed to ensure that users of all ages and abilities can access and utilize them safely. For example, walkways should have a flat and even surface with appropriate tactile indicators to aid those with visual impairments. Additionally, lighting and signage should be provided to ensure that users can navigate the walkways safely and efficiently, particularly in low light conditions (Cabe, 2005).

User Participation in the Design Process

Involving users in the design process of walkways in urban open spaces can lead to a more user centered design that meets the needs and preferences of the intended users. User participation can take many forms, such as surveys, focus groups, or design

charrettes. This can help to identify user preferences, needs, and concerns early in the design process, which can inform the design decisions and ultimately lead to a more successful and user-friendly walkway design (Basu, & Sevtsuk, 2022).

Overall, understanding the cultural and demographic factors that influence user preferences, ensuring safety and accessibility concerns are met, and involving users in the design process can all contribute to the development of walkways in urban open spaces that are more successful in meeting the needs and preferences of users.

Theoritical Framework

Urban Design and Planning Theories

Urban Design and Planning Theories encompass a range of theories and principles that guide the design and development of cities and urban spaces. These theories provide a framework for understanding the relationships between the built environment, social dynamics, and the overall functioning of urban areas. They consider various aspects of urban design, such as spatial organization, land use, transportation systems, aesthetics, and sustainability (Eboli, et al., 2023).

Urban design theories emphasize the creation of functional, visually appealing, and well-connected urban spaces. They explore concepts like the urban form, scale, and density, as well as the relationship between buildings, streets, and public spaces. These theories often advocate for creating mixed-use developments that combine residential, commercial, and recreational areas to foster vibrant and inclusive urban environments. The aspects of this theory that is related to this research are explained below.

Walkability

Walkability refers to the design and layout of urban spaces to prioritize walking as a mode of transportation. It encompasses factors such as pedestrian safety, accessibility, connectivity, and comfort. Walkability theories emphasize the importance of creating pedestrian-friendly environments that encourage physical activity, reduce reliance on motorized transport, and enhance the overall livability of urban areas. The

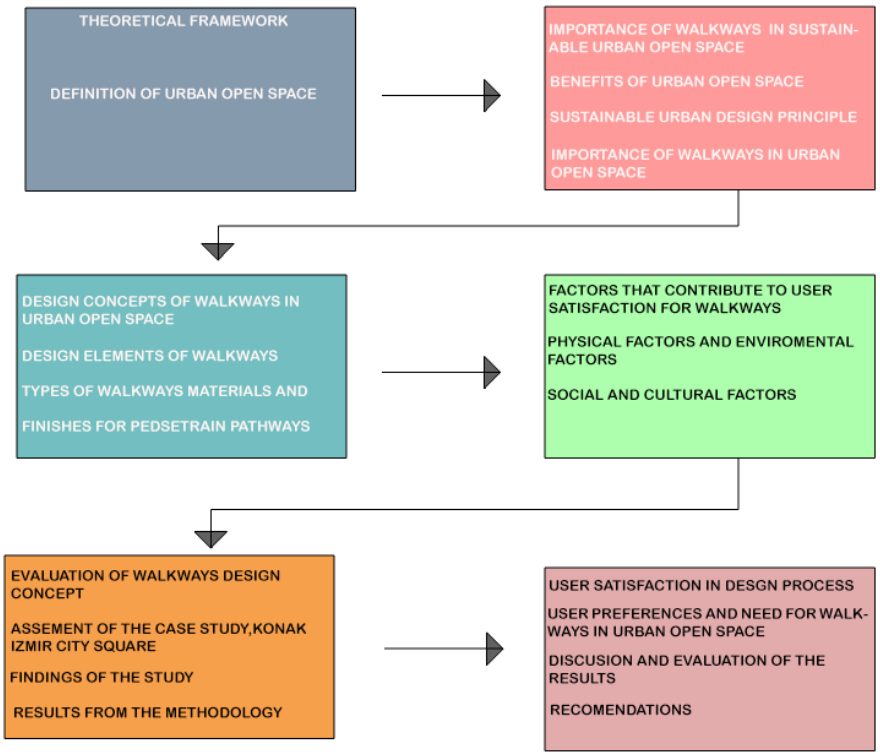
concept involves designing well-connected and continuous walkways that are accessible to all users, including pedestrians with disabilities. By integrating walkability principles into the design of urban open spaces, such as parks and plazas, the research can examine how walkways contribute to user satisfaction and the overall urban experience (Bellizzi, et al., 2021).

Sustainable Urban Design

Sustainable urban design theories focus on creating cities that are environmentally, socially, and economically sustainable. They emphasize the integration of green infrastructure, renewable energy sources, and eco-friendly materials in urban planning and design. Sustainable urban design aims to minimize the environmental impact of urban development while enhancing the quality of life for residents. In the context of walkway design, sustainable principles can guide the selection of materials that are durable, low-maintenance, and environmentally friendly. Additionally, incorporating green elements, such as vegetation and water features, along walkways can improve air quality, provide shade, and enhance the aesthetic appeal of urban open spaces (Bellizzi, et al., 2021).

Figure 26

The Conceptual Theoretical Framework (Author 2023)



Theoretical frameworks provide guidance for selecting appropriate research designs, methodologies, and data analysis techniques. They help researchers identify suitable instruments or tools for data collection and provide a basis for making informed decisions about research methods.

Related Research

The Role of Pedestrian Streets in Sustainability of Urban Spaces, Case Study: Tarbiyat Street, Iran (Arash Saghafi Asl, et, al. 2012)

The role of pedestrian streets in the sustainability of urban spaces is a topic of interest for creating livable and environmentally friendly cities (Pakzad, 2007). The case study of Tabriz Tarbiyat Street in Iran can provide insights into how pedestrian streets contribute to sustainability (Bahrainy, 1998). First of all, the Historical and Cultural Significance, Tabriz Tarbiyat Street is a historical and culturally significant street in Tabriz, Iran. Its historical buildings and architectural heritage contribute to the cultural identity of the city (Woolley, 2003). Preserving and promoting the cultural significance of the street can enhance its sustainability by fostering a sense of place and promoting cultural tourism (Broadbent, 1990). On the other hand, the street is facing some major issues that is mostly base on the cultural significant of the area and also with the limited Accessibility, Tabriz Tarbiyat Street may face challenges related to accessibility, such as limited parking spaces or inadequate public transportation options (Pakzad, 2007). This could make it difficult for people to access the street, potentially impacting its attractiveness and usage (Pakzad, 2007). Limited Flexibility for Expansion: Due to its location within the historical fabric of Tabriz, Tabriyat Street may have limited space for physical expansion or redevelopment (Frey, 1999). This constraint could limit opportunities for accommodating increased pedestrian traffic or implementing new design elements (Woolley, 2003). furthermore, in the process of analyzing which is related studies to recognize Tarbiyat Street as an old and valuable (UOS) in Tabriz can provide insights into its strengths, weaknesses, opportunities, and threats (SWOT). Inadequate Management and Governance: The lack of effective management and governance practices for Tarbiyat Street could hinder its sustainability (Broadbent, 1990). Insufficient coordination among stakeholders, inadequate maintenance regimes,

or a lack of clear regulations and guidelines for development could undermine the street's long-term sustainability (Broadbent, 1990). On the other hand, Social Cohesion of pedestrian streets like Tabriz Tarbiyat Street have the potential to foster social cohesion and community engagement (Pakzad, 2007). The street's role as a gathering place for residents and visitors can facilitate social interaction, community events, and cultural activities (Williams, 2007). Encouraging public participation and involving local communities in the street's planning and management processes can contribute to its sustainability by strengthening social bonds and a sense of ownership (Frey, 1999).

Figure 27

Oldest Street of Tarbiat Street in Iran (Tripadvisor, 2021)

Findings

I. Based on the SWOT analysis, the difference walker's users usually tie the pathway has the potential to preserve sustainability through duration, which play a significant role in sustainable transportation systems, which as well as influence the durability and sustainability of urban landscapes.

II. The emergence of new commercial developments or shopping centers in other areas of Tabriz could initially draw customers and businesses away from Tarbiyat Street which as the result of this, increased competition pose a threat to the vitality and economic sustainability of the street.

III. Depending on the surrounding road network, Tabriz Tarbiyat Street usually experience traffic congestion, especially during peak hours. This congestion

effects the pedestrians' pathways, which later create noise and air pollution, and affect the overall pedestrian experience.

Recommendations

This are the major recommendation for Tarbiyat Street according to the major issues surrounding the street area

I. First of all, the implementation strategies to preserve and conserve the historical buildings and cultural heritage along Tabriz Tarbiyat Street. This may involve restoration efforts, adaptive reuse of buildings, and guidelines for maintenance and conservation.
II. Introduce green spaces, public art installations, and amenities like water fountains or rest areas to enhance the attractiveness and functionality of Tabriz Tarbiyat Street as a public space.
III. Integrate sustainable design principles into the development and redevelopment of Tabriz Tarbiyat Street. This can include incorporating green infrastructure, energy-efficient lighting, sustainable materials, and water management systems.
IV. Enhance the infrastructure of Tabriz Tarbiyat Street, including sidewalks, lighting, seating areas, and signage. Ensure that the street is accessible, safe, and comfortable for pedestrians of all ages and abilities.

Post Occupancy Evaluation and User Satisfaction in Urban Open Space Case Study Area, Trabzon Turkey (Özkan, D. G. et, al.2015)

The aimed to enhance period of time people spent using urban open spaces by evaluating planned surroundings through a subsequent assessment of occupancy evaluation. Given that the subject of the research concentrated on urban open spaces, it was decided to choose an area that is significant with regard to the city of Trabzon as the area to be examined (Madanipour,1999). In order to determine what influences the degree of area use, the availability of area entities featuring different features in the subject area had to be taken into considerations.

Because Trabzon is a coastal city with dwindling coastline implementation empty areas, it was supposed to enhance the function basic Trabzon coast (between Ganita tunnel and the borders of Beşirli), who's conceptual design was designed and inaugurated, therefore this geographical area was chosen as the focus region (Madanipour, 1999). The methodology used in the study centered on geographical assessment, which depends on physical well-being perseverance, combined surveys, that are rely on user evaluations. Performance-based analyses have been carried out using the survey technique, and the goal of reaching a result through a comparison of user demands with physical information (Madanipour,1999).

Figure 28

Undergoing vision project in Trabzon Turkey (Trabzon Municipality, 2021)

Findings

I. The result that is based on the survey method technique that is related to the visit characteristics of the users is very high which this shows how frequently the users mostly attended the study area.

II. The percentage of usage based on the (UOS) of the study area of Trabzon is the highest among the others region.

III. According to the result that is related to user satisfaction and performance relationship in urban open space, Trabzon coastline region is being identified as nice space according to the level of sustainable open space.

Recommendations

I. In order to rise up the amount of usage of (UOS) in Trabzon coastline, the concept design approach should be aware of the sustainable urban growth facilities for a quality of life.

II. In the space whereby the users are less in terms of user's participation, an extra activity should be allocated or establish for user's satisfaction.

III. Some of the space for the user's satisfaction should be well constructed for easy sustainable accessibility of the users.

CHAPTER III

Methodology

The methodology section of this research provides a concise overview of the approach and techniques utilized to gather and analyze data pertaining to the evaluation of walkway design concepts for user satisfaction in sustainable urban open spaces. It serves as a roadmap that outlines the systematic procedures employed, ensuring the reliability and validity of the study. The research design employed a mixed research methodology, combining qualitative and quantitative approaches to gain comprehensive insights into user perceptions and satisfaction levels. The primary data collection method involved the distribution of questionnaires to a representative sample of users in the case study area of Izmir Konak. The questionnaire was designed to capture user feedback regarding the existing walkway design, their satisfaction levels, and suggestions for improvement. To ensure the sample's representativeness, a purposive sampling technique was employed, targeting individuals who frequently utilize the urban open spaces in Izmir Konak.

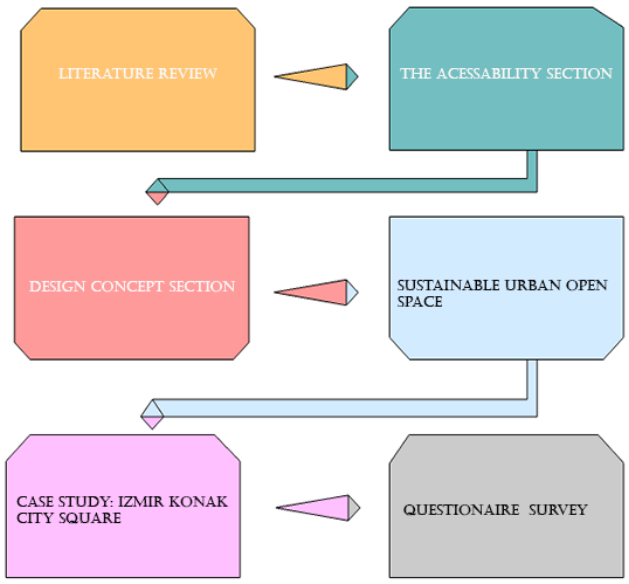
Research Design

The research design for this study employs a mixed methodology, incorporating qualitative and quantitative approaches. Qualitative methods include on-site observations and user interviews to gather in-depth insights into walkway design and user experiences. Quantitative methods involve administering questionnaires to a representative sample of users, providing statistical data on user satisfaction and perceptions. This mixed approach ensures a comprehensive understanding of walkway design evaluation and user satisfaction in sustainable urban open spaces, maximizing the strengths of each method. The research design is carefully planned to align with the research objectives and questions, considering practical constraints such as time which takes about 4 months times from February to May to collect all the data responses. Furthermore, the questionnaire is divided into four sections, these sections include the basic/general information, (1-6) and the accessibility section part (7-17) and the design

concept (17-36), while the last part of the questionnaire is the satisfactory section related to sustainable urban open space (37-43) and this make the total number of 43 questions for the respondents to respond.

