



**Kaunas University of Technology**  
**Faculty of Civil Engineering and Architecture**

# **The Use of Emotion Mapping in the Formation of Modernist Neighbourhoods of Kaunas City**

Master's Final Degree Project

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**Russul Saad Znad Mihyawi**

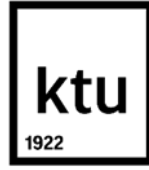
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**Kaunas,2023**



**Kaunas University of Technology**  
**Faculty of Civil Engineering and Architecture**

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Master's Final Degree Project  
Architecture (6211PX026)

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**Kaunas University of Technology**

**Faculty of Civil Engineering and Architecture**

Russul Saad Znad Mihyawi

# **The Use of Emotion Mapping in the Formation of Modernist Neighbourhoods of Kaunas City**

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The topic of the Master's Final Degree Project is approved by the Dean's Order *The Use of Emotion Mapping in the Formation of Modernist Neighbourhoods of Kaunas City*

Master's **Final Degree Project** (study module M000M168)

## T A S K

### **Objective of the work:**

To prepare the Master's final degree project based on the previous stages of the research work.

### **Tasks of the work:**

To connect and summarise the data from the literature sources, analytical paper, research in situ report and experimental project, and prepare the Master's thesis – to present the reasoned solutions to theoretical and practical problems.

### **Structure of the work:**

**Text.** Title page, heading page, declaration of academic integrity, the task of the final degree project (FDP) (if needed), summary, content, list of figures (if needed), list of tables (if needed), list of abbreviations and terms (if needed). Main part: introduction (relevance and novelty of the work, research problem and the level of its examination, object, objective, tasks, and methodology of the FDP); augmented and summarised data of theoretical research, empirical research and experimental design; conclusions of individual chapters and the entire work. List of references, list of information sources (if needed), appendices, copies of the graphical part (reduced in size).

The volume of the text (main part) is 2 – 3 quires (1 quire is 40 000 characters with spaces), i.e. around 60 – 80 pages of printed text (recommended font is Times New Roman, size 12, line spacing multiple 1.15 (Methodological Guidelines for the Preparation of Written Works)).

### **Graphical part.**

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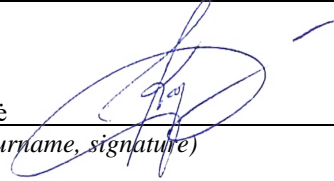
### **Timetable of the performance of the tasks:**

1. Discussion of the task	01 02 2023
2. Constitution of the writing programme of the final work and the work's structure	08 02 2023
3. Supplementation, structuring, analysis and generalisation of the present data	until 15 03 2023
<b>4. Review and evaluation of the supplemented and generalised data</b>	<b>15 03 2023</b>
5. Writing of the FDP text and finishing of the graphical part	until 03 05 2023
<b>6. Review of the first edition of the FDP text</b>	<b>03 05 2023</b>
<b>7. Defence of the FDP at the commission of supervisors</b>	<b>10 05 2023</b>
<b>8. Public defence of the FDP</b>	<b>31 05 2023</b>

**Consultation time with the supervisor**

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	Time and duration *	Time and duration *
Monday		
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\* - 2 hours per week

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February 2023

Russul Saad Znad Mihyawi / The Use of Emotion Mapping in the Formation of Modernist Neighbourhoods of Kaunas City/ Master's Final Degree Project / Head of Architecture study program Prof . Dr Jūratė Kamičaitytė

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Kaunas, 2023. 118.

## Summary

This research aims to analyse the principles of spatial formation and planning in modernistic housing areas and evaluate the level and reasons for their decay. It also aims to create conceptual proposals for emotion mapping to regenerate modernist neighbourhoods and examine the growth path. Urban public spaces were developed historically, adapting them to the public needs of those times. Shortages in urban planning resulted in problems connecting public spaces and population mobility. City residents solved the problem of proper public spaces by adapting existing spaces to their needs.

Applying emotion mapping in these areas makes it possible to analyse how they adapt to the needs of the public and how they are engaged in changing the cityscape. Emotion mapping is a recent approach to assessing human mental states and people's emotional and behavioural interactions with objects. It can be used to design and maintain multicultural public spaces that are beautiful, inviting, and pleasant. The aim is to validate the hypothesis of using emotion mapping to solve the issues of modernistic housing area regeneration in Kaunas in the Soviet Period, create a conceptual model of emotion mapping usage, and apply it in the Dainava district experimental regeneration design. This research aims to test and analyse the impact of urban design on people through their emotional reactions to the urban environment, perform theoretical research on emotion mapping applications for urban planning and design purposes, analyse modernistic housing area development history, planning and design principles, and identity features, formulate a hypothetical model of emotion mapping usage for the regeneration of modernist housing areas, perform empirical research on the application of emotion mapping to assess the emotional impact of modernistic urban design and planning on residents' and other people's feelings, formulate a conceptual model of emotion mapping usage for the regeneration of modernist housing areas, propose experimental design solutions for the regeneration of Dainava district area, and create guidelines on how to use emotion mapping techniques for the regeneration and development of modernistic neighbourhoods on an urban scale.

This study examined the theory of using emotion mapping to address the issue of modern urbanism in Kaunas from the Soviet Period. It used five techniques: questionnaire, sentiment analysis, space syntax, geotagged emotion mapping, and measurement of emotional intelligence. The results suggested urban-scale modernist community development and spatial renewal. The research found a connection between people's behaviour and space syntax indicators linked to sentiment analysis. The urban visual analysis helped to narrow and classify people's emotions towards their neighbourhood and focus on three aspects: buildings, streetscapes, and spaces between buildings. Emotion mapping was used to guide the development of architectural and communal areas, which led to the design of a regeneration path which was aimed at creating a green connection, performing the function of gathering the community and enhancing the architectural environment and emotional climate of the district.

Russul Saad Znad Mihyawi / Emocijų kartografavimo panaudojimas formuojant Kauno miesto modernistinius gyvenamuosius rajonus / Magistro baigiamasis projektas / Architektūros studijų programos vadovė Prof. Dr. Jūratė Kamičaitytė

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Kaunas, 2023 m. 118.



## Santrauka

Šiuo tyrimu siekiama išanalizuoti erdvinio formavimo ir planavimo principus modernistiniuose gyvenamuosiuose rajonuose bei įvertinti jų nykimo lygį ir priežastis. Taip pat siekiama sukurti koncepcinius pasiūlymus panaudoti emocijų kartografavimą, siekiant atkurti modernistinius rajonus ir nustatyti jų tolimesnio vystymo kelią. Miesto viešosios erdvės buvo kuriamos istoriškai, pritaikant jas tų laikų visuomenės poreikiams. Miestų planavimo trūkumai lėmė viešųjų erdvių jungiamumo ir gyventojų mobilumo problemas. Tinkamų viešųjų erdvių problemą miesto gyventojai sprendė pritaikydami esamas erdves savo poreikiams.

Emocijų žemėlapių taikymas šiose teritorijose leidžia analizuoti, kaip jos prisitaiko prie visuomenės poreikių ir kaip jos įsitraukia į miestovaizdžio keitimą. Emocijų kartografavimas yra naujausias požiūris į žmogaus psichinės būsenos ir žmonių emocinės bei elgesio sąveikos su objektais įvertinimą. Jis gali būti naudojamas kuriant ir prižiūrint daugiakultūros viešąsias erdves, kurios yra gražios, kviečiančios ir malonios. Tikslas – patvirtinti hipotezę apie emocijų žemėlapių panaudojimą sprendžiant sovietmečiu sukurtų modernistinių gyvenamųjų namų teritorijų regeneracijos problemas Kaune, sukurti koncepcinį emocijų žemėlapių panaudojimo modelį ir pritaikyti jį Dainavos rajono eksperimentiniame regeneravimo projekte. Šiuo tyrimu siekiama išbandyti ir išanalizuoti miesto dizaino poveikį žmonėms per jų emocines reakcijas į miesto aplinką, atlikti emocijų žemėlapių pritaikymo miestų planavimo ir projektavimo tikslais teorinius tyrimus, analizuoti modernistinės gyvenamųjų teritorijų raidos istoriją, planavimo ir projektavimo principus, identiteto bruožus, suformuluoti hipotetinį emocijų žemėlapių panaudojimo modelį modernistinio laikotarpio gyvenamųjų rajonų regeneracijai, atlikti emocijų kartografavimo taikymo empirinius tyrimus siekiant įvertinti modernistinio urbanistinio projektavimo ir planavimo emocinį poveikį gyventojų ir kitų žmonių jausmams, suformuluoti koncepcinį emocijų žemėlapių naudojimo modelį modernistinio būsto rajonų regeneracijai, pasiūlyti eksperimentinius projektinius sprendimus Dainavos rajono kvartalo regeneracijai ir sukurti gaires, kaip panaudoti emocijų kartografavimo metodus modernistinių kvartalų regeneracijai ir plėtrai miesto mastu.