Figure 29

Research Design



Population and Sample

The population for this study consists of individuals who frequently utilize the urban open spaces in the case study area of Izmir Konak. The selection of the sample was done using a purposive sampling technique, which involved purposefully selecting participants who represent the diverse range of users in terms of age, gender, occupation, and frequency of use. This approach ensures that the sample captures a comprehensive perspective of user satisfaction and experiences with the walkways in sustainable urban open spaces. The sample size was determined based on considerations of statistical power and representativeness. A sufficient number of participants were included to obtain a robust dataset for analysis while maintaining practical constraints such as time and resources. By targeting users who regularly engage with the urban open spaces in Izmir Konak, the research aims to gather insights from individuals who have direct

experience with the walkway design and can provide valuable feedback. This approach enhances the relevance and applicability of the findings to the target population. It is important to note that while the sample is representative of the user population in Izmir Konak, the findings may not be generalized to other urban open spaces or different geographic contexts. However, the research design ensures that the sample is sufficiently diverse and representative within the specific context of the study area. The study successfully collected a substantial number of 224 responses through the comprehensive questionnaire survey.

Data Collection Tools / Materials

The primary data collection tool used in this research study was questionnaires. The questionnaires were designed to gather quantitative data on user satisfaction and perceptions of walkway design concept in sustainable urban open spaces. The questionnaire consisted of structured questions, including Likert scale items, multiple-choice questions, and open-ended questions. These questions were carefully crafted to capture various aspects related to walkway design, such as width, accessibility, aesthetics, safety, and overall satisfaction. The questionnaires were administered to a representative sample of users in the case study area of Izmir Konak, through online platforms. The collected questionnaire data was then subjected to quantitative analysis, including descriptive statistics and data interpretation. The questionnaire tool served as a reliable and practical means to gather user perspectives and insights, enabling the research to assess user satisfaction levels, identify areas for improvement, and generate valuable findings for enhancing walkway design in sustainable urban open spaces. The first data that was collecting in the questionnaire is the basic/general information about the respondent (i.e., Gender, Age, Occupation, etc.) which is also the first part of the findings, tables were used to indicates the results from this part in order to gather the general data information about the respondents, while the second part of the data collection tools according to the questionnaire is the accessibly of the study area (i.e., Connectivity of public services and public space, General pedestrian accessibilities, etc.) and design concept is the third part of data collection based on the questionnaire which contains (i.e. current environment, levels of ramps design and sustainable design concept

etc.) and the last part is the sustainable urban open space concepts which consist of (i.e. cultural activities, social interaction, and physical environments) and the whole data collection was able to gather over 224 responses according to the questionnaire survey.

Data Collection Procedures

Data collection for this research study involved distributing questionnaires to previous school colleagues, some residents of the city, and also some friends who had been in the square area of the case study. The questionnaires were designed to gather data on user perceptions of walkway design and satisfaction levels. By distributing the questionnaires with some of the school colleagues in the city of Izmir, the research aimed to reach a wide range of participants and collect data from various user groups. This approach ensured the collection of robust and diverse data throughout the study period of the research study. Participants were able to conveniently access by sending the questionnaires and also provide their feedback, contributing valuable insights into their experiences and suggestions for improving walkway design in sustainable urban open spaces. The questionnaires facilitated efficient data collection, and also allowing for a large sample size and ensuring that data could be collected consistently and systematically. Overall, the data collection procedures focused on capturing user perspectives and experiences through the questionnaires, providing a comprehensive understanding of user satisfaction and perceptions related to walkway design in sustainable urban open space in the case study area.

Data Analysis Procedure

The data analysis procedure involved both qualitative and quantitative approaches. The visual survey and observation data were analysed descriptively, considering established indicators and users' responses. The questionnaire data were analysed using numerical calculations, such as percentages, means, and standard deviations. The findings were presented using diagrams, figures, photographs, tables, and charts to enhance visual representation. Detailed explanations accompanied the visual elements to provide further insights. The data analysis process focused on deriving meaningful interpretations and patterns from the collected data.

CHAPTER IV

Findings and Discussion

This chapter presents the findings of the research study on the evaluation of walkway design concepts in sustainable urban open spaces. It provides an overview of the key findings and their implications, based on the analysis of data collected through questionnaires administered to park users and residents. The chapter also includes a detailed discussion of the findings, highlighting user perceptions of the current walkway design, areas for improvement, and the relevance of urban design theories. The implications of the findings for urban planning and design practices are considered, emphasizing the importance of user-cantered approaches and sustainable design principles. Overall, this chapter offers valuable insights into user satisfaction with walkway design in urban open spaces, informing strategies to enhance the quality and sustainability of these environments.

Case Study: Konak Square, İzmir City

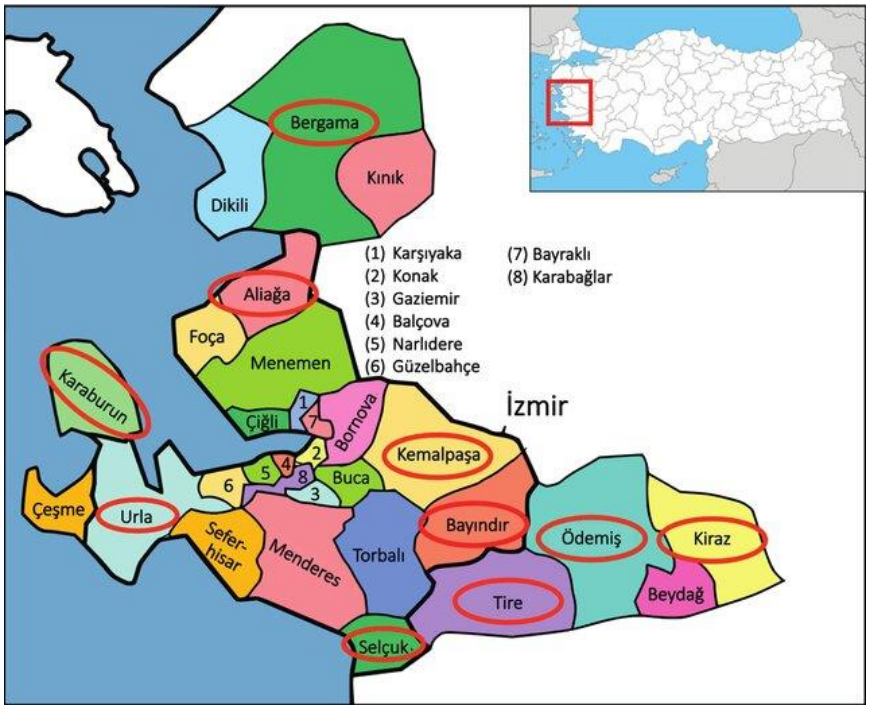
Izmir is a city located on the western coast of Turkey. It is the third-largest city in the country and serves as an important economic and cultural hub, Izmir is situated on the Aegean Sea, making it a coastal city with access to beautiful beaches and a Mediterranean climate. Based on history the city has a rich history dating back thousands of years. It was known as Smyrna in ancient times and has been influenced by various civilizations, including the Greeks, Romans, Byzantines, and Ottomans.

Culture and tourism, the city is renowned for its vibrant cultural scene and historic sites. Izmir features numerous museums, galleries, theatres, and festivals, attracting both local and international visitors. Popular tourist attractions include the ancient city of Ephesus, the Agora of Smyrna, and the Clock Tower in Konak Square. Also, in terms of transportation, Izmir has a well-developed transportation infrastructure. It is served by Adnan Menderes Airport, which offers domestic and international flights. The city also has an extensive public transportation system, including buses, metro, and ferry services.

Izmir boasts numerous public squares, parks, and also Konak Square, located in the heart of the city, is a popular gathering place known for its iconic Clock Tower and panoramic views of the bay (Yar, 2020).

Figure 30

Map of Izmir with Some District's Regions of the Area (Altintas et al., 2021)



Konak Square

Konak Square is a significant public square located in the heart of Izmir, which is situated in the Konak district of Izmir, which is the city centre and a bustling area with various commercial, cultural, and historical landmarks. Furthermore, the iconic clock tower is one of the main attractions in Konak Square, the Clock Tower (Saat Kulesi), which has become a symbol of Izmir. The tower was constructed in 1901 and stands tall at the western end of the square.

According to the Pedestrian Friendly urban open space, Konak Square is designed as a pedestrian friendly area, allowing visitors to explore the square and its surroundings on foot. It offers a lively atmosphere with various shops, cafes, and

restaurants. For some reasons konak city square is surrounded by some government buildings which includes the Izmir governor's office and the konak municipality buildings and also these buildings add to the significance and administrative importance of the square (Yar, 2020).

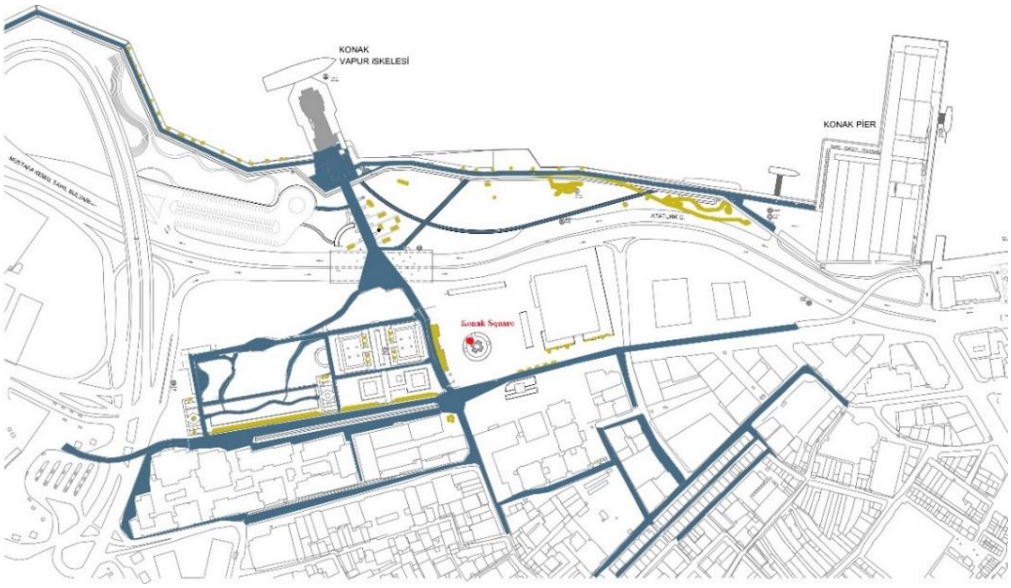
In terms of transportation hub, Konak city square serves as a transportation hub, by providing access to various modes of transportation. It is well-connected to other parts of Izmir through bus and metro stations located nearby, while for cultural and social events, Konak Square is a venue for various cultural and social events throughout the year. Festivals, concerts, exhibitions, and public gatherings often take place in the square, adding to its vibrant atmosphere.

For the reason of the seaside of Konak city Square, visitors can enjoy beautiful views of the Aegean Sea, creating a pleasant and picturesque setting moreover to the historical significance, Konak Square holds historical importance as it has been a central gathering place for the people of Izmir for many years. It has witnessed significant events and has been a focal point for social and political activities. Konak Square is an iconic and bustling area in Izmir, attracting both locals and tourists alike. Its central location, historical landmarks, and lively atmosphere make it a popular destination within the city. (UOS) serves as a social interaction around Konak City Square, which is a public space that encourages social interaction and community engagement. People gather in the square to meet friends, enjoy outdoor activities, or simply relax. Konak City Square holds symbolic value for the people of Izmir, representing civic pride and unity. The square's prominence in the city's landscape fosters a sense of belonging and attachment to the community. Overall, Konak City Square is an important area in Izmir due to its historical, cultural, administrative, and social significance. It serves as a focal point for the city's identity, fosters community engagement, and contributes to the overall livability and vibrancy of Izmir. While primarily a paved area, Konak City Square incorporates green elements, including trees and landscaping, enhancing the aesthetic appeal and providing a sense of nature within the urban environment. The greenery contributes to the visual attractiveness of the open space (Yar, 2020).

In summary, Konak City Square serves as an urban open space that provides recreational, cultural, and social opportunities for the community. It contributes to the city's identity, serves as a meeting point, and offers a visually appealing and accessible space for various activities. Konak City Square has witnessed significant historical events. During the Turkish War of Independence in the early 1920s, the square was a focal point for demonstrations and gatherings supporting the resistance movement led by Mustafa Kemal Atatürk (Yar, 2020).

Figure 31

Site Plan Map of Konak City Square (Author, 2023)



Questionnaire Results

The questionnaire result of the respondents in the study area of Konak City Square as a case of study has the total amount 224 participant collectively, which they actively responses to the given questionnaire which contains 43 questions in total which mostly all the questions are able to be answered respectively. After taking the responses from the respondents, then the result was initial arrange accordingly for the easy evaluating the walkway design concept for user satisfaction in sustainable urban open space.

Demography

Basically, the main demography of this research study is to indicate the amount figures of the respondents which as the result of this the participant highly contribute to the research study findings in the entire research. Moreover, it also represents the differentiations of the user's nature by their gender, daily activities, occupation and their disabilities and imperatives in the case study area of konak city square. This demography helps this research study and research question in terms of gathering some data variables, percentage and frequencies. The total population of number of the responses from the research study is two hundred and twenty-four (224) responses from the participants. According to the first question under the basic information section in the survey questionnaire research study is the gender of the respondents.

The first Table below is from the basic and general information of the respondents which include some basic details about the respondents.

The Basic and General Information Section

Table 1

Section A: The Gender of the Respondents

Gender of the Respondents		Frequency	Percentage	
Gender	Male	106	52.5%	Total
	Female	118	47.5%	
Total		224	100%	

(Table 1) above indicates the percentage and the frequency number of both genders between male and female which has the total number of 224 respondents. Moreover, from this result the females have the highest percentage of (52.5 %) and also with the frequency of (118) from the respondents while the male has the lowest percentage of (47.5%) along with the frequency of (106) respectfully.

Table 2

The Age Range Respondents

Age Range of The Respondents		Frequency	Percentage
Age Range	18-30	57	25.1%
	31-40	114	51.1%
	41-50	44	19.7%
	61 Above	9	4%
Total		224	100%

For the age range of the respondents which is the second question in the research study from the basic information section in the questionnaire results. (Table 2) above shows the age range of 18-30 has over (25.1%) percentage of respondents and with the frequency number of 57 and while for the age range of 31-40 has the highest percentage number of (51.1%) also with the frequency number of 114 respondents while from the age range of 41-50 has below percentage of (19.7%) and with the frequency number of 44 respondents. Lastly from the age range of 61-above has the lowest percentage of (4%) and with the frequency of 9 respondents.

Table 3

The Continent Origin of the Respondents

Continent of the Respondents		Frequency	Percentage
	Africa	57	26%
	Europe	117	53.8%
	North America	12	4.5%
	South America	9	3.6%
	Australia	7	2.7%
	Middle East	13	5.8%
	Asia	9	3.8%
Total		224	100%

According to the research study questionnaire the next result from the basic information section is which is the continents origin of the respondents which is shown

from the (Table 3 Above). First of all, among the first continents is Africa which has the percentage of 26% and with the frequency of number of 57 respondents. Secondly, the European continent has the highest percentage of 53.8% with the frequency number of 57 respondents.

Thirdly the North America has below average with the percentage of 4.5% and with the frequency number of 12 responses, and South America also has the percentage of 3.6% and the frequency number of 9 respondents respectively. Moreover, Australia has the percentage of 2.7% with only 7 respondents, while Middle East consists of 5.8% with the number of 13 respondents. Lastly, Asia has the same percentage of with South America with percentage of 3.6% and with the number of 9 respondents.

Table 4

The District Province in Izmir

District Province of The Respondents	Frequency	Percentage
Konak	55	24.7%
Bornova	50	22.4%
Buca	18	7.6%
Karşyaka	44	19.7%
Goztope	40	17.9%
Others	17	7.6%
Total	224	100%

The district province is the next result data from the respondents which also indicates the district location of the respondents which is shown from (Table 4) above, firstly, Konak district has the highest percentage (24.7%) and with 55 responses from the users, while Bornova is the second largest with the percentage of (22.4%) and with 50 respondents while Buca has the percentage (7.6%) with frequency number of 18 responses collectively, moreover Karşyaka has the percentage of (19.7%) with 44 responses which is the third largest percentage among the other responses result. To sum up, Göztepe has the percentage of (17.9%) and also with 17 respondents while others

have the percentage of (7.6%) with also 17 responses. From this table result, Konak has the highest percentage of respondents while Buca and others has the lowest percentage number of respondents respectively.

Table 5

The Occupations Status

Occupation Status of The Respondents		Frequency	Percentage
	Employed	59	26.5%
	Unemployed	57	25.6%
	Student	91	40.8 %
	Others	17	7.2%
Total		224	100%

Furthermore, the occupation status is also an important response from the respondents which is shown from (Table 5 above). Firstly, the employed status figures have (26.5%) percentages with also 59 responses from the respondent's users. Furthermore, the unemployed status has (25.6%) percentage with also 57 responses, while the student status has over (40.8 %) percentage with also over 91 responses from the respondent which is the highest number of responses in the table. Lastly, the others have the lowest percentage of (7.2%) with 17 responses from the respondents.to sum up, from this table the student status has the highest variables while others have the lowest percentage status.

Table 6

Any Impairment or Disability

Impairment or Disability of The Respondents		Frequency	Percentage
	Yes	86	38.4%
	No	138	61.6%
Total		224	100%

In addition, the impairment or disability responses from the respondents is also a crucial responses data collection of the users in the study area of Konak City Square which the result response's is shown above in (Table 6) collectively. First of all, the respondents that answered yes has the percentage of (38.4%) with also 86 responses from the respondents' users while the percentage of respondents that answered no is over (61.6%) with over 138 respondents respectively. Lastly the percentage of the respondents that answered no has the highest figures than the respondents that answered yes.

Table 7

How often do you use or go through Konak City Square

How often do you use or go through Konak City Square	Frequency	Percentage
Daily	63	28.3%
Weekly	56	25.1%
More than once a week	54	23.8%
Monthly	34	15.7%
Rarely	17	7.2%
Total	224	100%

(Table 7) Above, is the last question from the basic information section which indicates how many times the respondents usually visited or pass through the research study area of Konak city square with their responses. First of all, the respondents that usually visit the study area daily has the percentage of (28.3%) with also 63 responses from the users' respondents, while for the users that goes weekly is about (25.1%) percentage with also over 56 responses collectively. furthermore, the users' respondents that usually visit more than ones in a week has also over (23.8%) with also over 54 responses from the users, moreover the monthly users who usually visit the study area is about (15.7%) percentage with also 34 responses while for the rarely users have the lowest percentage of (7.2%) with also only 17 responses from the respondents.to sum up

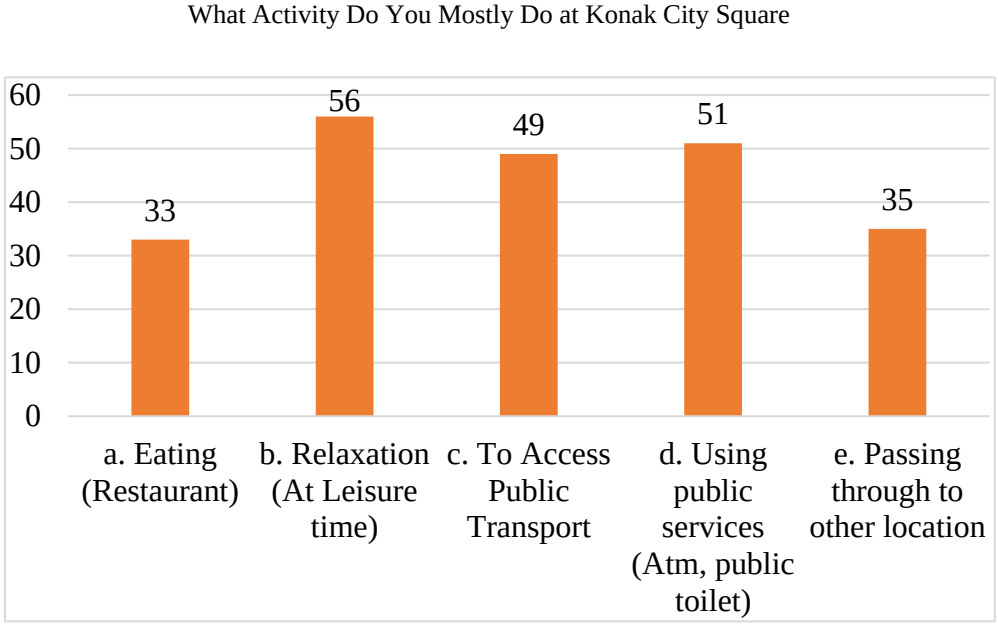
from this table the daily respondents are the highest while the rarely users are the lowest from the responses.

Based on the research study questionnaire the accessibility section is the next part which has some responses from the respondent according to the accessibility of the research study area. This following section contain some different kind of charts and figures for the data collection responses. (Figure 31) below indicate the of activity that the respondent usally do when they visit the ressearch study area of konak city square.

The Acessibility Responses Section

Figure 32

Activity of Respondents in Konak Square

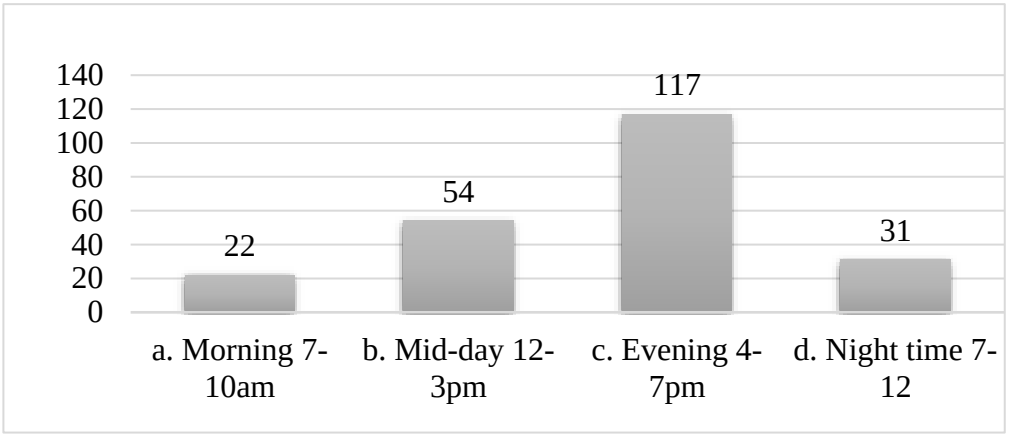


First of all,the first activity is eating at the resturant which has (33) responses from the respondents,secondly the next activity is relaxation at leisure time which has (56) responses from the users.thirdly it's the access of public transport which also has (49) responses from the respndents while using the public services like the atm and public toilets has (51) responses respectively.to sum up,passing through to other location

has also (35) responses from the users,and this shows that relaxation on leisure time has the higest responses while eating at the resturants has the lowest responses collectively

Figure 33

Time Schedule to Access Konak City Square



According to (Figure 33) above the responses from the time that mostlly the users of prefer to go to the study arae,which that indicates the time that the respondents prefer to acesss the research study area of konak city square,which their reponses.first of all,the respondents that usally go to the research study area in the morning 7-10am has (22) responses and also the users that prefer to around the mid-day 12-3pm has over (54) responses.futhermore the usersthat prefer to go to the reseach study area around the evening time 4-7pm has over (117) responses while the users that prefer to go to the reseach study area during the night time 7-12pm has only (31) responses.to sum up,the users that prefer to go to the study area around the evening time 4-7pm has the the highest amonut of responses and durring the morning time has the lowest amount of number collectively.

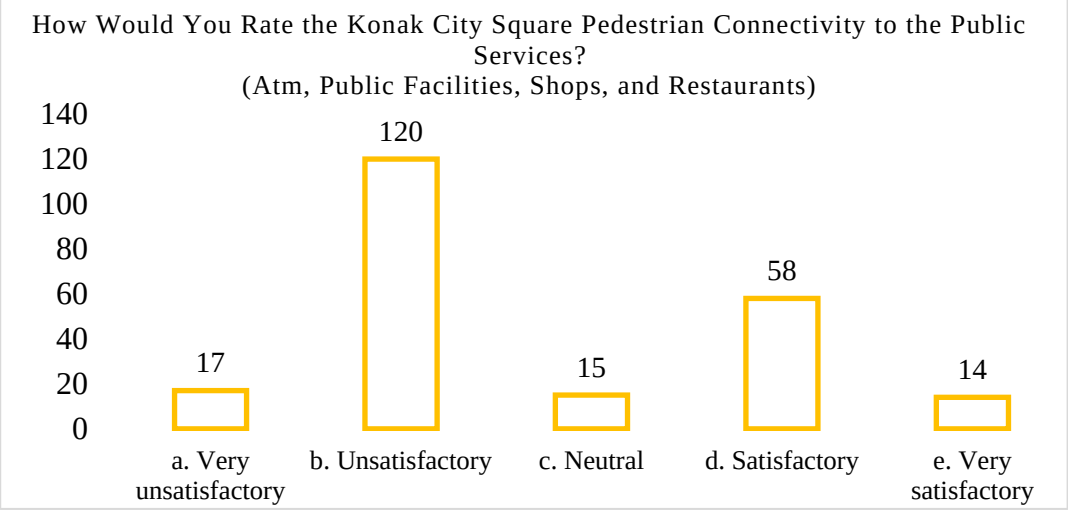
Among the results of the research study area of konak city square which has another responses that indicates the challenges of the pedestrain acess to the area.first of all,the respondents that respond to the pavement and application has over 26 responses

which is (11.7%) percentage while the respondents that response to directory panel has 22 responses which also has (9.5%) precentage.secondly for over crowding also has 50 responses from the users which is also (23%) percentage.Moreover the respondents that response to the levels and zebra crossings(street crossing) has 45 responses from the respondents with (19.4%) percentage collectively while the ramp and stairs has also 25 responses with (11.3%) percentage.lastly for the others has over 56 responses with also (25.2%) percentage respectively.

Another result from the respondents is how conviently the acessability of elder person and with disability which the users that respond this with strongly agreed are 22 with (9.4%)percentage and for the agreed the respondents has over 77 responses with (34.5%),neutral has 31 responses with (13.9%),disagreed with 61 responses and also with (27.4%) ppercentage while strongly disagreed has 33 responses with (14.8%) percentage respectively.

Figure 34

Connectivity to Public Services in Konak City Square

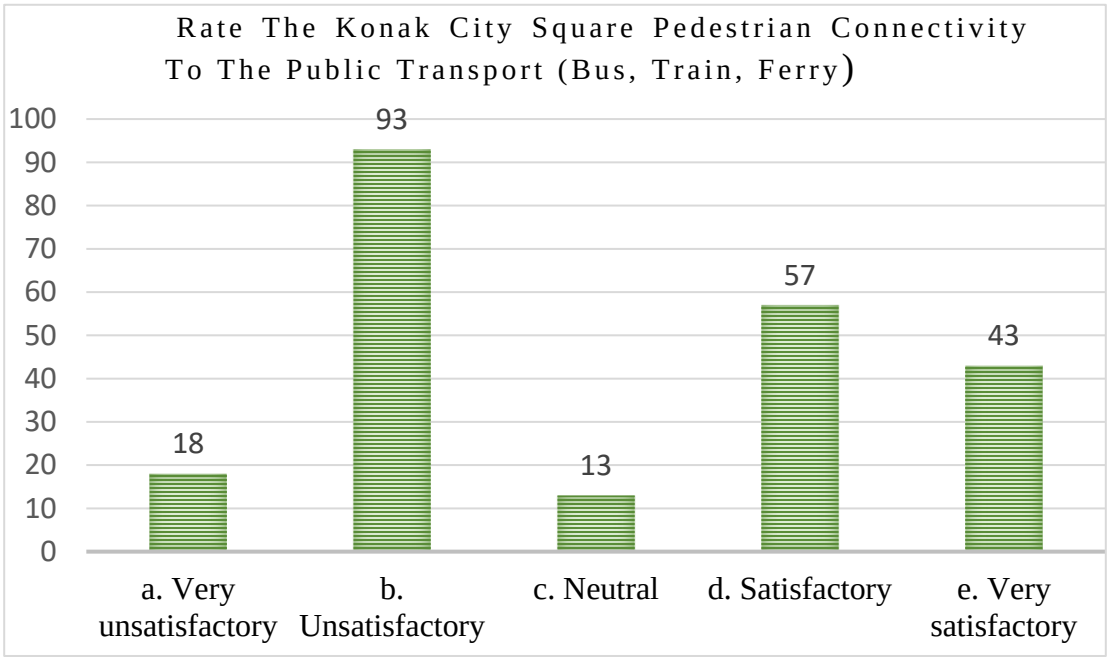


Meanwhile, (Figure 34) above, is also based on the acessability and ratting responses result from the users which is related on how would you rate the pedestrain connectivity to the public services like the Atm machines,public facilities,shops and

resturants.First of all, the response from the very unsatisfactory has about (17) responses, while unsatisfactory has over (120) responses from the respondents and the next responses is the neutral which has only (15) responses from the respondents, the satisfactory response has (58) responses, also the very satisfactory has only (14) responses effectively. From the charts result responses, the highest responses are unsatisfactory and while the lowest responses are very satisfactory.