Nagrinėjant emocijų žemėlapių panaudojimo klausimus buvo naudojami penki metodai: sociologinio tyrimo klausimynas, jausmų analizė, erdvės sintaksė, geografinių emocijų žemėlapių sudarymas ir emocinio intelekto matavimas. Rezultatai leido nustatyti modernistinio laikotarpio rajono vystymo kryptis ir erdvinį atnaujinimą. Tyrimas atskleidė ryšį tarp žmonių elgesio ir erdvės sintaksės indikatorių, siejamų su jausmų analize. Miesto vizualinė analizė padėjo susiaurinti ir klasifikuoti žmonių emocijas savo kaimynystės atžvilgiu ir sutelkti dėmesį į tris aspektus: pastatus, gatvėvaizdžius ir erdves tarp pastatų. Emocijų žemėlapiai buvo naudojami siekiant sukurti architektūrinės ir bendruomeninės zonas, ir tokiu būdu buvo sukurtas regeneravimo kelias, kuriuo buvo siekiama sukurti žaliąją jungtį, atliekančią bendruomenės telkimo ir rajono architektūrinės aplinkos ir emocinio klimato gerinimo funkciją

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## List of abbreviations and terms

### Terms:

**Emotional mapping** – as understood in participatory planning- allows citizens and municipalities to initiate a map-based dialogue concerning the current and future state of public space.

**Urban planning** – Urban and regional planning, which may also be referred to as town planning, city planning, or rural planning, is a multifaceted process involving technical and political considerations. Its primary objective is to facilitate the development and design of land use and the built environment, encompassing air quality, water management, and infrastructure systems that connect urban areas with their surroundings.

**The urban regeneration path**-typically involves a series of interconnected stages, including assessment and planning, physical redevelopment, economic revitalization, social and community development, and ongoing monitoring and evaluation.

## Introduction

Since the 1960s, researchers have examined the critical need to understand how to include residents' perceptions of cities in the planning process (Zeile et al., 2015). As the Fourth and Fifth Industrial Revolutions progressed, new technological and scientific options became available to study emotions in real-time in urban areas and apply cutting-edge technology for smart urban planning. However, remote technologies have yet to be fully implemented in the real world. These may be used to conduct integrated assessments of people's mental and physiological states and weather and pollution conditions. The discoveries, as mentioned earlier, could serve as supplementary information for local administrative strategizing. The ASP System was established to accomplish this objective, which pertains to researching emotions in public spaces for urban planning purposes. An urban planning process combines technical and political elements to improve the well-being of city residents while also controlling land use, expanding the city's infrastructure, and protecting and improving the natural environment (McGill University, 2015).

The research aims to analyse the principles of spatial formation and planning of modernistic housing areas and evaluate the level and reasons for their decay. Furthermore, it aims to present some examples of their transformation according to today's needs and assess the potential of emotion mapping for their regeneration (case studies). The research also aims to create conceptual proposals for emotion mapping to regenerate modernist neighbourhoods and examine the growth path. This study represents a departure from prior research endeavours that have examined the correlation between urban-built environments and emotions from a singular perspective. A thorough evaluation of the impact of urban infrastructure on individuals' emotional states, coupled with a more expansive exploration of the correlation between cognitive processes and emotions, could offer a novel outlook on the analysis of communal emotions within urban areas.

Most urban public spaces were historically created and modified to meet the populace's demands at the time. Interwar Lithuania saw the development of certain public areas. Public areas in cities were also referred to be hotbeds of social unrest because of the townspeople's boisterous entertainment, crime, and unconventional behaviour during the time. The interwar press depicted the citizens of Kaunas in caricatures that included the behaviours noted above. Lack of urban planning led to issues on how public areas and population movements were connected. There was a paucity of public space in certain metropolitan areas. Therefore, it was suggested, for instance, that school plots be temporarily converted into playgrounds, orchards, or kid-friendly gardens. By adapting pre-existing urban areas to suit their requirements, urban residents have devised strategies to address the challenge of suitable communal spaces. As an illustration, juvenile sledge hockey athletes identified appropriate locations for athletic activity in the AMickevicius Valley, the Seventh Fort, Aukstoji Panemune, Aukstieji Sanciai, Aleksotas, and Viliampole. (Zaleckis et al., 2021).

Applying emotion mapping in these areas, it is possible analysing how they adapt to the needs of the public and how they are engaged in changing the cityscape. As cityscape changes come from different aspects and reasons, the aim is to have a good emotionally tested cityscape development. The people are designing for themselves, but in a more professional way as the designers and planners will be involved, and at the same time, the city itself gives a result for the repetitive layers and emotions. As a result, this provides an excellent typology answer to contemporary urbanisation worldwide, particularly in Lithuania.



Emotion mapping is a relatively recent approach in the market to assess human mental state and people's emotional and behavioural interactions with objects. It can be a reason for making emotion mapping one of the tools when redesigning the modernistic neighbourhood. Were these districts built without thinking of people? It was just a shelter built in a way that had no access to the broader social life and no interaction; it was like a machine without thinking of the livable vibes of the human, as will be shown in further research. Modernism in urban planning of the neighbourhood is a way of planning rigid and mechanical cities, their functionality, order, and zoning with total neglect of the human factor. The utilisation of emotion mapping methodology can facilitate cooperation between design practitioners and social scientists in creating and upkeep culturally diverse communal areas that are aesthetically pleasing, welcoming, and agreeable.

**The object:**

Regeneration path of the modernistic district through focusing on buildings, streetscapes, and public spaces (case study: Dainava district area in Kaunas).

**The aim:**

Validating the hypothesis of using emotion mapping to solve issues of modernistic housing areas regeneration in Kaunas from the Soviet Period, to create a conceptual model of emotion mapping usage for the regeneration of modernist housing area and to apply it in Dainava district experimental regeneration design.

**Tasks:**

- To test and analyse the impact of urban design on people through their emotional reactions to the urban environment;
- To perform theoretical research on emotion mapping applications for urban planning and design purposes;
- To analyse modernistic housing areas' development history, planning and design principles, and identity features to contribute to a better quality of life for residents;
- To formulate a hypothetical model of emotion mapping usage for the regeneration of modernist housing areas;
- To perform empirical research of emotion mapping applications assessing the emotional impact of modernistic urban design and planning on resident's and other people feeling;
- To formulate a conceptual model of emotion mapping usage for the regeneration of modernist housing area
- To propose experimental design solutions for the social life of an area and create a future character for the area through an engagement design activity, integrating locally relevant urban art to establish a clear sense of identity.
- To create guidelines on how to use emotion mapping techniques to regenerate and develop modernistic neighbourhoods on an urban scale.

## Methodology

This research analyses the principles of spatial formation and planning of modernistic housing areas, evaluates the degree and causes of their decay, and presents some examples of their transformation following contemporary needs (case studies). Several methodologies have been used to conduct a literature review on this topic (Fig. 1). A systematic review of the literature involves a comprehensive search of databases and other literature sources to identify relevant studies that meet predefined criteria. The review process involves screening, selecting, and analysing studies to identify key themes and patterns. In addition, a scoping review involves a broader search of the literature to identify the extent and nature of research on a particular topic. The review process involves identifying key concepts and themes and mapping the literature to identify knowledge gaps. A narrative review has been applied to critically analyse and synthesise existing literature on a particular topic. The review involves selecting and analysing studies to identify key themes and patterns and provide a narrative literature description.

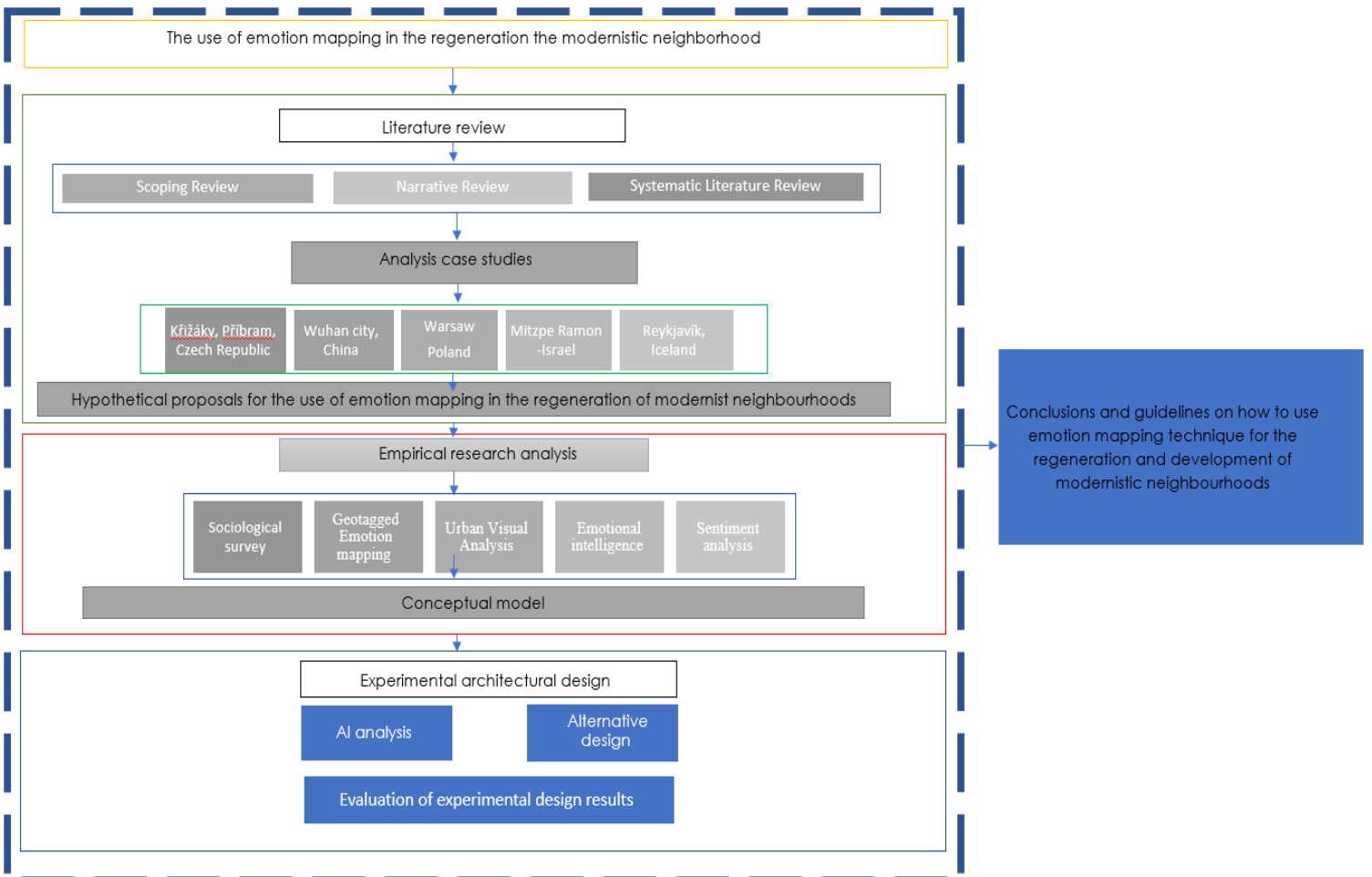
In general, the combination of these approaches was useful in providing a comprehensive understanding of emotion mapping in regenerating cities.