Figure 35

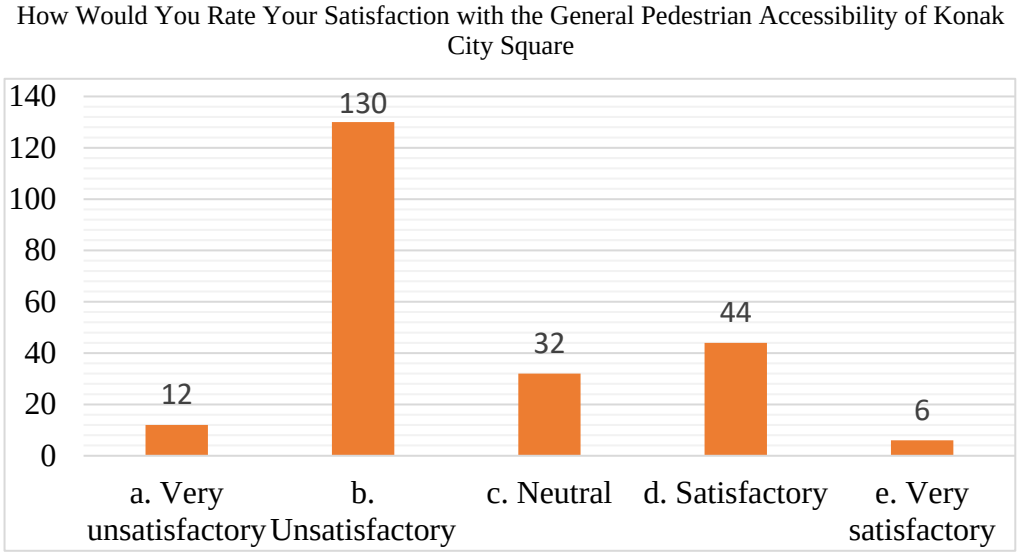
Pedestrian Connectivity to the Public Transport in Konak City Square



While the above (Figure 35) is also a rating response based on the accessibility of the research study area of konak city square, the responses s is based on Pedestrian Connectivity to the Public Transport (Bus, Train, ferry,) in Konak City Square. Firstly the very un satisfactory has only (18) responses while for unsatisfactory is (93) responses,neutral has only (13) responses from the respondents,satisfactory has (57) responses,and very satisfactory has (43) responses from the respondents.from this result also the unsatisfactory is the highest while neutral has the lowest number of responses from the respondents.

Figure 36

General Pedestrian Accessibility of Konak City Square



Futhermore the general pedestrain acessability of Konak city Square is the next responses from the results which is shown above in (Figure 36). To start with, the very unsatisfactory has only (12) responses from the respondents which is equivalent to (5.4%) percentage, while unsatisfactory has over 130 responses with the estimate percentage of (58.4%), neutral has 32 responses with the percentage of (14%), satisfactory has also 44 responses' with (19.9%) percentage while very satisfactory has only 6 responses with the percentage of (2.3%). from this result responses the unsatisfactory has the highest number of responses and very satisfactory is the lowest responses from the user's respondents.

Nevertheless, the responses based on pedestrian connectivity to the historical site of the area is the next responses from the respondents collectively. First of all, the very unsatisfactory has over 13 responses with (5.8%) percentage, unsatisfactory over 120 responses with (53.8%) percentage, neutral has 25 responses with (11.2%) percentage, while satisfactory has 59 responses with (26.5%) percentage, while very satisfactory has only 6 responses with (2.7%) percentage which is the lowest responses from the result.

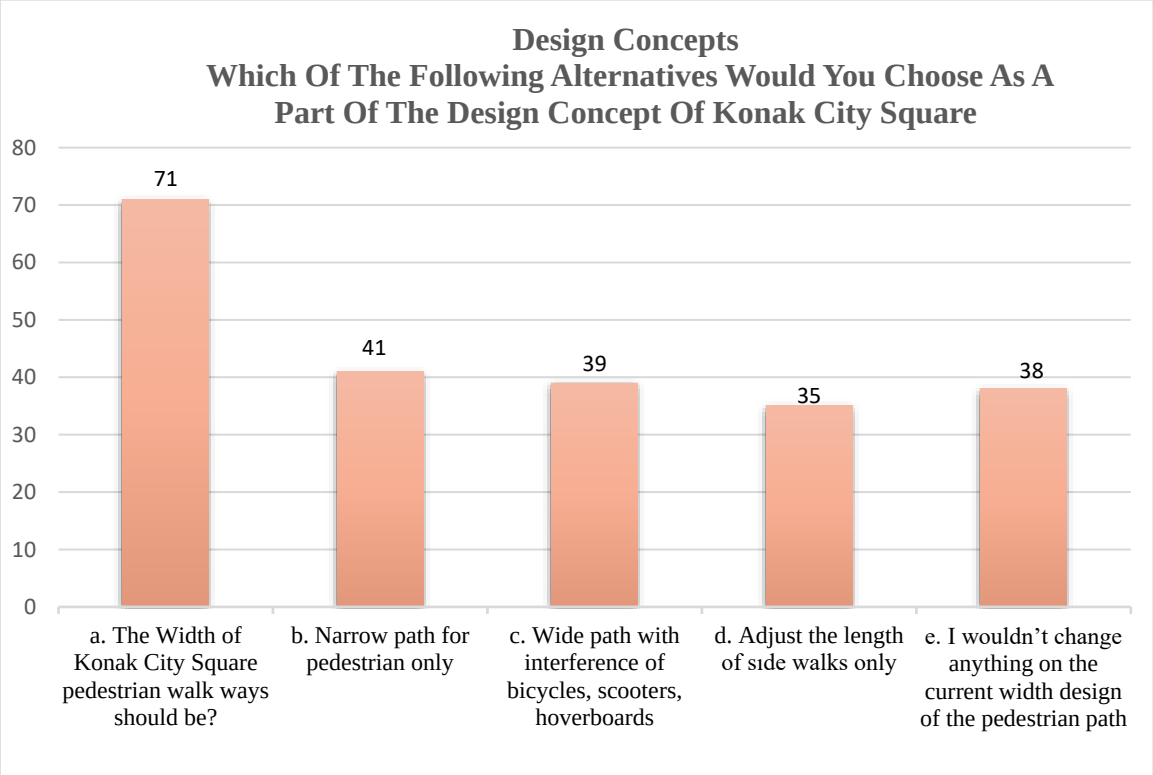
The result from rating Konak city square according to the connectivity to the old bazaar market (kemealti) which has the responses results collectively. firstly, the very satisfactory has only 14 responses with (6.3%) percentage, while unsatisfactory has over 138 responses with (61.4%) percentage, neutral has 29 responses with (13%) percentage, satisfactory has also 40 responses with (17.9%) percentage. Lastly the very satisfactory has only 3 responses with (1.3%) percentage which is the lowest responses from the respondents.

The next section is the design concept which contains multi- choice option and with the mix of agreed and disagreed responses from the respondents, which stated the result data according to the design concept of the research study area of konak city square.

The Design Concept Responses Section

Figure 37

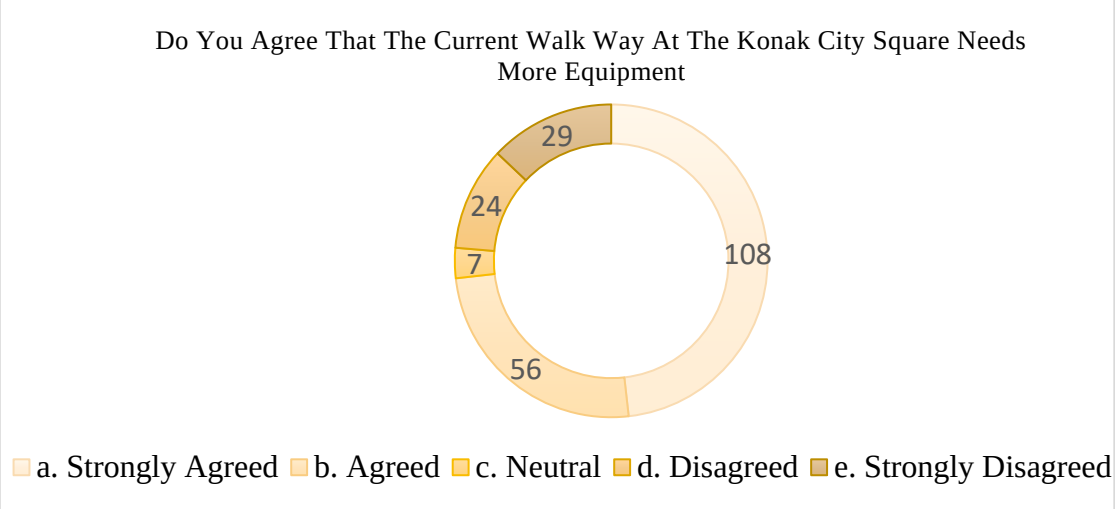
The Result of Design Concepts of Konak City Square (Author, 2023)



The design concept is the next responses from the respondent which stated the result of alternatives to choose as a part of the design concept in the study area shown in (Figure 37) above. First of all, the width of konak city pedestrian walkways should be (71) responses, narrow path for pedestrian only has (41) responses, wide path with interference of bicycles, scooters, hover boards have (39) responses, adjustment of length of the side walk only has (35) responses, I would not change anything on the current width design of the pedestrian path has only (38) responses. The highest responses are the narrow path for pedestrian while adjustment of the length of sidewalk has the lowest response.

Figure 38

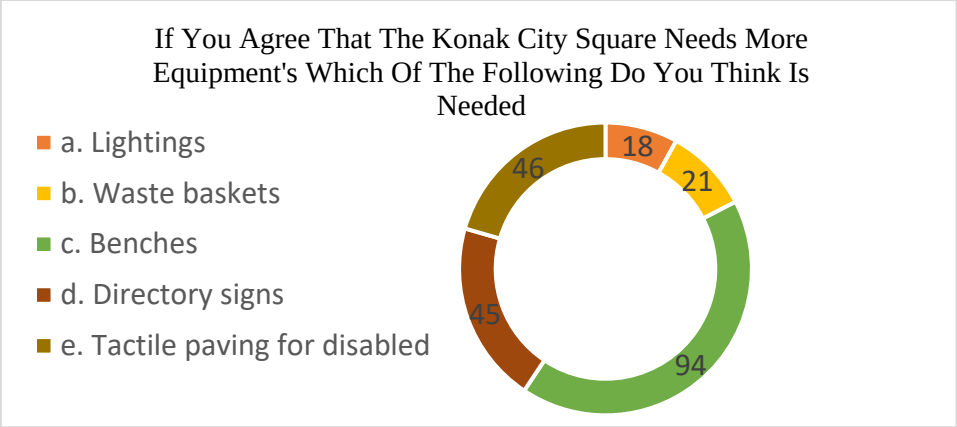
Current Walkway of Konak City Square Respondents



Futhermore, the next responses is the result of whether you agreed that the current walkway of konak city square needs more equipment's which the responses is shown in (Figure 38) above. Firstly, the strongly agreed has over (108) responses while agreed has (56) responses, neutral has (7) responses from the respondents, moreover, disagreed has (24) responses while on the other hand disagreed has (29) responses. Lastly, the strongly agreed has the highest responses from the respondents while neutral has the lowest responses.

Figure 39

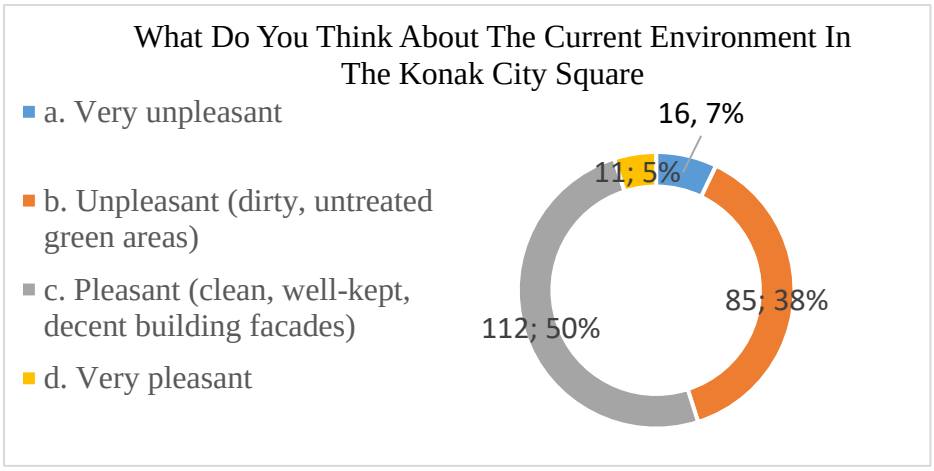
Possibilities of More Equipment's in Konak City Square



In addition, the previous response is related to the next response in the sense whereby this response stated that if you agree konak city square needs more equipment's what would you choose as the equipment. Firstly, the lightings have only (18) responses, waste basket has (21) responses while for benches has (94) responses from the respondents, furthermore directory signs have (45) responses while tactile paving for disabled has (46) responses. To sum up, the benches responses have the highest frequency and waste basket has the lowest responses from the user respondents which is shown in (Figure 39) above.

Figure 40

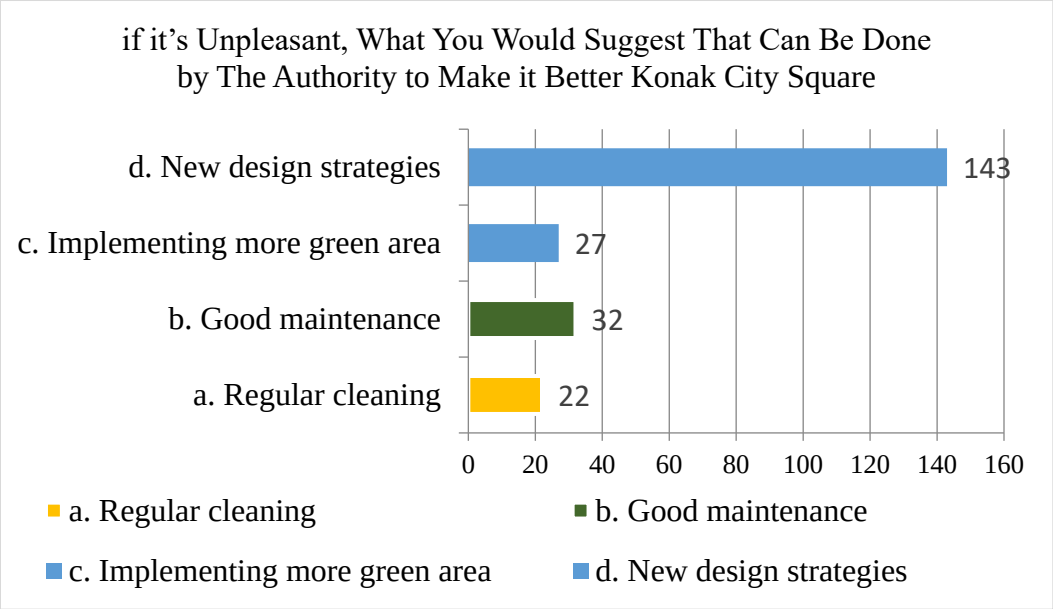
Current Environments in Konak City Square Respondents



However the next response from the design concept is from (Figure 40) above, which is related to the current environment in Konak City Square which stated that, the very unpleasant has 16 responses with (7%) percentage while unpleasant (dirty, untreated green areas) has over 85 responses with the estimate of (38%) percentage, pleasant (clean, well-kept, decent building facades) has over 112 responses with (50%) percent effectively, and very pleasant has only (11) responses with (5%) percent collectively.

Figure 41

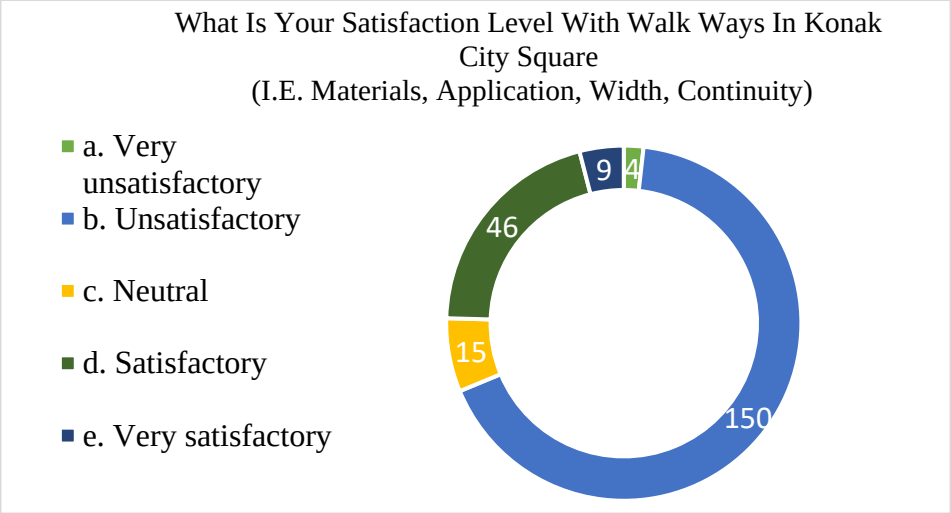
Suggestion on the Authority to make Konak City Square Better



While for this response in (Figure 41) above, which indicates if it's unpleasant, what you would suggest that can be done by the authority to make it better in Konak City Square, which started with, the regular cleaning has (22) responses, good maintenance has (32) responses, implementing more green areas has (27) responses, while new design has (143) which is the highest responses from the user respondents collectively while the regular cleaning has the lowest responses.

Figure 42

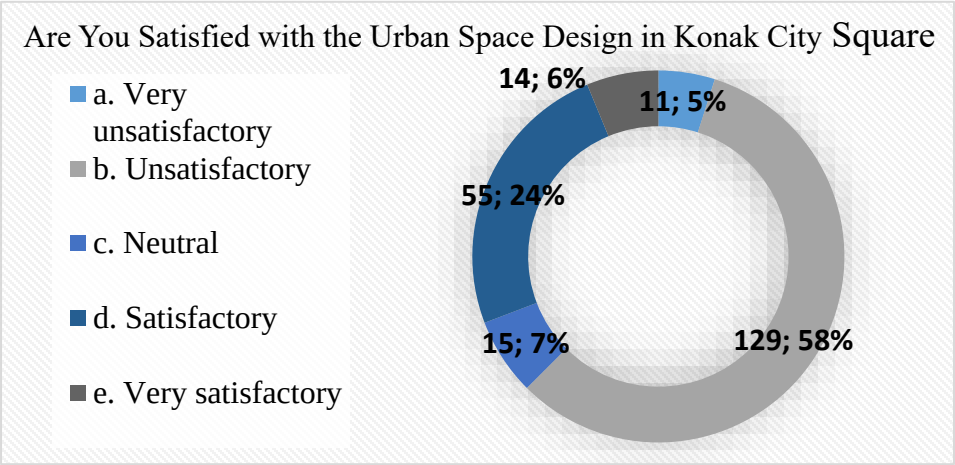
Satisfaction Level with Ramps Design in Konak City Square



According to the result of a satisfaction level with walk ways in konak city square materials, application, width, continuity in (Figure 42). Firstly, the very unsatisfactory has only 4 responses with (1.8%) percentage, unsatisfactory has over 150 responses with also (67.3%) percentage respectively, neutral has 15 responses with (6.7%) percentage, satisfactory has 46 responses with (20.6%) percent, very satisfactory has only 9 responses with (3.6%) percentage

Figure 43

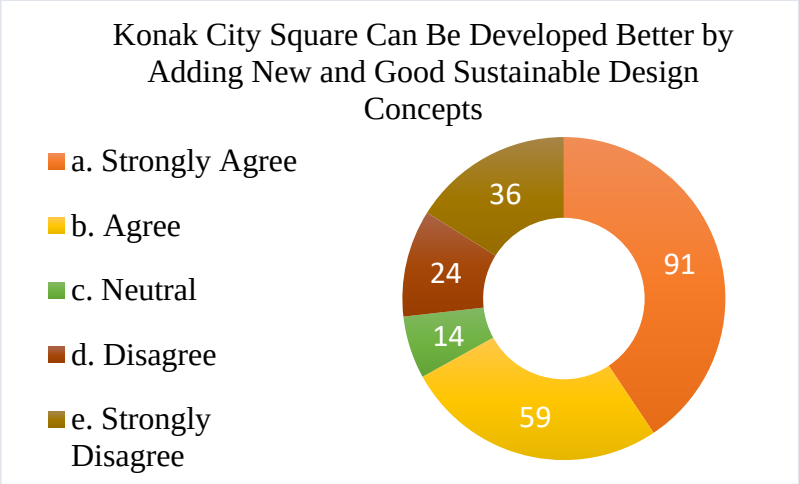
Urban Space Design in Konak City Square



Additionally, while in (Figure 43) above, stated the responses on urban space design in konak city square which indicates to begin with, the very unsatisfactory has only (11) responses, unsatisfactory has over (129) responses while neutral has (15) responses, satisfactory has (55) while very satisfactory has only (14) responses collectively

Figure 44

New and Good Sustainable Design Concepts

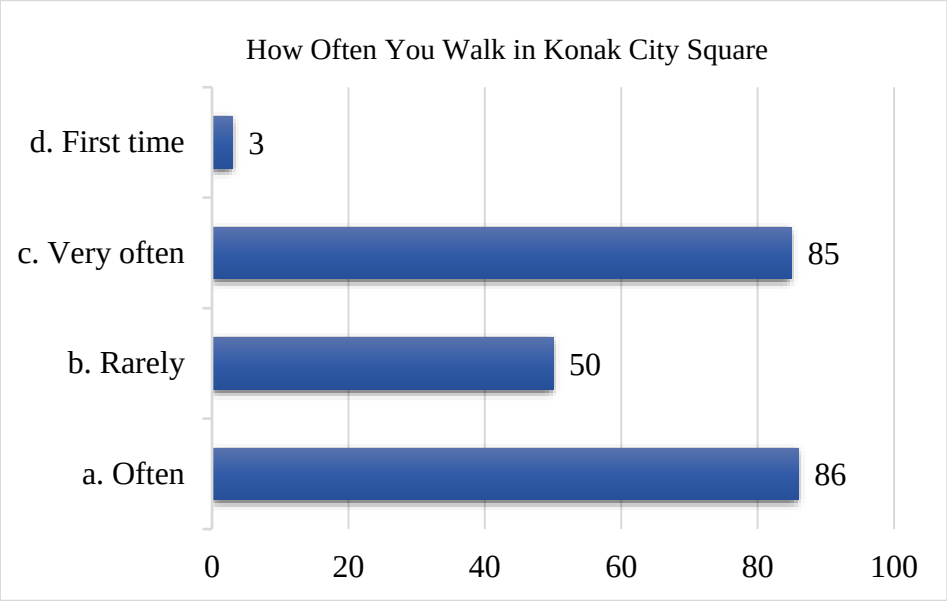


While in (Figure 44) above the responses stated that if konak city square can be developed better by adding new and good sustainable design concepts which has the First response as, strongly agreed has (91) responses, agree has (59) responses from the respondents while neutral has (14) responses, disagree has (24) responses collectively, strongly disagree has (36) responses while strongly agreed has the highest number of responses while neutral is the lowest responses from the respondents.

This response is also important among the other responses which is related on if you live in konak city square which has yes and no responses. First of all, the users that responded to yes are 115 with (51.1%) percentage and the respondents that responded to No are 109 with (48.9%) percentage effectively.

Figure 45

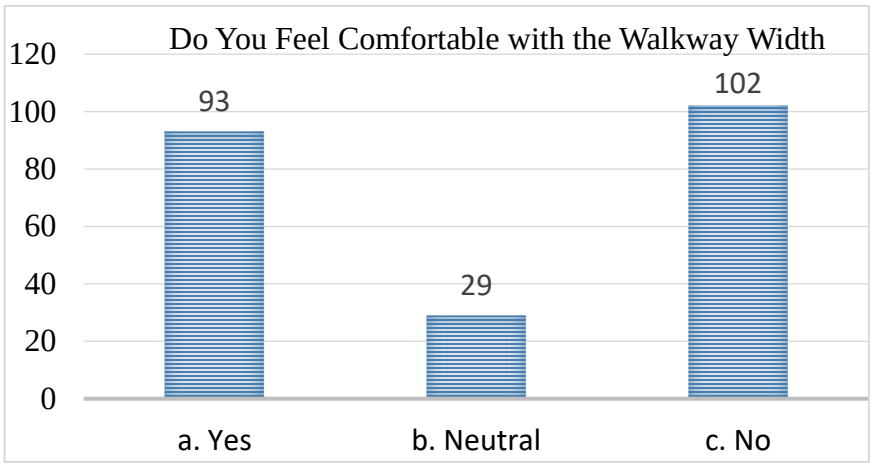
How Often You Walk in Konak City Square



The next responses are from (Figure 45) above which shows how often you walk in konak city square which has the responses from the respondents respectively. To begin with, often has (86) responses, rarely has (50) responses, very often has (85) responses while for first time has only (3) responses collectively. From this chart the highest responses from the user's respondent are often while the lowest responses from the responses is first time.