The previous research strategy, which looked at the connection between urban built environments and emotions from a single point of view, is changed by this study.

In examining the theory of using emotion mapping to address the issue of modern urbanism in Kaunas from the Soviet period and to measure how it affects people by testing and analysing the emotional reaction that has occurred because of these designs, the study demonstrated how modernistic city districts could be revitalised. Its results could be used to suggest urban-scale modernist community development and spatial renewal. In the empirical research, the following five techniques were used to use emotion mapping to address the issue of contemporary urbanism in Kaunas: Questionnaire: sentiment analysis (coupled with textual emotion analysis based on big data), space syntax, Geotagged Emotion mapping (interactive map), and measurement emotional intelligence.

The questionnaire about the quality of life in the (nonspatial questions) and the neighbourhood with urban society engagement (spatial questions) helped to test people's emotions toward streetscapes, buildings, and spaces. The research also discovered a connection between people's behaviour through space syntax linked to sentiment analysis. The Urban Visual Analysis helped to narrow and classify people's emotions towards their neighbourhood and suggest their emotional favourites. Moreover, help focus on three aspects: buildings, streetscapes, and spaces between buildings. A design-based research method was used for the regeneration design proposals of the Dainava district.

The evaluation of the experimental design results shows that the research's primary aim had been achieved and gives a design example using the emotion mapping approach.

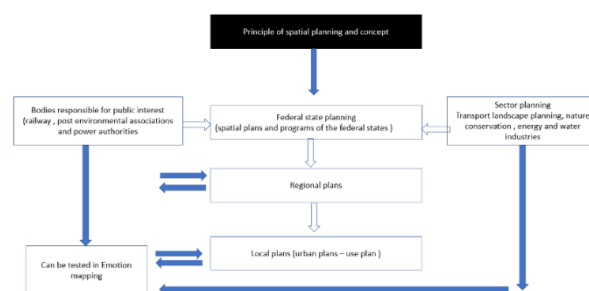


**Fig. 1.** Research methodology (by the author).

## 1. The planning principles of modernist neighbourhoods and the potential of emotion mapping usage for the regeneration of modernist housing areas

The planning process mediates the competing claims of the state, market, and community domains. The formulation and implementation of transformative strategies, innovation action, and performance in spatial planning are characterised by three distinct mechanisms, namely stakeholder involvement, integration of sectoral policies, and promotion of development projects. The spatial sustainability and sustainable development issue has been a longstanding consideration for planners operating within a spatial framework. Urban planners must manage various social, economic, environmental, and amenity issues. However, the recent emphasis on sustainability has resulted in the need to address a broader range of interests that require careful mediation. The translation of the sustainability concept into specific planning principles has been pursued for this purpose. Urbanisation, economic development, and environmental factors must be in sync for this study area to be feasible. Theoretically, a potential linkage exists between urbanisation, economic development, and environmental degradation. The subject matter under consideration exhibits both positive and negative attributes. (Camara et al., 2021a).

Urbanization is often accompanied by economic growth, a shift from rural to urban life, the concentration of secondary and tertiary industries in cities, and an increase in the population of such cities, which is constantly expanding. People and the environment are both affected by urbanization, which results from the process itself. Human behaviour changes and modernistic living becomes more adaptable in rural areas, yet the mechanisms of modernistic urbanization begin to impact individuals when they move there severely. The technical and political process deals with the design of the urban environment, which encompasses air, water, and other infrastructure that enters or exits a city, such as transport and distribution networks. Urban planning history. The history of urban planning can be traced back to some of the oldest known urban places where planning can be found. Many modernist neighbourhoods could be revitalized and developed on a large scale if this proposal is implemented. The research will test and analyse the emotional response to these designs and how they influence society to confirm the hypothesis of using emotion mapping to tackle the challenge of contemporary urbanism in Soviet-era Kaunas (Fig. 2). Studying Smart Cities will include a focus on the urban fabric and connecting concepts that take the whole research to another point of view, using Kaunas city as a typological example for other cities to solve this challenge via an architectural project.



**Fig.2.** The planning relationship with emotion mapping (by the author).

## 1.1. History and urban planning principles of the modernist neighbourhoods

In the 1920s, urban planning began to incorporate modernist concepts. In 1922, the renowned modernist architect Le Corbusier proposed an ambitious plan for a three-million-person "Contemporary City" (Ville Contemporaine). This plan's primary component was a pair of 60-story steel-framed skyscrapers with huge glass curtain walls. These structures were surrounded by wide, rectangular green zones resembling parks. Bus and railroad stations and highway interchanges were built on the fringes of this large transportation hub, which culminated in an airport. According to the requirements of Le Corbusier, aircraft could land between the structures. He elevated the automobile's status as a mode of transportation by separating it from the streets, which he accomplished by constructing a distinct way for pedestrians (Guillén, 1997). Those that moved away from the core buildings resided in tree-studded, low-rise zigzag apartment complexes set back from the street in green space. It was anticipated that French businessmen, with their efficient Taylorist and Fordist techniques derived from American industrial models, would lead the way in reconstructing society in the form envisioned by Le Corbusier. His 1925 "Plan Voisin" intended to demolish a significant portion of central Paris north of the Seine and replace it with a grid of orthogonal streets and park-like open space. Le Corbusier's book *La Ville Radieuse* (The Radiant City) was released in 1935 and built on his 1930s-era thoughts regarding urbanization. In Radiant City communities, housing allocations based on family size rather than economic status were eliminated, distinguishing it from the Contemporary City in this way. Several of Le Corbusier's concepts have been implemented in constructing public housing developments in Europe and the United States.

In addition, Nadir Afonso, a painter-architect who has incorporated Le Corbusier's concepts into his aesthetics theory, is only one of the many students who have studied under the architect. The city plan for Brazil and Zlin's industrial city plan in the Czech Republic are both based on Lucio Costa's conceptions, and both are well-known worldwide. The architect himself prepared the blueprint for the Indian city of Chandigarh. At the beginning of the twentieth century, the Russian ideologies of Futurism and Constructivism also significantly impacted Le Corbusier's work. A further critical thinker is Sir Patrick Geddes, who grasped the importance of considering a regional environment and saw the connection between social problems and town planning and the growth of enormous urban conurbations in the future. In Mandatory Palestine in 1927, he was hired to develop Tel Aviv, which still stands today. It comprised approximately 40 blocks, each approximately 150 square meters in size. A windmill-like design of inner access roads in the block's public garden made driving in a car challenging, as did parking in the lot. The combination of north-south commercial buildings and east-west residential blocks is a gently sloping street pattern. Updating historical grid patterns straightforwardly and practically using this technology is possible. Many covered streets and public spaces lead to the seaside, making it easy to get there. The concept of the new community was a success.

In communist nations, the state often employs its authority to enforce plans formulated in administrative hubs to implement efficacious urban designs. Following the dissolution of the USSR, Russia underwent a theoretical decentralisation process. However, it is noteworthy that Moscow continues to maintain a substantial degree of influence over the country's urban planning.

The emergence of modernist neighbourhoods during the early 20<sup>th</sup> century can be attributed to the societal and economic transformations that the Industrial Revolution instigated. The group above was distinguished by their prioritisation of functionalism, rationality, and technological advancement.

**Typology of Buildings:** The architectural typology prevalent in modernist neighbourhoods is characterised by large-scale, high-rise buildings featuring clean lines and geometric shapes. The utilisation of reinforced concrete material enabled enhanced adaptability in architectural design and expedited the innovation of novel building configurations. The Unité d'Habitation in Marseille, France, designed by Le Corbusier in 1952, represents a pioneering instance of a novel building typology. It comprises a sizable residential tower constructed with a concrete frame and characterised by a modular layout. (Corbusier, 2013).

The average size of the block in modernist neighbourhoods was larger than in traditional neighbourhoods due to the planners' intention of creating larger open spaces and reducing building density. Le Corbusier's Radiant City proposal entailed the development of superblocks that would integrate residential areas, educational institutions, and other facilities within a singular, expansive block.