Figure 46

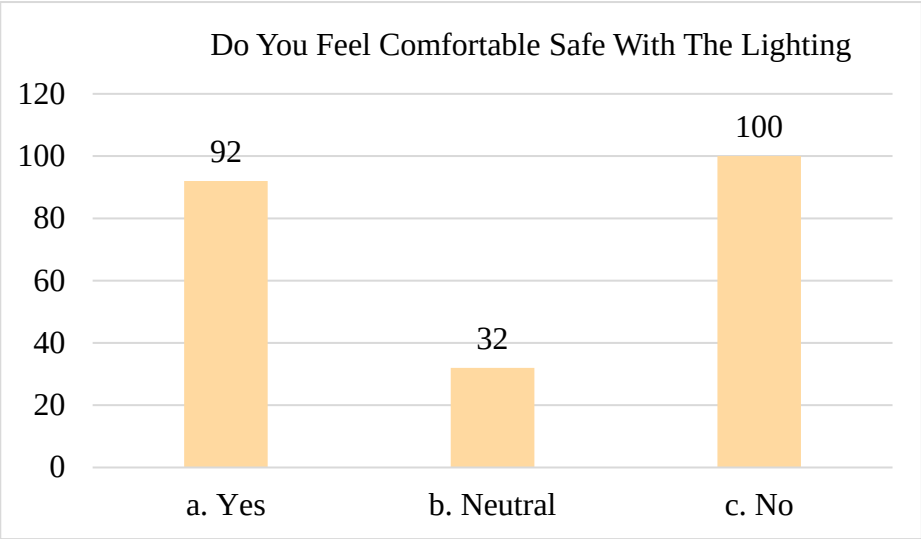
Walkway Width of Konak City Square



The next responses from are (Figure 46) under, which stated the responses of if you feel comfortable with the width of konak city square which has the responses result. Firstly, yes respondents have over (93) responses, neutral has (29) responses while no has over (107) responses respectively. From this result the highest responses from the respondents are no while neutral has the lowest responses from the user's respondent

Figure 47

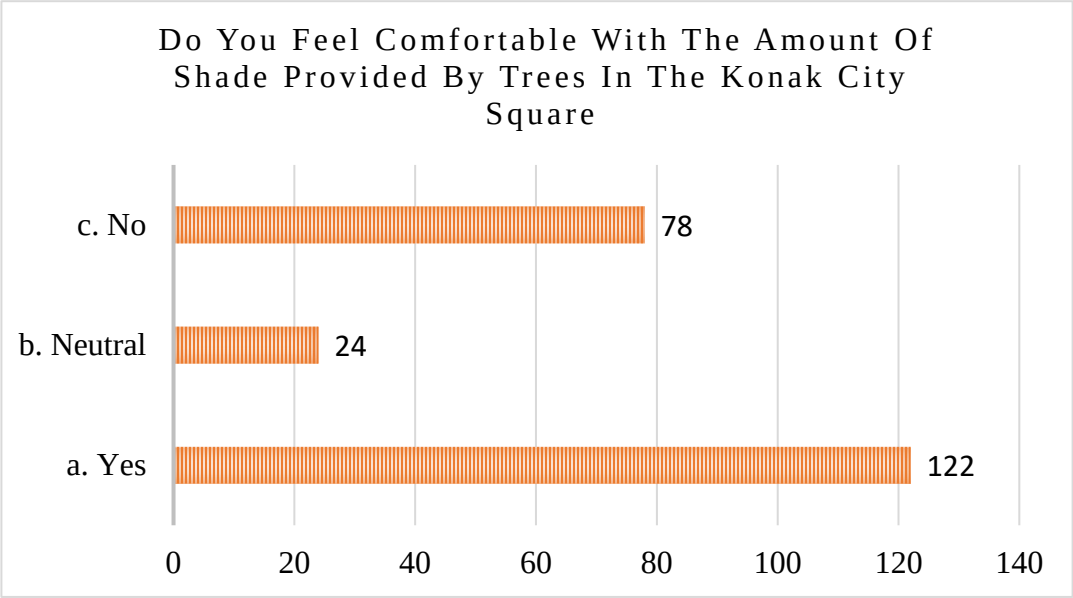
Response on Safe with the Lighting in Konak City Square



Based on the next response from (Figure 47) above,which indicates this result from the respondent which stated if u feel comfortable safe with the lightning of the research study area of konak city square with their responses collectively. Firstly, Yes has 92 responses with over (41.2%) while neutral has only (32) responses, and No has 100 responses with (42.5%) percentage effectively. From this chart the highest number of responses is No while the lowest responses from the respondent's is Neutral.

Figure 48

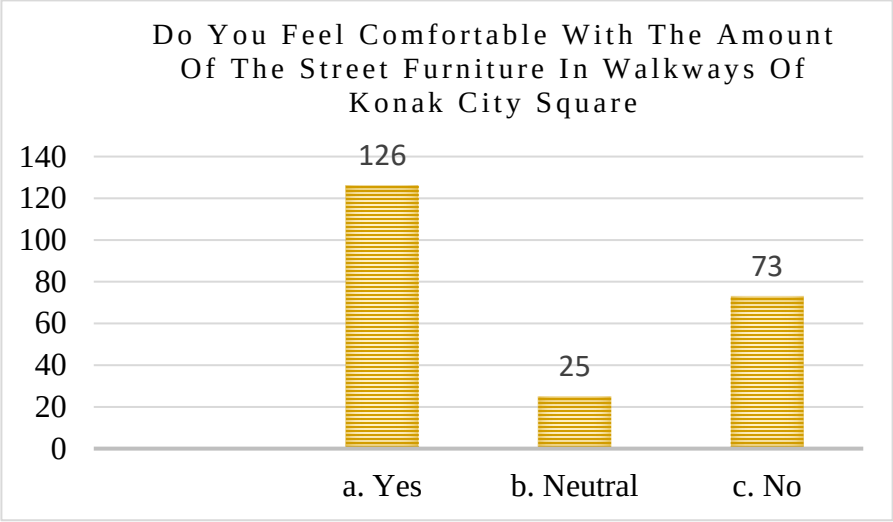
Shade Provided by Trees in Konak City Square



According to the next responses from (Figure 48) above, is whether you feel comfortable with the amount of shade provided by trees in the Konak city square which also has the responses result collectively from the respondents. To start with, yes has over (122) responses, while Neutral has (24) responses, while lastly, no has over (78) responses. From this clustered column chart, the highest responses from the user's respondents are yes while the lowest responses from the respondents is Neutral.

Figure 49

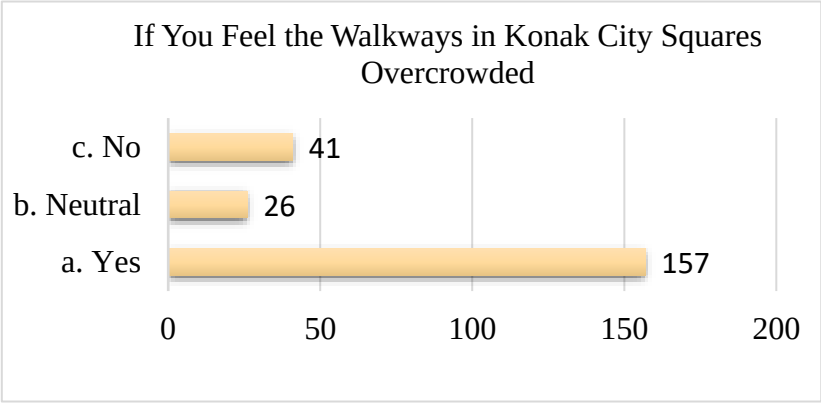
Street Furniture's in Walkways of Konak City Square



While for the responses of comfortability of the street furniture in the walkway's paths of Konak city square which has the result responses from the respondents in (Figure 49) above. First of all, the respondent that respond to Yes are over (126) responses from the users' respondents, also Neutral has over (25) responses, while no has over (73) responses. From this result the highest responses belong to Yes while the lowest responses from the respondents is neutral collectively.

Figure 50

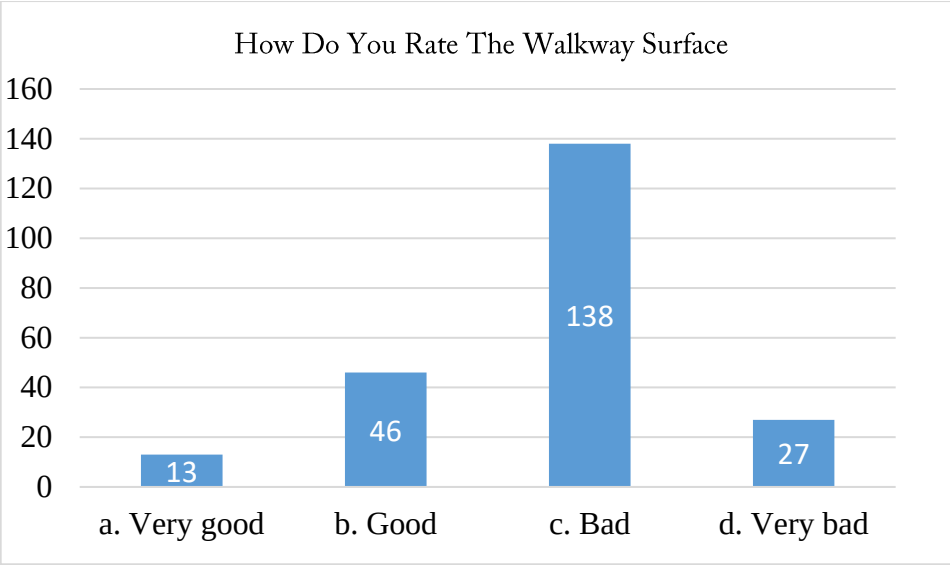
Walkways in Konak City Squares if its Overcrowded



Additionally, the (Figure 50) above shows the result of feel if the walkway in konak city square is overcrowded which show the responses with also Yes and No responses from respondents. Firstly, Yes has (157) responses, with over (70%) percent Neutral has 26 responses, with also (11.7%) percent while no has 41 responses, with over (18.4%) percentage.

Figure 51

Walkways Surface of Konak City Squares.



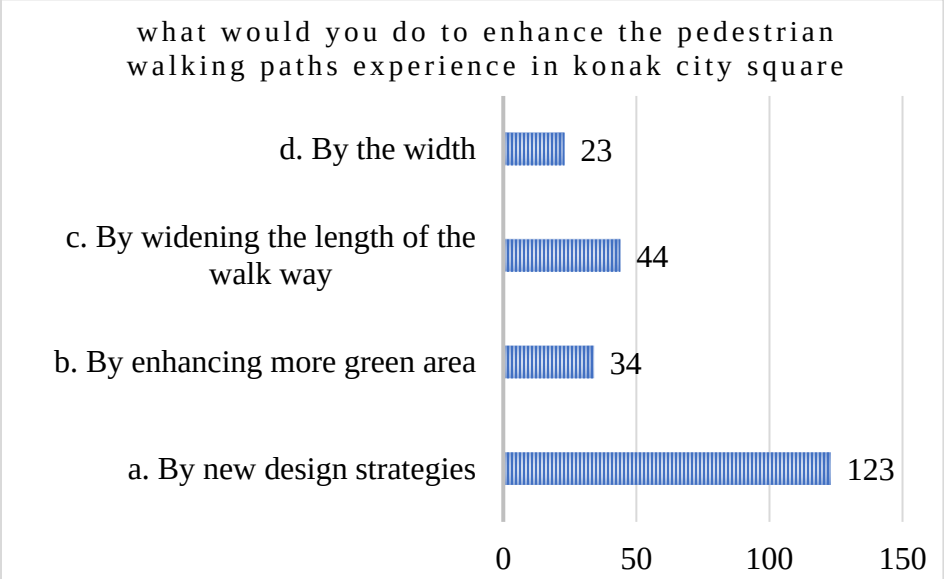
While the next response is from the (Figure 51) above, which stated the walkways surface in the research study area of konak city square which has the result of the responses from the respondents respectively, to begin with, very good has (13) responses with (5.8%) percentage, while good has 46 responses with (20.2%) percentage, bad has over 138 responses with (61.9%) percentage, while very bad has (27) responses with (12.1%) percentage respectively. The highest responses from the respondents are bad while the lowest responses are very good.

According to the rating of overall experience of konak city square which shows the responses from the respondents, first of all, very good has 17 responses from the respondent with (7.6%) percentage while good has 58 responses with (25.6%)

percentage, bad has over 125 responses from the users with also (51%) percentage, and very bad has 24 responses with percentage (10.8%) respectively.

Figure 52

Pedestrian Walking Paths Experience in Konak City Squares



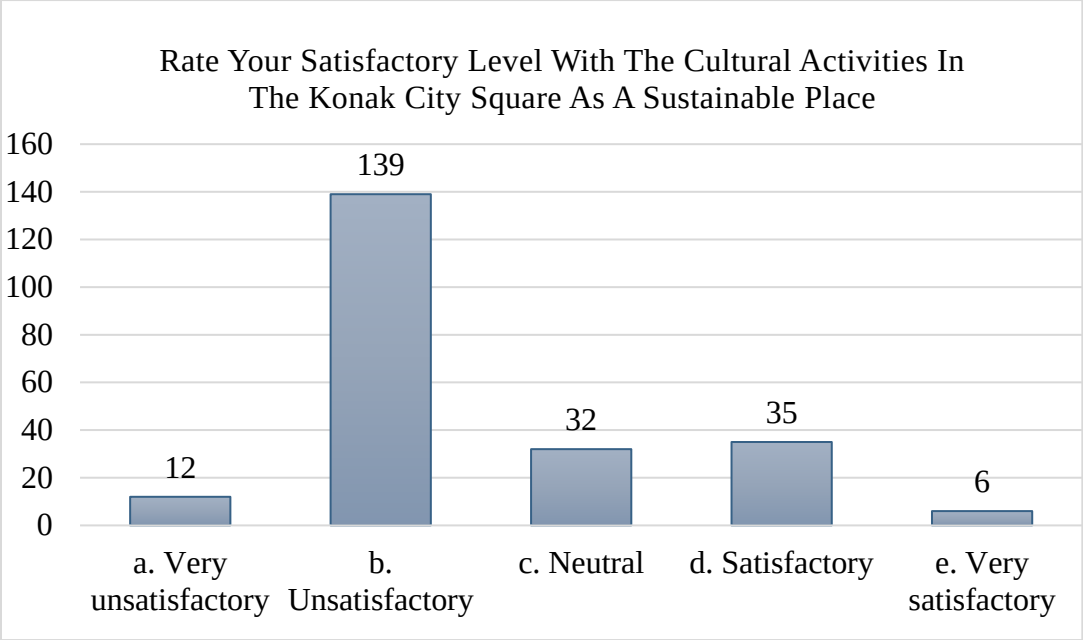
Furthermore, according to (Figure 52) which stated that the ability of what will you do to enhance the pedestrian walking paths experience in the research study area of konak city square with also the result of the responses collectively. To start with, the responses of new design strategies has over (123) responses, enhancing with more green area has (34) responses, by widening the length of the walkway has (44) responses and lastly by the width has (23) responses collectively. This result of this chart shows the highest responses from the respondents is by new design strategies while the lowest according to this chart is clearly by the width.