**Principles for the Formation of Streetscapes:** In modernist neighbourhoods, there was a notable emphasis on the segregation of pedestrian and vehicular traffic, achieved through a system of roads and streets organised according to their respective functions. The Brasília Plan, formulated by Lucio Costa and Oscar Niemeyer in 1957, involved dividing the city into separate zones designated for residential, commercial, and institutional purposes. A system of highways and expansive boulevards interconnected these zones. The zones in question were characterised by restricted pedestrian access, with a primary emphasis on the development of efficient streetscapes that catered to the needs of motorists (Condello & Lehmann, 2016, p. 51).

An emphasis on functionality, efficiency, and modernity generally distinguished the urban planning principles governing modernist neighbourhoods. This often came at the cost of conventional urban design principles, such as walkability, human scale, and social interaction. Although certain modernist neighbourhoods have attained their objectives, a few have been censured due to their estranging and unfeeling atmospheres.

## **1.2. Identity of the cityscape**

Cityscapes (urban landscapes) represent cities and urban areas in the visual arts. It's a cityscape. The concept of cityscape is multifaceted and can be comprehended through diverse viewpoints. The urban landscape can be perceived as a representation of the city, characterised by the interaction between natural and social systems within a geo-technical framework.

The term "cityscape" pertains to the visual representation of a city and its physical attributes. The urban fabric comprises various elements such as edifices, thoroughfares, communal areas, systems, and environmental attributes that collectively contribute to the distinctiveness and individuality of the metropolis. Various perspectives of the urban landscape can be encountered, including ground-level, elevated, and distant viewpoints. The urban landscape is a prominent theme in artistic and photographic mediums, with numerous practitioners depicting metropolitan areas' distinctiveness and aesthetic appeal through their creations.

A cityscape can be defined as a form of urbanised terrain that encompasses the planning and organisation of the urban environment. The concept pertains to the arrangement of physical elements within an urban area, including the allocation of structures and communal areas, as well as the incorporation of natural and man-made characteristics into the city's overall design. The analysis and evaluation of a cityscape can be approached through multiple perspectives, including but not limited to ecological sustainability, social equity, and economic viability.

A cityscape is a geo-tech-system encompassing the intricate interplay between natural and social systems within the urban environment. The phenomenon involves the perpetual exchange of energy and water, the generation of biomass, and the conversion of substances within the urban environment. The concept of cityscape can be comprehended as a multifaceted adaptive system, wherein the interplay of feedback loops and emergent properties governs the system's overall behaviour. Built forms and interstitial space are configured in urban design. Why is the city typology after liberation closely related to conflict or a highly constrained system? Emotion mapping begins when individuals start to act and move.

So imagine analyzing the emotion mapping in these areas and how they adapt to the need of the public areas and how they had the engagement or changing the cityscape. As cityscape change comes from different aspects and reasons and the result of having a good emotionally tested cityscape development, it has the same concept that the people who are designing for themselves but in a more professional way as the designers and the planners will be involved and at the same time. (Lindeke, 2014). As a result, this provided an excellent typology answer to contemporary urbanization worldwide, particularly in Lithuania. When it comes to old-world city planning, modernity is all about efficiency, order, and zoning. These concepts sprang from a desire to arrange the city into an automated system, as explored in Le Corbusier's 1935 project "La Ville Radieuse." It was created with this in mind by the Masters of Modernism then. The modern city is one in which everything is easily identifiable, including the four major human activities of living, working, resting, and moving. (Fig. 3)



**Fig.3.** The main aspects of Le Corbusier's theory (by the author).

This way of thinking was universally successful until it became clear that 'cities built-in line with these standards does not consider the real needs of residents. The identity of the cityscape in modernist housing areas is characterized by a lack of diversity and activity, monofunctional design, and little morphological variety, as well as a lot of abandoned and unmaintained green areas and chaos in the car parking area. Modernist housing areas often feature a "uniformity and homogeneity of the built environment" that can contribute to a sense of alienation and disconnection among residents. The

monofunctional design of modernist housing areas means they often lack the variety of land uses to create vibrant and engaging public spaces (Friedmann, 2017). Additionally, the lack of maintenance for public spaces, including parks and green areas, can lead to neglect and abandonment (Friedmann, 2017, pp. 315–340). Finally, the design of car parking areas in modernist housing areas is often inefficient and can contribute to traffic congestion and safety hazards (Manville & Shoup, 2005, p. 31,128-135).

As shown in the table, during different periods, the identity of the cityscape in modernist housing areas has been studied extensively, and the following scientific papers provide evidence for the characteristics of the history of the cityscape (table 1).

Table 1: The main issues of modern cityscape and its identity in the scientific literature.

Paper	Conclusion
"Reclaiming the streets for people: Insights from Ciclovías Recreativas in Latin America" (Sarmiento et al., 2017)	This study examines the impact of a community-based initiative to reclaim streets for public use in Bogotá, Colombia. It discusses the importance of creating more diverse and accessible public spaces in modernist housing areas to promote community engagement and well-being.
"The relationship between greenspace and the mental wellbeing of adults: A systematic review" (Houlden et al., 2018)	This paper explores the relationship between green spaces and human well-being and discusses the negative impact of abandoned and unmaintained green areas in modernist housing areas on residents' mental and physical health.
"Parking and the City" (Shoup, 2018)	In this study, Shoup examines the inefficiency and chaos of parking in urban areas, including modernist housing areas, and discusses the need for better parking policies to promote sustainability and safety.
"Car Parking Problem in Urban Areas, Causes and Solutions" (Ibrahim, 2017)	This study examines the issue of parking in urban areas and discusses the chaos and inefficiency of parking structures in modernist



	housing areas, which can contribute to traffic congestion and safety hazards.
"Condemned to green? Accessibility and attractiveness of urban green spaces to people experiencing homelessness" (Koprowska et al., 2020)	This paper explores the importance of green spaces in urban areas for human health and well-being and discusses the negative effects of abandoned and unmaintained green areas in modernist housing areas, which can contribute to stress and other negative health outcomes.

Overall, these studies support the notion that modernist housing areas are often characterized by a lack of diversity, activity, and visual interest, as well as a lack of maintenance and upkeep for public spaces, including green areas and parking structures. People and cities are not just machines; to thrive, they must interact with each other. Other Kaunas districts, particularly those that have not been renovated since the Soviet era, such as Dainava, Smeliai, Milikoniai, and Eiguliai, stand to profit significantly from initiatives of public spaces. It is easy to imagine how the human well-being of the neighbourhood would improve if the housing area were renovated and transformed into a healthy social node where people could participate in various activities instead of feeling trapped in their homes.

When remodelling these sections, it is important to consider the site and context. The investigation of human well-being is a subject matter that can be studied extensively; thus, the context serves as an essential collaborator and a challenging communicator. Urban landscapes are dynamic and heterogeneous social environments encompass individuals of varying physical attributes, dimensions, and origins. Engaging in the pastime of observing the various manners in which individuals traverse thoroughfares, communicate with one another, or organise their domiciles within urban environments has the potential to provide perpetual amusement. The key is to develop a sense of ease with the experience of disorientation. Identifying a suitable cityscape (Lindeke, 2014) is associated with affective responses, conduct, and, potentially, conduct. Investigating both negative and positive emotions within the urban environment can significantly contribute to advancing urban development.

### 1.3. Urban trends

Academic literature has thoroughly researched and recorded urbanization trends. Here is a quick summary of several significant discoveries in recent literature: more than half of the world's population lives in urban regions, and urbanization is a global phenomenon happening at an unprecedented rate. The urban population is estimated to increase by 68% by 2050, continuing the current trend (Economic & Affairs, 2018). Urbanization is unevenly dispersed: Asia and Africa are the continents with the fastest rate of urbanization, whereas urbanization is unevenly distributed between regions and nations. Urbanization within nations frequently concentrates on particular areas, resulting in glaring geographical disparities. Social and environmental effects of urbanization Significant social and environmental effects include a rise in air pollution, clogged roads, and socioeconomic inequality. Since people in low-income metropolitan areas have limited access to

infrastructure and essential services, these effects are frequently at their worst there. Urbanization and economic growth are strongly related, with urban regions accounting for a sizable share of the country's gross domestic product (GDP). However, the advantages of urbanization are sometimes not evenly spread, with some city dwellers benefiting from more favourable economic conditions than others. Urbanization presents substantial problems for urban planning, including the need to manage urban development, solve environmental and social issues, and provide essential infrastructure and services to expanding urban populations. Urbanization must contribute to sustainable development and improve the quality of life for city dwellers; hence it must be planned well.

Urban development faces both enormous obstacles and possibilities due to urbanisation's complex and varied phenomena. The evolutionary patterns of modernist residential zones have exhibited fluctuations over time and have been impacted by many factors. Several significant trends have surfaced: diversifying functions is a notable aspect of developing modernist housing areas, initially conceptualised as homogeneous residential zones. Recently, there has been a tendency to expand the range of functions in these regions by incorporating commercial, cultural, and recreational amenities to foster more dynamic and habitable neighbourhoods. The refurbishment and regeneration of modernist housing areas constructed during the mid-20th century have become imperative due to the need for renovation and modernization. Recently, there has been a trend towards retrofitting and renewal of these regions, frequently facilitated by public-private partnerships, aiming to enhance their energy efficiency, sustainability, and aesthetic appeal (ANTYPENKO & BENKÓ, 2022). Mixed-income development has become a prevalent trend in modernist housing areas, characterised by the integration of subsidised and market-rate housing units. The approach, as mentioned earlier, is perceived as a means to foster greater diversity and inclusivity within communities. (Lucio, 2009). In contemporary modernist housing areas, there has been an increasing focus on the significance of public spaces, which encompasses establishing parks, plazas, and community gardens. The provision of these spaces is considered crucial in fostering social engagement and strengthening communal bonds. (AD Classics, 2011). The utilisation of smart city technologies, which comprise data analytics and sensors, is progressively being employed to enhance the administration and habitability of contemporary housing regions. The technologies mentioned earlier can potentially monitor and regulate energy consumption, traffic patterns, and public safety, among other applications.

The evolutionary patterns observed in modernist residential zones indicate an increasing acknowledgement of the significance of establishing habitable, environmentally viable, and socially equitable neighbourhoods. For efficient urban planning and sustainable urban growth, it is crucial to understand urbanization patterns and their effects. The term "public space" pertains to an area that is accessible to individuals of all social strata, facilitating unplanned encounters between them. Henri Lefebvre, an urban theorist, redefined the notion of "the city" as "the urban," whereby the amorphous urban landscape was transformed into a spatial entity. The previously identifiable structure has transformed into a relatively amorphous, ubiquitous, and global entity. In addition, in order to confer social agency to urban areas and their corresponding spaces, it is imperative to construct a "public space" that facilitates unplanned and unstructured interactions among individuals without any form of division or isolation.

The effects of examining emotions in public spaces on the urban planning trend involve assessing emotions in such settings, enabling urban planners to pinpoint locations where individuals may

experience feelings of insecurity, dissatisfaction, or unease. The data mentioned above can be employed to prioritise initiatives to improve the residents' emotional well-being. Investigating emotions in public spaces could potentially aid urban planners in creating urban spaces that prioritise the well-being of individuals by fostering social and emotional welfare. Urban planners can design built environments that cater to the emotional requirements of inhabitants; this can be achieved by developing spaces that evoke positive emotions, such as happiness, calmness, or a feeling of connectedness. The utilisation of emotional analysis of public spaces can serve as a technique to effectively engage residents and foster their involvement in the urban planning process, thereby augmenting community participation. Urban planners have the potential to create urban environments that are more inclusive and community-oriented by soliciting feedback and input from residents. This approach can result in designs that better meet the community's needs.

Analyzing emotions in public areas can lead to the development of urban environments that improve the quality of life for people. By designing environments that evoke good feelings, occupants are more inclined to use and enjoy them, resulting in an improved quality of life. Evaluating emotions in public areas can help urban planners develop more people-centred urban spaces that promote social and emotional welfare, increase community participation, and improve inhabitants' quality of life.

This assessment of the literature also suggested that planning must pay more attention to the emotional dimension. According to urban planning, emotional expression is vital while attempting to bring about progressive change.(Kaklauskas et al., 2021)

#### **1.4. Emotion mapping for urban planning**

In this chapter, the study will focus on emotional mapping and using that technique in urban planning and urban areas. The feeling makes city life and provides a role for the locations. Urban regions are devoid of human presence, and associated emotions can be likened to mere stage sets rather than authentic urban environments. In the early 1950s, Ivan Chitchevlov coined the term "psycho geography" to refer to the amalgamation of psychological and spatial factors. (Chitchevlov, 1953). The participation of residents in the city's planning and decision-making process must be improved. A range of approaches has been created to encourage people to participate in local projects, as ubiquitous cell phones, cameras, and sensors enable capturing not only declarative but also behavioural data. Individuals may exercise their right to vote and make decisions through unconventional means, such as physically visiting designated locations or utilising social media platforms to share visual content, rather than engaging in traditional forms of participation. (Camara et al., 2021b).

This wonderful occurrence increases our knowledge of city dynamics but also contains hazards. There is also a risk of excluding the views of senior citizens who use social media sparingly, in addition to concerns about their privacy. However, it is important to note that in industrialized nations, the major issue is less about a lack of necessary skills or technology and more about an attitude that social networks are not for the elderly hence, the task at hand entails devising a mechanism that enhances the involvement of senior citizens in the communal deliberative procedures. The proposed approach necessitates the integration of both implicit and explicit modes. Rather than using direct questioning techniques, users can tag either a picture provided by researchers (resembling a polling approach) or a self-generated image (resembling a behavioural data approach) to address certain issues. (Nielek et al., 2017).

### **1.4.1. Effect of urbanism typology on people**

A large city results from a multifaceted amalgamation of attributes and is the locus of individuals' quotidian lives. (Ma et al., 2021a) Benabbou & Lee, 2019). A city is a spatial medium for material exchange, integrating production, consumption, collaboration, and experience. Research has indicated that the built environment of a municipality influences individuals' perceptions of a city and elicits diverse affective responses. The revitalization and strategic development of the constructed surroundings bear long-lasting implications for the potential expansion of metropolitan regions. (Hijazi et al., 2016; Ma et al., 2021a). Presently, the construction of cities that prioritise the needs of individuals is a prevalent phenomenon worldwide. Assessing the built environment from the standpoint of the populace has become an essential component of both urban revitalization and urban design. The attribute of emotion is a multifaceted and all-encompassing construct that embodies the various traits and actions of the human persona. The level of habitability exerts an impact on emotional stress. Extended exposure to unlivable urban environments contributes to heightened emotional stress, adverse affective states, and the onset of psychological disorders. During the 1950s, a hypothesis suggested that space could elicit emotional responses.

Conducting a comprehensive analysis of the association between urban constructed environments and human emotions is imperative for advancing scientific urban renewal, urban planning, and the creation of urban spaces that prioritise human needs. However, the lack of relevant information pertaining to the relationship between complex urban constructed environments and emotions has hindered progress towards comprehending the determinants that influence public emotions and how to improve the urban built environment to cultivate empathetic urban spaces. (Ma et al., 2021b).

The physical characteristics and spatial configuration of modernist free-standing buildings result in distinct spatial formations compared to perimetric development. Free-standing structures typically generate open and fragmented areas, fostering a heightened linkage between the edifice and the adjacent terrain. Conversely, the process of perimetric development results in the formation of enclosed spaces facing inward and is frequently characterised by the predominance of constructed structures.

Research has demonstrated that alterations in the spatial arrangement can substantially influence individuals' mental health. According to existing research, independent structures have the potential to offer a heightened perception of independence, self-governance, and proximity to the natural environment, ultimately resulting in favourable emotions of contentment and wellness. The perimetric development process may induce feelings of confinement, absence of authority, and detachment from the natural surroundings, ultimately resulting in unfavourable psychological consequences.

Determining the most psychologically acceptable typology is a complex task, as it is contingent upon several factors, such as individual inclinations, cultural environment, and the distinct design attributes of the edifice or development. Several studies propose that architectural structures that amalgamate features of both free-standing and perimetric typologies, such as those that encompass a central courtyard or garden, can establish a harmonious equilibrium between openness and enclosure, thereby resulting in favourable psychological consequences (Guite et al., 2006). The spatial arrangement of buildings and developments can significantly influence the psychological well-being of individuals.

Designers and planners must consider the psychological impacts of various typologies while designing and constructing buildings and urban areas. (Z. Li et al., 2022).

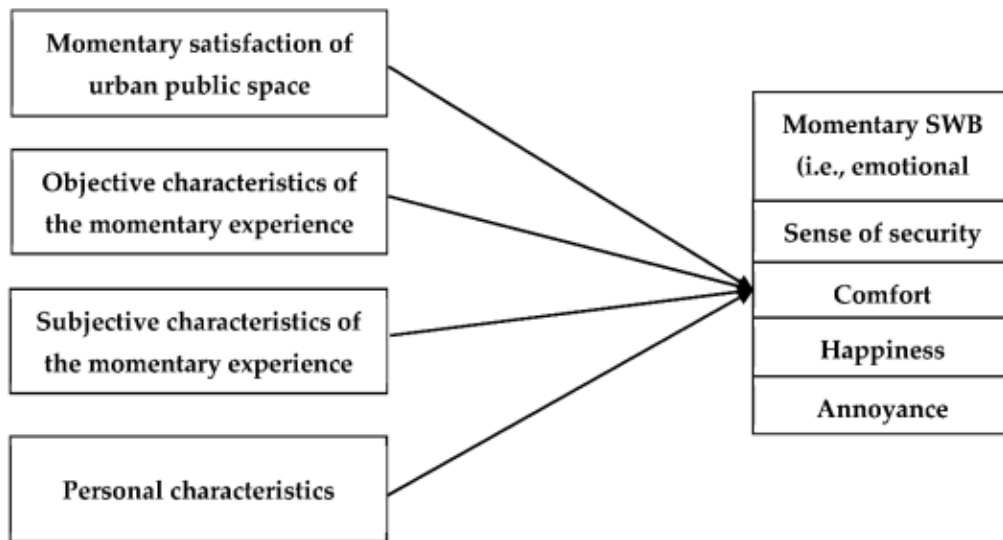
### **Mapping emotions of space**

The success of a design or creation is contingent upon the satisfaction of its users. For instance, the design of a house with narrow corridors may impact the perception of space, resulting in a feeling of tightness. This concept is also applicable in urban environments, where the quality of public spaces can significantly contribute to individuals' subjective well-being. Nevertheless, the investigation of the subjective momentary well-being of individuals, specifically their emotional state, with the various facets of urban public spaces remains constrained. In 2020, Perrée conducted a study to analyse individuals' emotional state and their correlation with momentary satisfaction with urban public spaces. The study also sought to control for personal and experiential characteristics. The study gathered data through an experience sampling method (ESM) from 1056 momentary experiences of 161 individuals in urban public spaces in Eindhoven, The Netherlands. The mixed multinomial logit (MMNL) model was employed to analyse the data for each dimension of individuals' subjective momentary well-being: the sense of security, comfort, happiness, and annoyance. (Weijs-Perrée et al., 2020).