This is the last section among the 4 sections we have according to the questionnaire which contains satisfactory level responses from the respondents which is related to sustainable urban open space.

The Sustainable Urban Open Space Sections

Figure 53

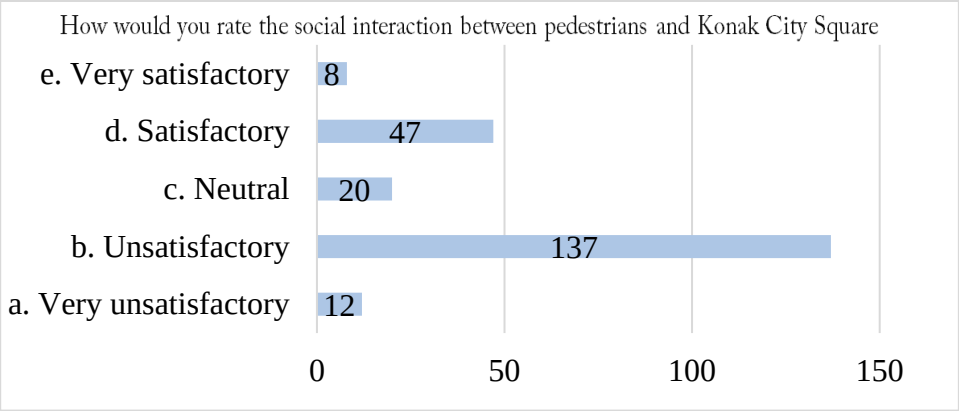
Cultural Activities in Konak City Square



While (Figure 53) above, highlight the rating on satisfactory level with the cultural activities in the research study area of konak, as a sustainable place which clearly shows the result of the respondents, to begin with, very unsatisfactory has (12) responses only, unsatisfactory has (139) responses, Neutral has (32) responses from the correspondent users, satisfactory has (35) responses, very satisfactory has (6) responses only. From this chart the highest responses are unsatisfactory while the lowest is very satisfactory respectively.

Figure 54

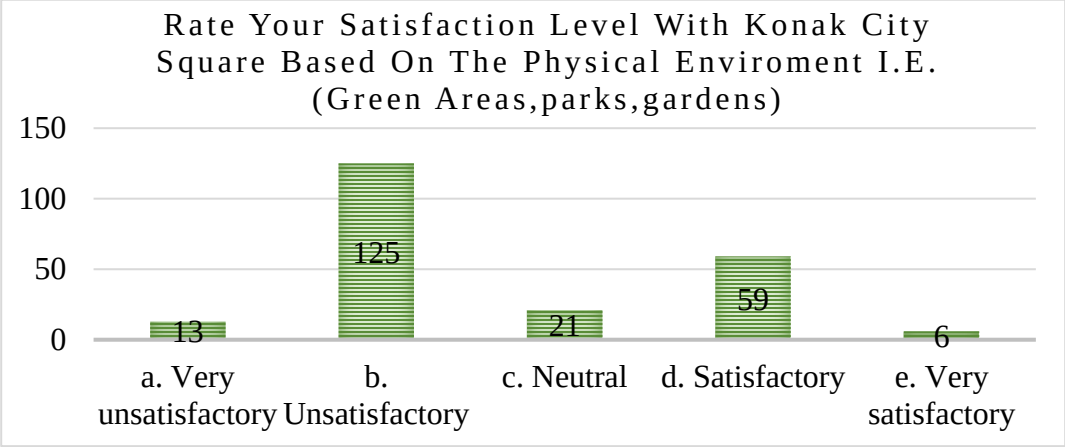
Social Interaction of Pedestrian Users in Konak City Square (Author, 2023)



Moreover (Figure 54) above, indicate the social interaction between pedestrians and konak city square with the overall result of the responses from the respondents.to start with, the response of very unsatisfactory has only (12) responses from the users respondents, unsatisfactory also has (137) responses which is the highest, and the neutral has only (20) responses from the result of the chart, satisfactory has (47) responses from the user respondents, very satisfactory has the minimum responses of (8) only. The highest responses from the respondents are unsatisfactory and the lowest is very satisfactory.

Figure 55

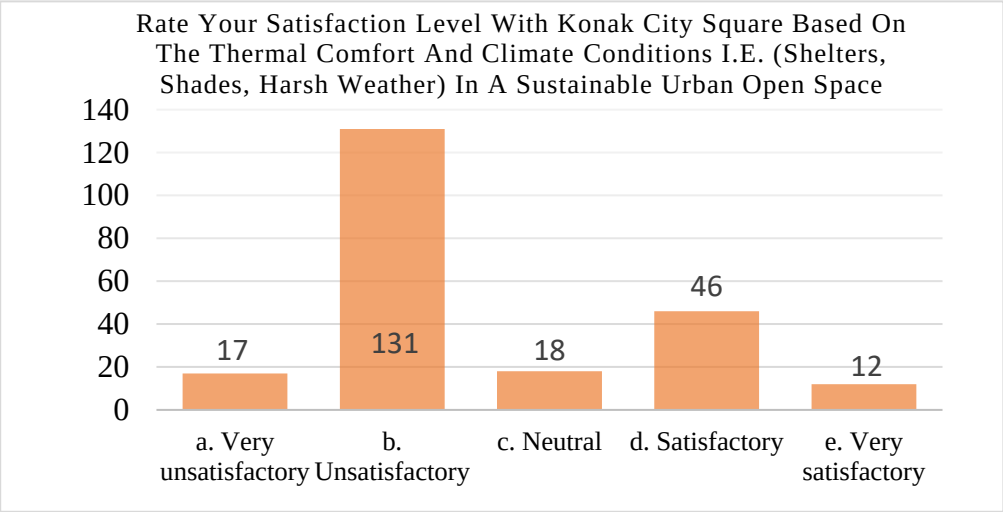
Konak City Square Based on Physical Environments



According to (Figure 55) above, responses which shows the result of the satisfaction level of konak square based on the physical environments (green areas, park, and garden) which has the result of the respondents. Firstly, the very unsatisfactory has (13) responses only, unsatisfactory has (125) responses effectively, while neutral has only (21) responses, satisfactory has (59) responses, moreover very satisfactory has only (6) responses collectively.

Figure 56

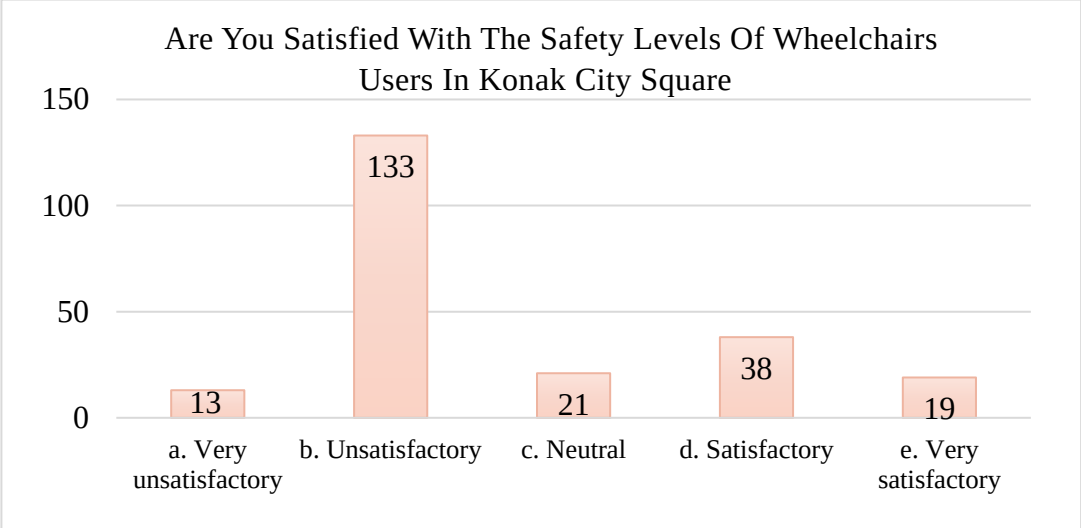
Thermal Comfort and Climate Condition in Konak City Square



Furthermore (Figure 56) above, stated the rating of satisfactory levels based on the thermal comfort and climate condition i.e. (shelter, shades for harsh weather) in a sustainable urban open space, also has the result from the respondents collectively. First of all, the rating goes by very unsatisfactory which has only (17) Reponses from the users while the unsatisfactory has over (131) responses, satisfactory has (46) Reponses from the respondents and lastly very satisfactory has also (12) responses from the respondents.

Figure 57

Wheelchairs Users in Konak City Square



Lastly, the last response according to sustainable urban open space in (Figure 57) above, shows the last result of the satisfaction level of konak square based on safely levels of wheelchair users, which also has the responses from the respondents collectively. Firstly, from the very unsatisfactory which has only (13) responses, while unsatisfactory has (133) responses, neutral has (21) responses, satisfactory has also (38) responses and lastly the very satisfactory has only (19) responses from the respondents. From this chart result we can find out that the highest responses are unsatisfactory while the lowest responses are very unsatisfactory collectively.

Evaluation of All Findings

The evaluation of findings focus on some of the research question in order to answered them simulteneusly.to begin with, among the question that are list before are firstly What are the factors that contribute to user satisfaction with walkways in urban open Spaces (UOS) and most of the answered is this chapter that contains the literature review of the research study while for the findings the factors that contribute users satisfaction with walkways includes the safety of users which implies on the safety of the case study area in which the respondents users respond to no safety in terms of the

lighting of the study area, safety based on elderly users and the disabled. The accessibility of the users is also a primary concern about some physical factors that contribute to users' satisfaction with walkways in (UOS), According to some of the responses from the respondent in the case study area Izmir konak city square, which the users rate the general pedestrian accessibility of the study area and with the response of unsatisfactory. Furthermore the connectivity and wayfinding is another factors which the research study area has some connectivity's to the public transport (bus, train, ferry) which most of the users from the case study area responses to unsatisfactory based on the connectivity of the public transport such as (bus, train, ferry).on the hand for the next research question is the design concepts of walkways in sustainable (UOS), in the Konak city square of Izmir, The design concepts of walkways in sustainable urban open spaces in the Konak district of Izmir can encompass various elements. There are some general design concepts that are commonly used in sustainable (UOS).

Pedestrian Priority Design walkways to prioritize pedestrian comfort, safety, and accessibility.in addition, to ensure ample space for pedestrians to walk comfortably, and also to separate them from vehicular traffic, and provide accessible features such as ramps and tactile paving for individuals with disabilities. Moreover, according to the responses from the respondent in the case study area of konak city square in which the most of responses goes to the tactile and paving especially for the disabled users. The last research question is how do landscape and site characteristics influence the design of walkways in urban Open spaces in the Konak district of Izmir? First of all, the Topography, which here the topography of the site, including slopes, contours, and elevation changes, impact the design of walkways.

Moreover, the users from the case study area of konak city square respond to no according to the comfortable of the width of area. Aligning walkways to capture and showcase these views can enhance the overall user experience and create focal points along the route. According to responses of overall user experience of the case study area of konak city square the highest responses is bad for the overall experience while some of the users respond to good as their overall experience in the research study area.

Table 8

The Research Questions

Research Question	Findings
1. What are the factors that contribute to user satisfaction with walkways in urban open Spaces?	a. Safety: clear visibility, absence of hazards or obstructions. b. Accessibility: smooth surfaces, appropriate gradients and slopes. c. Connectivity and Wayfinding: Clear signage, directional markers, maps, and intuitive design.
2. What are the design concepts of walkways in sustainable urban open spaces in the Konak city square of Izmir?	a. Pedestrian Priority: as ramps and tactile paving for individuals with disabilities. b. Universal Design: gentle slopes, tactile markings, and ample space for wheelchair users and strollers.
3. How do landscape and site characteristics influence the design of walkways in urban Open spaces in the Konak district of Izmir?	a. The topography of the site: including slopes, contours, and elevation changes. b. Views and Scenic Features: The presence of scenic views, landmarks, or natural features in the landscape.

The above (Table 8) indicates some research questions according to the research study which has three questions with their findings collectively. The first (1) question is related to the factor that contributes to user satisfaction with walkways design concepts

in sustainable urban open space which includes the safety of the user which is one of the first crucial factor to be considered for user's comfortability around the study area, according to this research study the safety has been included which is the safety of lighting of the study area and the respondent response to no for the safety of lighting in the square area. accessibility plays a big role for this research study; the accessibility of this research includes how conveniently the user's access to this study area and also with the comfortability through the access of pedestrian path way in the study area. While for the connectivity and Wayfinding that is the Clear signage, directional markers, maps, and intuitive design are also major keys to be considered and this element make it easier for the users around the study area.

While according to the second (2) research question which stated the design concepts of walkways in sustainable urban open spaces in Konak city square of Izmir, this is included in the research questionnaire and similar responses according to the Pedestrian Priority, as ramps and tactile paving for individuals with disabilities, and the participant respond to unsatisfactory to this element in the study area, and also with the wheelchair's users respectively.

Lastly, for the research question on how do landscape and site characteristics influence the design of walkways in urban Open spaces in the Konak district of Izmir which here the topography of the site can be used for sitting area for the user satisfaction although topography and slopes are not suitable area for the disabled users but the topography usually reshapes the urban open space for users' comfortability around the area.

While for the Views and Scenic Features which include some scenic views, landmarks, or natural features in the landscape, konak city square has this kind features because of the sea side of the area and since it's the city center of Izmir konak has the scenic views with a good landscape design for urban open space.