The study results suggest that the participants experienced greater happiness when they perceived a higher degree of security and comfort and reduced annoyance concerning traffic safety. Policymakers and urban designers may utilise the results of this study to construct urban public spaces that are more inclusive, leading to enhanced well-being, reduced anxiety, and increased satisfaction among citizens. These spaces may include streets, parks, transportation facilities, and retail centres. (Tonnelat, 2010). The provision of public spaces serves to enable the movement of individuals, facilitate interpersonal communication, provide opportunities for leisure and pleasure, as well as promote a sense of calmness and repose. (Kamalipour et al., 2013). Mehta (Mehta, 2014) has presented five evaluative criteria for a public space. These criteria include the space's ability to facilitate a range of activities, its meaningfulness, its capacity to provide pleasure, its accessibility to diverse individuals and groups, and its ability to provide a sense of safety and physical and environmental comfort. Zamanifard proposed a user-centric evaluation tool known as the Public Space Experiential Quality Index (PSEQI) to measure various aspects of public spaces, such as comfort, inclusiveness, diversity, vitality, image, and likeability. This tool aims to enhance the evaluation of public spaces. Comprehending the affective reaction to public urban space is imperative in order to make informed decisions pertaining to the advancement of urban regions. (Weijs-Perrée et al., 2020).

Therefore, the interaction between individuals and their surroundings at a particular point may give rise to a subjective transitory encounter that elicits a transitory impact. (X. Li et al., 2016). The term "effect" can be characterised as a comprehensive notion that pertains to individuals' affective experiences. Empirical evidence suggests that participating in physical activity in a natural environment elicits positive affect, as a comprehensive literature review indicates. Previous research has indicated that visits to parks have a positive impact on individuals' overall state of wellbeing, resulting in decreased levels of anxiety and tension. (Weijs-Perrée et al., 2019) Defined four

dimensions of momentary emotions of people, namely, sense of security, comfort, happiness, and annoyance, as shown in (Fig. 4).



**Fig.4.**A conceptual model showing how feeling can be shaped (Weijts-Perrée et al., 2019).

#### 1.4.2. Relationship between emotions and behaviours

The underlying concept of this chapter posits that emotions have the potential to influence behaviour, and that behaviour, in turn, can exert an impact on the surrounding environment, and conversely, the environment can also affect behaviour. The built environment exerts an influence on the behaviour of individuals. Studies conducted in architecture-assisted neuroscience have evinced that diverse environmental contexts can evoke affective reactions and influence cognitive processes within the human brain. The subject of investigation concerns whether a structure can evoke favourable or unfavourable emotional reactions. Could their subjective perception of being distinct impact an individual's conduct? The existence of cognitive inequalities has the potential to impact the manners in which architecture and urban development affect behaviours that can be measured and analysed. The human brain can inherently elicit affective reactions to endogenous and exogenous stimuli. According to Damasio (Tomaz & Giugliano, 1997), emotional generation occurs within the brain and manifests throughout the entire body. The cognitive responses of the brain are conveyed through nonverbal cues such as facial expressions, bodily gestures, and attitudes. (Ekman, 2004). The impact of emotions on individuals' mental states is significant, whether consciously or unconsciously perceived, as emotions are interpreted by the brain as mental experiences of bodily states, thereby influencing how people feel.

Consequently, this leads to changes in behaviour and well-being. What are the environmental variables that may impact affective states? What is the underlying mechanism responsible for this phenomenon? The human brain constructs the subjective representation of the external world through the integration of sensory inputs from different modalities. The human brain possesses an inherent capacity to respond to specific stimuli with affective reactions, which function as a means of ensuring

survival. A range of attributes, including but not limited to size, shape, colour, proportion, temperature, smell, movement, sound, and bodily sensations, can elicit unique emotional reactions in the human brain, either independently or in combination. As a result, it is common for individuals to alter their behavioural patterns in response to the influence of emotions. When individuals encounter fear, they typically manifest more self-oriented and vigilant behaviours while demonstrating decreased levels of gregariousness and ingenuity. When individuals experience anger, they may display increased impulsivity and aggression. The potential impact of emotional states extends beyond outward behaviour and can also influence the process of memory acquisition and consolidation. Individuals may display modified behaviour due to changes in their physiological states, which may transpire without explicit recognition, despite the lack of conscious awareness of certain emotions. The phenomenon of emotional states impacting individuals' perceptions of their surroundings and circumstances is a subject of noteworthy significance.

Individuals experiencing joy may perceive their surroundings as aesthetically more pleasing and potentially even more vibrant than those experiencing sadness. According to the neuroscientist David Eagleman, it can be posited that our perception of reality is primarily influenced by the internal processes of our brain rather than external stimuli. In summary, the interplay between the sensory faculties, affective states, and the encounter with architectural structures and conduct is a multifaceted and reciprocal process. The perception of architecture can be influenced by emotional states, despite the constant physical space. Conversely, the discipline of architecture has the potential to elicit sensory perceptions and evoke diverse affective states that can influence human conduct and the overall encounter with architectural structures. (Alvarado et al., n.d.).

### **1.4.3. Emotional mapping case studies**

In understanding the psychological influence of urban planning, emotion mapping case studies must be analysed to provide insight into how urban design affects citizens' emotional well-being. This knowledge can help designers construct urban areas that are more human-centred and enhance social and emotional well-being. And finding repair areas by emotion mapping might assist in identifying sections of a community that are particularly problematic or provoke unpleasant emotional responses from individuals. This data can be utilised to determine which upgrades and actions will have the most impact on enhancing the emotional experience of residents.

In addition, case study analysis helps assess the effectiveness of regeneration activities. By measuring changes in inhabitants' emotional experiences over time using emotion mapping, we can evaluate the success of regeneration initiatives and highlight places where additional improvements are required.

Overall, evaluating case studies of the application of emotion mapping in the revitalization of modernist communities can aid in the creation of more people-centred, emotionally satisfying urban places that promote social and emotional health.

Tabel 2: Case studies analysis

No	Case study	Purpose of the research	Methodology applied	Advantages	Disadvantages
1.	Křižáky, Příbram, Czech Republic (Páne & Pászto, 2017)	academics explore political dealignment and demobilization (Howard, 2003) because of the political corruption	Questioner surveys	Community members can think spatially about their environment and physically locate their opinion/preferences on the map through participation in participatory mapping.	A normal distribution dictates that 66% of the data should fall within the ellipses. Therefore, these ellipses were placed above the groups to illustrate the group points' primary direction and to specify the "core" portions within the groups. The number of clusters generated by a grouping analysis is always precisely the number specified by the user.
2.	Reykjavík, Iceland (Páne & Benediktsson, 2017)	The objective of the survey was to gather data from individuals who utilise bicycles regarding their affective reactions to cycling paths within Reykjavík.	The objective of the study was to document the responses of cyclists in Reykjavík to the different routes and locations they encounter.	As a participatory technique in urban design, Reykjavik features bike routes that serve as an empirical illustration of emotional mapping. Furthermore, the provision of valuable information to	Maps have become critical communication tools between residents and local governments because of the democratization of cartography.



				planners is essential.	
3.	<b>Mitzpe Ramon</b> – Israel (Rofé & Weinreb, 2013)	Map emotions in Mitzpe Ramon was part of a long-term anthropological investigation exploring the impact of space, place, and landscape on the daily lives of residents of a remote desert hamlet.	Five feeling maps were utilized to extract individuals' feelings regarding various settings more systematically.	Personal associations were a prime example of intangible and subjective emotions that were much more closely tied to memory than anything immediately visible.	Conducting a content study of the words people use to describe why they feel happy or terrible lays the foundation for additional investigation. It is insufficient.
4.	Wuhan city, China(Ma et al., 2021b)	The city of Wuhan has implemented a comprehensive approach to urban development by utilising social media big data to analyse text emotion, incorporating dynamic traffic elements, and establishing a multidimensional measurement index system based on five key	The methodology employed in the study comprises a four-step process. The present study aims to conduct an emotion analysis of social media data texts within the designated study area. Additionally, the	The present study aims to establish an index system for examining the spatial structure and attributes of the urban built environment within the designated study area. Additionally, the study seeks to explore the potential correlation between various elements of the urban built environment and emotional	Weibo texts were rated using famous phrases and symbols. Due to the variety of Chinese expressions, the method does not convey users' sentiments precisely and completely.