CHAPTER V

Discussion

The ration population of Konak City Square users is a crucial part based on the respondents' participation in the study area. Furthermore, the study area also indicates both social, cultural, and economic values to the square area. The findings on this section of the research recommends on achieving user satisfaction in sustainable urban open space. The gender of the population indicates the square of having a heavily females dominate in the square environment area and there is a need for more males' gender in the urban open space based on user satisfaction. While for the age respondent's participation the range of (31- 40 yrs.') has the highest figures of the responses from the respondents, which indicates that elderly users are most likely the participants of this square area and there is a need of more children's and teenagers in the square environments by providing extra activities for the kids or playground that will be conducive for them to hang around for user satisfaction in the study area. Another vital indicator on the participation of the respondents is konak district users had the excessive rate among the other districts according to the responses in the research which shows that most of the participants are around the square area of konak district, and this helps to have a precise response since the participants are mostly in the square area. For the occupation distribution participants, most of the responses appears to be students and civil servants according to the research study, also there is a need to welcoming different types of users such as tourist and unemployed users since Konak is the city Center of Izmir. Most of the participant respond to no according to any impairments or disability in the research study, this means most of the participant are well heathy without any health issues. Another vital response shows most of the participant visit or go through the square daily, as well as weekly, as the result of this responses most of the respondents usually visit this square daily in a day, this helps the research to have an accurate response based on the daily overall experience in the study area of Konak city square. Since Konak city square is a public open space with a wide range of pedestrian users pathways, most of the participant go on relaxation at leisure time while some of the respondents used the public services like Atm machines, or public toilets which are

around the square parameter, while some participants only used this square area to access to the public transport like bus stations, train station, and ferry for their daily activities, moreover eating at the restaurants is very low according to the responses of the study area and most of the reasons are insufficient availability of the restaurants in the square area. Furthermore most of the participant prefer to visit the square area around the evening time (4-7pm) or during the mid-day (12-3pm) this means the participant prefer to access the square at a leisure time, since konak city square is one of the historical places in the city and it's surrounded by some authority buildings a care has to be taken, although in terms of cleanness the respondents respond to satisfactory, as a place with untidiness or dirty around the square and this will also attract some users in the area.in terms of equipment's ,participant respond to adding more benches and tactile paving for disable users in order to have suitable conducive environment for user satisfaction, also according to a suggestion on the authority to implies new design strategies in order to make the walkway paths more better, the participant also respond to the current width of the walkway path as unsatisfactory and this issues are likely to be a major reasons for some users to stay at home rather to come and visit the square area. In addition, most of the participant don't feel safe with the lighting in konak city square, which as the result of this safety the participant might not feel comfortable moving around the area especially during the night time and this also is related to the response where by the user prefer to visit the square area during the day time, also this can affect the cultural and social activities especially during the night events. For overcrowded of the area, most of the users can walk freely in the square area, this is the reasons why most of the users of the area respond to additional width surface of the square area. Moreover, the walk way surface of the square has been rated very poorly according to the responses of the respondent and the need of amendment of the surface is needed for user satisfaction. additionally, the social interaction between the pedestrian users is marked as unsatisfactory, this shows that the participants are having a low interaction in the study area which also can affects some activities or events in the square area. While according to sustainable urban open space of the square area, in terms of physical environment of konak city square, most participants respond to unsatisfactory with the environment, and this is also an issue to be tackle by the authority in order to achieved

the goals of user satisfaction in the square area. Based on the thermal comfort and climate condition in konak city square the participant rate the square area as unsatisfactory with high responses which also indicates konak city square has a very low shades, although the square area is along the sea side of konak, this will help to have a natural air ventilation around the square area especially during the summer time period. Lastly, according to the safety of wheelchairs (disabled), users in konak city square respond very low with unsatisfactory response in the square area, as the result of this rating the needs of more ramps has to be included in the square area. While for the street furniture's in walkways paths of konak city square, here the participant feel very comfortable with the amount of street furniture's of the square area which served as a sitting area for the users to feel comfortable in the area, since according to responses which stated on how often you walk in the konak city square, the participant respond to often and very often, and this indicates how frequently the users walk along the square area and how important this square is for the users of the area. Another crucial response is the satisfaction based on the connectivity to historical site in konak city square, which most of the participant respond to unsatisfactory with the accessibility connection to the historical site.

The findings of this study shows the participant contribute a lot for the responses in the research study, as the results of this responses from the respondent many issues has been figure out for the evaluation of the research study which also most of the responses has some negativity with unsatisfactory, strongly disagreed, and no responses from the participants, and also this shows how uncomfortable the participant are feeling in the square area especially the pedestrian users of the area. There is need of authority to put their efforts to contribute on fixings this kind of issues that is facing the study area since the area is cover with some official buildings that belongs to the government authorities and also the area is one of the key places of Izmir province. Some of the issues include the width of the pedestrians' users, the surface of the square area, new design strategies for the pedestrian users and also with the needs of more benches, ramps, shading elements and also with some street furniture's. Izmir is usually analysed based on mapping and visualizations of data collected through observations in order to

understand the physical relationship between the pedestrians and their environment in selected site of the research study area. The perspective of the study is based on understanding walking paths as a way of becoming acquainted and a form of intervention in urban space. The aim is to evaluate some spatial qualities of walking paths and to examine how these qualities can be design on pedestrian circulation in Konak City Square. There is not enough transparency between walking spaces, where at some distance some of them are not visible from other points. Pedestrian networking and linkage as well have issues to be focus on, due to the fact that lack of diagonal connection of walking paths, force people to move all the way along the existing spaces or across the grass field to reach their destination.

As all successful walking spaces are expected to serve all pedestrian with perfect qualities by providing enough walking space with all the necessary needs of a walker, new design equipment and even more sustainable urban design concept in the study area This has been made due to the evaluation done beforehand in order to make Konak square comfortable pedestrian walkways with barrier free, safe and friendly for all pedestrians. Some of the areas within the square has low quality of imageability, due to the fact that it is flat grass field with two solid concrete paths; one completely open and the other with trees crossing Over it linking bus stops to Konak footbridge. The square has only grass surface with no Flowers and neither any pedestrian element that can welcome walkers to rest or to use it as convenient public space. The existing paths that are in use in Konak Square are more of like walking spaces that pedestrians use before they have no any other option to change it, but with this observation a lot more have been discovered in regard to their quality and how their physical vertical elements function. Walking in (UOS) like the konak city square does not only exist for walking but also for other purposes such as standing along its edge and waiting as well. In case of old people, it should be able to let them stay to use it for both passive and active recreational activities. This imply that perfect edges need to be consider as a quality along walking paths due the fact that it helps old ages, disable and pregnant women as well.

CHAPTER VI

Conclusion and Recommendations

Conclusion

In conclusion, generally, the study according to the evaluation of walkway design concepts for user satisfaction in sustainable urban open space, and also by using Konak city square Izmir as a case study area has initiated some crucial valuable insights into the role of urban open space. Also, the walkway's paths are designed for user satisfaction. The use of the study questionnaire allowed a comprehensive evaluation of the square area by objecting to some weaknesses and strengths of the case study area and also observing the connection between the arrangements of the urban open spaces and the spatial properties of the pedestrians' paths. Through the idea of some literature reviews from the paper is set to comprehend and evaluate some issues affecting pedestrian walking paths and form a strategy for pedestrian safety and comfortability. The qualitative data of 224 responses have been collected from Konak city square, and through observation and exploration for analyzation to bring out a better pedestrian design for urban open spaces.

The overall conclusion of the research study indicates that the respondents usually goes to the square area daily according to the findings of how often do you use or go through the Konak city square, this show how important the study area is, and this made the square to be overcrowded, especially in the evening time from (4-7 pm) and the solution to this issues is the need of more widening of the pedestrian pathways is urgently needed in order to overcome the issues facing the study area, additionally, another vital issues are how the respondents act on strongly agreed on with konak city square to be developed by adding new and good sustainable design concepts in the square area which also needs to be developed with the width of walkways design concepts since the respondent act No as the comfortability with the width of the square area. Safety is also a major aspect to be concerned about in the safety of the square area, especially with the lighting which also the respondents act to No based on the findings

of the study area, due to these issues on safety there will be a massive reduction of social and cultural activities of the study area especially during the night hours period. Furthermore, according to satisfaction levels ramps for disabled users were also respondents as unsatisfactory according to the users in the square area which means it's hard to access the area or even to walk around, also this issue needs to be fixed in order to have user satisfaction according to the research study.

To sum up, since konak city is the city center of Izmir, and the study area has a lot of historical buildings and official government and private buildings, the authorities need to handle the problem that is facing the square area, in order to served user satisfaction in the study area. Moreover, if konak city is well develop according to sustainable urban open space with more adequate facilities for pedestrians' users, this will attract both tourist and local region users to visit the square area. In general, the finding showed identifiable walking spaces like physical vertical elements are not properly placed in regard to the expression of spatial elements along some of the major and minor paths which hinder the clarity and connections and path networking. Lastly, the lack of cohesion in terms of sensitivity along paths and existence of oversized vertical elements make navigation difficult along the paths. Articulation of some physical existing elements' walking paths and their spatial structure are not proportion to human scale.

Recommendations

From the conclusion section that helps the users to concerned about this square area, and most of the result shows how inconviently the users feels when moving around the study area by the use of walkways paths.

There are some major factors that can be enhanced related to the results from how hard is to pass through this area in terms of the accessability and the linkage of the walkways paths of the study area.

I. The users demands some activities which includes social and cultural activities for the public users needs.the users also suggest some sitting

areas, shelters for bad weather conditions, and also some walkways path signs indicators that will help them for easy access. Although the research study usually focus on the pedestrain path ways of the study area, some facilities needs to be develop such as the sidewalks, zebra crossing signs, traffic light signs, and more open public spaces for the users.

II. Some of the users indicates that the study area is not lively, that is the reasons why the users dont stay longer during their visit in the study area. also most of the users prefer to visit this area during the day light for safety reasons and that is the reason why i would like to recommend an activity for open public space that would be held durring the night time for users satisfactions,since the users already indicates that open public space what attract them most durring their visit in the study area.

III. Thirdly, the study area is lacking some user requirements which is the most essentials needs for the users and the authorities needs to pay attention to this needs for the users, if they improve this need alot of people with engage in this study area.

IV. To enhanced greenery and natural element and also with the presence of greenery, trees, and plants within the square, this will not only improve the aesthetics but also provide shade, improve air quality, and create a more pleasant and inviting environment for users.

V. Improve Seating and Resting Areas: Increase the number and quality of seating and resting areas throughout the square. Provide comfortable seating options that Carter to different user preferences, such as benches, chairs, and seating arrangements suitable for individuals or groups. Consider incorporating shaded areas and adding amenities like water fountains or small gathering spaces.

İf we consider about all the factors and elements which are included both findings and recommendation, the study area of konak will attract more users to this square and also this will provide more social incomes to the area and also the square will be more to sustainable urban open space for user satisfaction.

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APPENDICES

Appendix A

NEAR EAST UNIVERSITY

SCIENTIFIC RESEARCH ETHICS COMMITTEE

05.01.2023

Dear Salisu Muktar Falalu

Your application titled **"The Evaluation of Walkways Design Concepts for Users Satisfaction in Sustainable Urban Open Spaces: A Case Study of İzmir Konak"** with the application number NEU/AS/2022/182 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Prof. Dr. Aşkın KİRAZ

The Coordinator of the Scientific Research Ethics Committee

Appendix B

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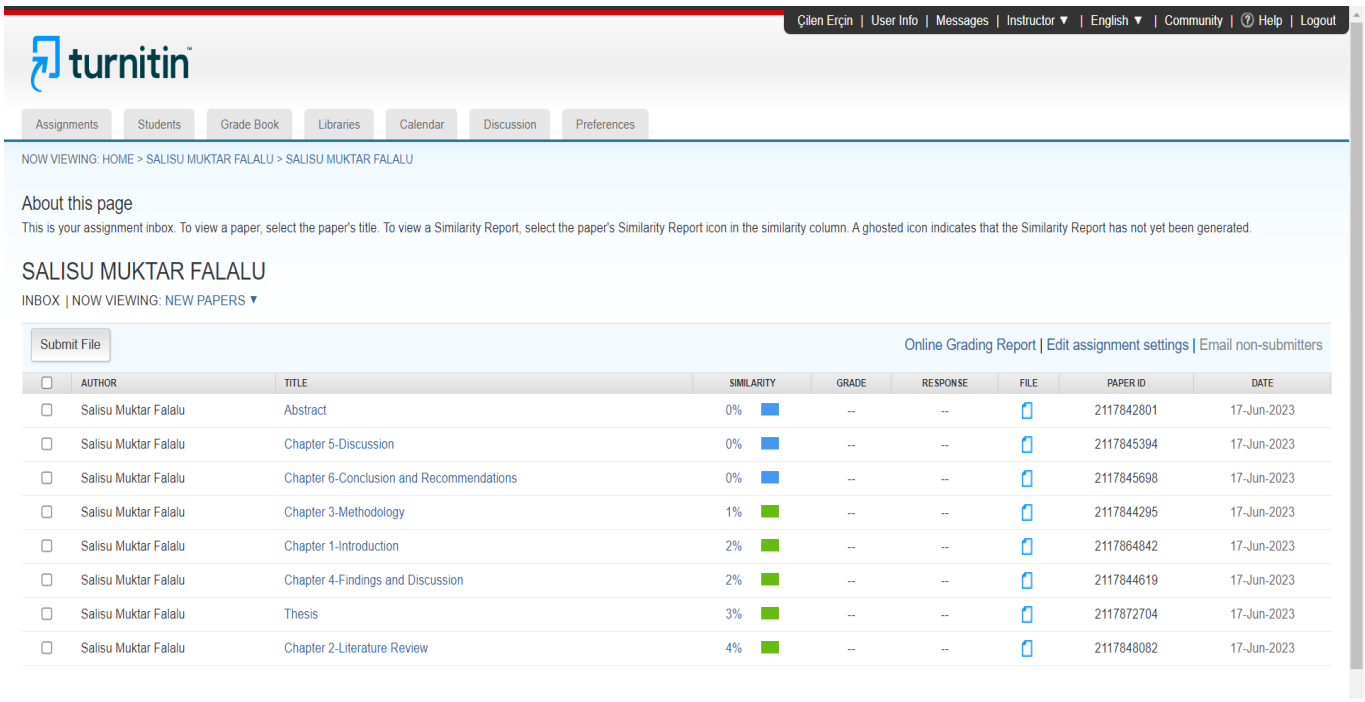

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