		<p>dimensions: land use, spatial form, road and traffic, green space and open space, and daily life service facilities.</p>	<p>investigation will focus on identifying the spatial distribution characteristics of emotions within the same study area. The present study aims to establish an index system for examining the spatial structure and attributes of the urban built environment in the designated area. Additionally, the study seeks to explore the potential association between various components of the urban built environment and emotional responses, utilising the Geographically Weighted Regression (GWR) technique.</p>	<p>responses, utilising the Geographically Weighted Regression (GWR) technique.</p>	
5.	<p>Warsaw Poland (Węclawowicz, n.d.)</p>	<p>It was projected that spaces incorporating Alexander's patterns would be</p>	<p>Alexander's patterns, Panoramic photos and analysis of the</p>	<p>This was the first empirical examination of Alexander's pattern language theory,</p>	<p>. The detected feelings can be wrong or faked</p>

		more significant than spaces lacking identifiable patterns. The more patterns detected in a place, the more meaningful it is.	reactions and feelings from the pictures	which can be a start for the other research	
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The case studies have almost the same approach to exploiting emotion mapping in developing urbanism. Building community engagement as emotion mapping can be used to engage with residents and involve them in the regeneration process. By soliciting feedback and input from residents, designers can create more inclusive and community-driven urban spaces that better meet the needs of residents (Table 2). The most important insights regarding the cases study were the following:

- The importance of studying the neighbourhoods.
- The emotion mapping helped to enhance sustainability.
- Emotion mapping helped to implement the idea of smart cities by studying the public space, access, facilities, etc.
- Emotion mapping helped to integrate people's opinions into design decisions by studying the opinion of people towards their areas.
- Social media can be a strong emotion mapping tool (Wuhan case study).
- The surveys or the interviews might be difficult as they can be faked or even impossible, so multi-tools are needed using emotion mapping for urban design purposes.

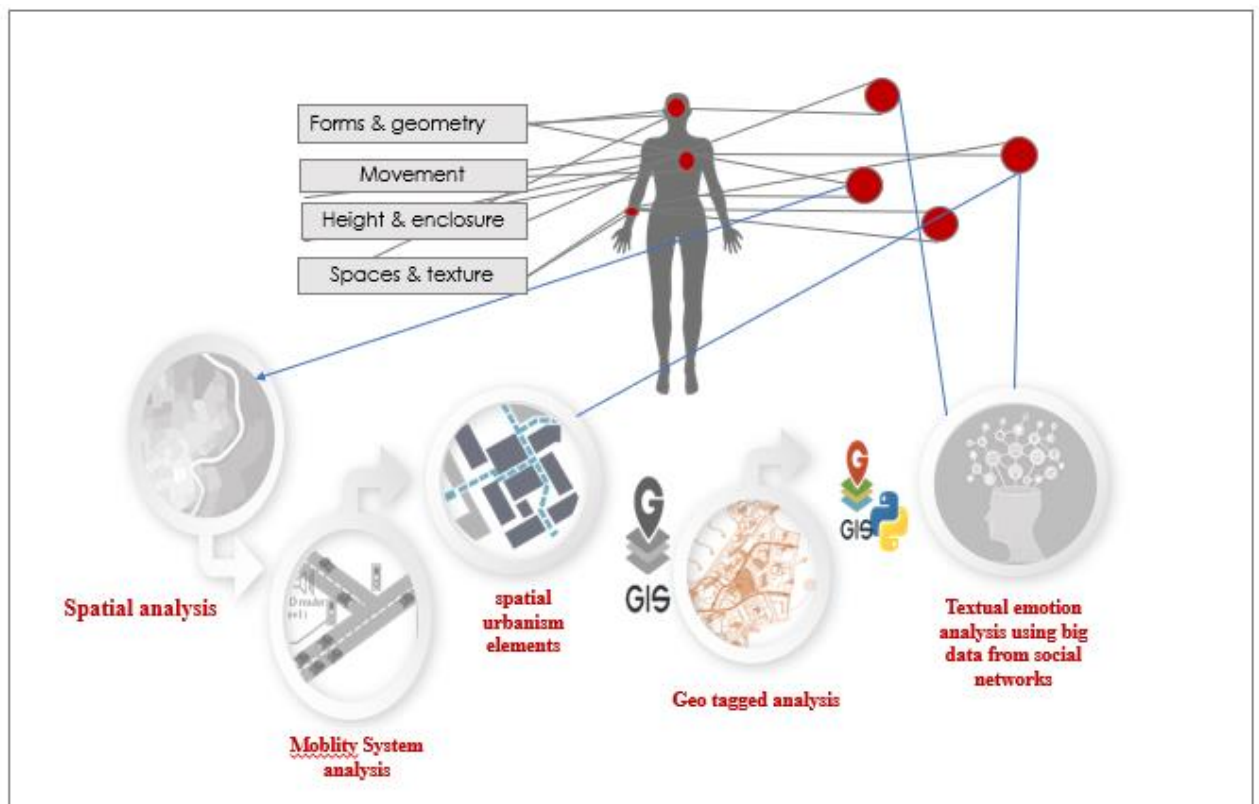
### **1.5. Hypothetical proposals for the use of emotion mapping in the regeneration of modernist neighbourhoods**

The hypothetical idea is to analyze the modernistic neighbourhoods of Kaunas and try to notice the problems via and utilizing the instrument of emotion mapping and what is the consequence of it, and how people feel when under the influence of the modernist environment. The goal is to create "feeling maps," which depict people's emotional responses to their surroundings as they walk through a city, and then conduct a second study to determine how to improve the feelings of those who perform poorly on the emotion test by redesigning the urban pattern. The objective is to employ this technology in Kaunas and help renovate and regenerate the modernist neighbourhood. Some of these areas can be residential areas and public spaces.

To help the researcher understand the participant's perspective on the landscape and architecture and to create a connection between people and architects, emotion maps may be used in conjunction with cognitive mapping methods and environmental preference methodologies. Creating and maintaining settings that are physically appealing, friendly, and emotionally engaging for a wide spectrum of individuals could be possible by applying this strategy in any situation.

The study's examples and case analysis of emotion mapping reveal persistent technical challenges in the practical application of this interdisciplinary question. While geographic statistics in case studies may appear to provide compelling evidence, several critical processes necessitate an expert's involvement. These include establishing optimal parameters for the analytical tool, conceptualising spatial distances, and determining the appropriate number of groups to target. Naturally, there are procedures available for the optimal determination of these configurations; however, the procedure necessitates the involvement of a proficient statistician with substantial expertise.

Integrating qualitative and subjective data can furnish pertinent spatial and temporal information, providing supplementary data to conventional quantitative GIS data in local planning and community development. The utilisation of emotional maps enables non-experts to participate in local governance and decision-making procedures while furnishing crucial insights into their community. Numerous unresolved inquiries remain regarding visualisation, facilitating a comprehensive depiction of the phenomenon. (Fig.5).



**Fig .5.** Hypothetical proposal graphical scheme (by the author).

## **2. Empirical research: application of emotional mapping in Kaunas City**

### **2.1. Research program**

The research was performed on 61 participants and targeted all the ages between 18 and 65+; the survey was performed on residents of Kaunas and mostly Dainava. All the participants tagged their location (Fig. 6, 7) to study their emotions related to their Neighborhood. 85 % were obviously from Dainava, 15 % were Kaunas residents but knew Dainava, and 15 % of the 85 % were local Lithuanian residents. The rest were newly moved to the district; 75% of the respondents. Men were the significant number of participants, and more than 50% were highly educated people, as shown in Fig. 5

The questions were intended to clear out the general public opinion about the place, and the other part was the no-spatial questions showing the urban society engagement. Public participation aims to achieve the best possible outcome and ensures citizens' needs are heard and considered. All citizens have had the opportunity to share their opinions and sentiment. It encourages engagement and democratic participation at the same time. It's a two-way factor that allows them to express their values and help conduct the research.

The revitalisation of modernistic districts could be proceeded using these hypotheses, in which the emotion mapping could contribute to the evaluation of the quality of life and urbanism and the emotions of people can be translated to the spatial solutions enhancing the fabric of urban areas and buildings and spaces in Modernistic districts. The working hypothesis (Table 1) will lead.

Empirical research aims to find a strategy for how the usage of emotional mapping could revitalise modernistic city districts:

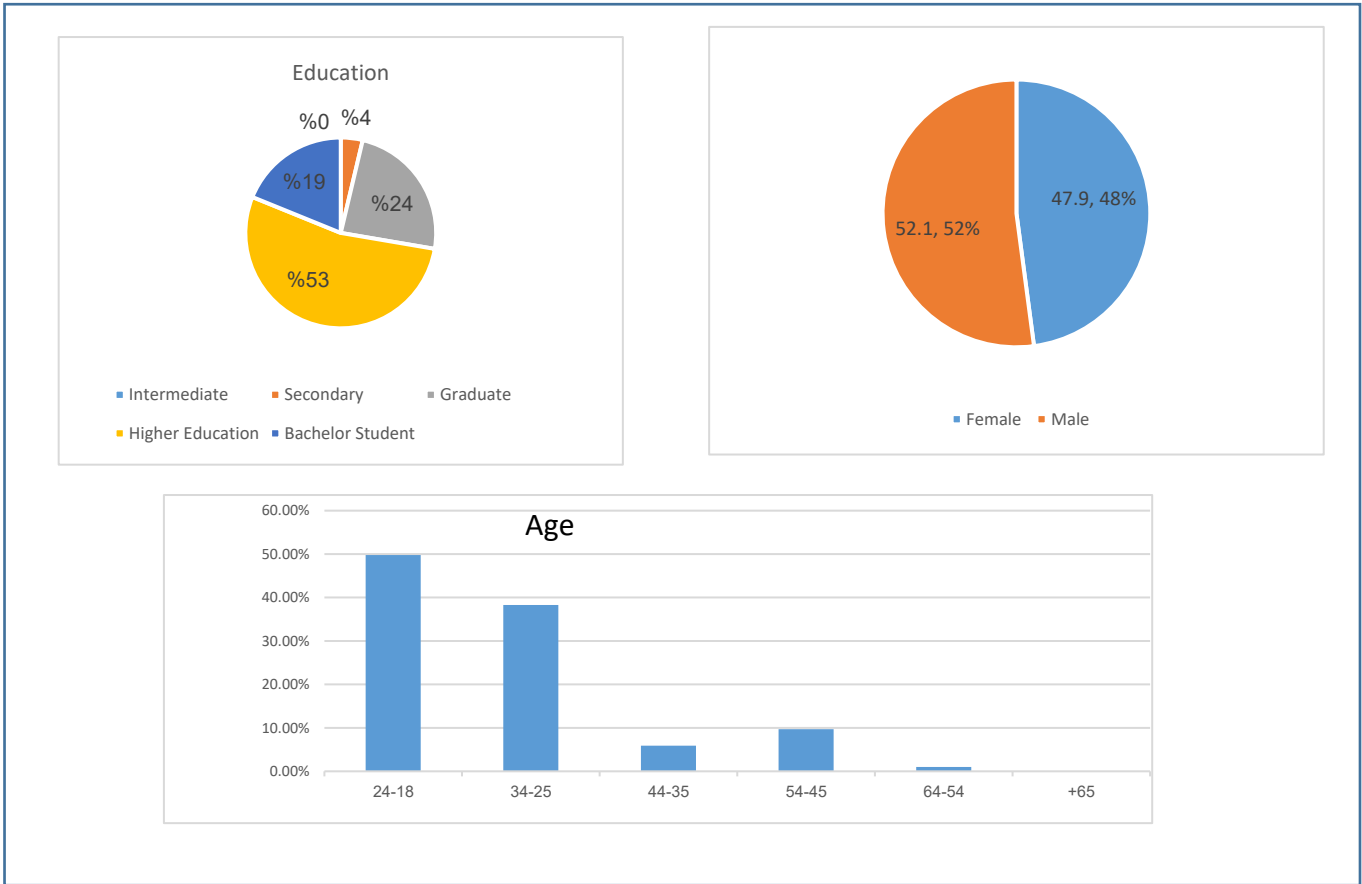
Applying them to propose spatial regeneration and development of modernistic neighbourhoods on an urban scale.

Validating the theory of using emotion mapping to solve the problem of modern urbanism in Kaunas from the Soviet Period and how it affects people by testing and analysing the emotional reaction that has occurred.

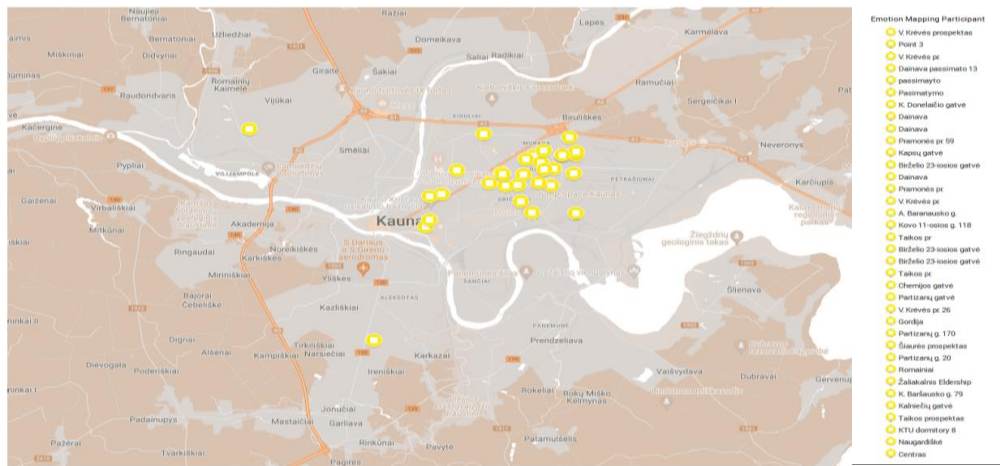
Table 3. Working hypothesis .

<b>Working hypothesis</b>	<b>Research object</b>	<b>Research Method</b>
The main emotions of people are that they feel for the district they live in. Can be translated to the benefits of enhancing the fabric of urban areas – buildings and spaces in Modernistic districts. Their reorganisation could improve the interaction between the buildings, residents, and the environment.	Modernistic district of Dainava / People	Visual analysis, questionnaire, geo- tagged maps
Apply the method of emotional mapping to the different scales of the Neighbourhood: streets, buildings, Spaces	Modernistic district of Dainava / Public spaces and buildings	Visual Analysis
Emotional maps of streetscapes could help to designate the most attractive and repulsive sections of the streets and to identify the spatial factors creating them	Modernistic district of Dainava / People and walk paths	Geo-Tagged maps -visual analysis
Emotion maps can allow for the identification, creation, and maintenance of physically appealing, friendly, and emotionally engaging settings for a wide spectrum of individuals by applying this strategy in any situation.	Modernistic District of Dainava / People's Interaction with Landscape and Architecture	Geo-Tagged maps -visual analysis, sentiment analysis- survey
Emotional mapping could help to identify quarters with a dispersed internal spatial structure that creates the feeling of alienation. They may be considered as the areas suitable for urban fabric densification and rearrangement of spaces (buildings and public spaces).	Modernistic District of Dainava / People's Interaction with Landscape and Architecture	Geo-Tagged maps -visual analysis, sentiment analysis
Residents' involvement in early project processes can help identify urban spaces with the greatest potential and reveal essential flaws of existing spaces.	Modernistic district of Dainava / People's emotions	Surveys, visual analysis, geo- tagged maps
Using emotion mapping to develop the modernistic district will help to establish different publicity levels of urban spaces and good quality structures that enhance the quality of life/emotion and usage of those spaces.'	Modernistic district of Dainava / urban layer of the district and environment /people's emotions	Space syntax, survey, visual analysis

The project intends to validate the theory of using emotion mapping to solve the problem of modern urbanism in Kaunas from the Soviet Period and to measure how it affects people by testing and analysing the emotional reaction that has occurred because of these designs.



**Fig.6.** Education, age, and gender (by the author).



**Fig.7.** Participants Geo-tagged (by the author).

## **2.2. Research results**

### **2.2.1.1. Sociological research**

Sixty-two people participated in the sociological survey. Most of the answers were from a group of respondents 18-24 years old (Fig. 5). It shows that the new generation wants a change in their environment and neighbourhood.

### **2.2.1.2. Quality of life (non-spatial questions)**

It's essential to measure facts related to emotions and wishes. In the questionnaire, the questions to determine the quality of life were the following:

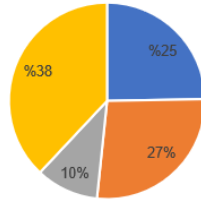
- Overall, how much do you like living in Dainava Neighbourhood?
- How strong is the sense of community in the Dainava district?
- How clean is Dainava?
- How well are the streets in the Dainava neighbourhood maintained?

These questions in this part were designed primarily to assess the quality of life in the neighbourhood by asking a question on a scale of strength and feeling sense, for ex., very strong, exceptionally well, very safe, to give the person the feeling of giving an opinion rather than a rating, which will aid in testing emotions and measuring the perceived environmental quality of life. A confirmatory factor analysis was done on the second sample of 62 participants using this component structure. The excellent fit of the measurement model to the data and the factorial structure's stability corroborate the developed scale's psychometric solid properties.

The results show that 38 per cent of people who live in Dainava don't like it, and only 10 per cent do. In comparison, (Fig. 8) 56 per cent of them don't feel a sense of community, which can be related to why they don't like it. However, the answer to the question about the clean and maintained neighbourhood was positive, with 47 percent and 63 percent answer with to some extent well respondents accordingly, which means the intangible feelings towards the neighbourhood need to be improved to make it more desirable while The tangible environment may be made more emotionally friendly, which can have a positive effect on a variety of elements of life, such as productivity, social interactions, physical and mental health, and general quality of life. Individuals' and communities' well-being and quality of life may be significantly improved by changing the tangible environment.

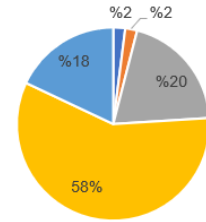


- Overall how much you like living in Dainava Neighborhood?



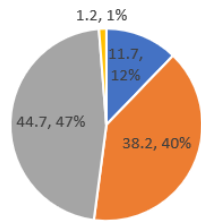
- A lot ■ A moderate amount ■ A little ■ I don't like it

- How Strong is the Sense of community in Dainava district?



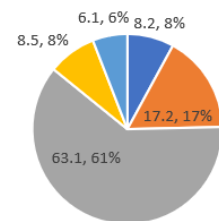
- Extremely strong ■ Very strong ■ Somewhat strong ■ Not so strong ■ Not at all strong

- How clean is Dianava?



- Extremely clean ■ Very clean ■ Somewhat clean ■ Not so clean ■ Not at all clean

- How well are the streets in Dainava neighborhood maintained?



- Extremely well ■ Very well ■ Somewhat well ■ Not so well ■ Not at all well

**Fig.8.** Survey Results for Quality-of-Life questions (by the author).

### 2.2.1.3. Urban society engagement (spatial questions)

Incorporating community-engaged methodologies is a crucial aspect of a comprehensive research approach that incorporates individuals' and communities' feedback, participation, and viewpoints, which are fundamental to the topics being examined. The intention, as mentioned earlier, has the potential to streamline the design phase and maintain its relevance throughout the process of generating insights and recommendations. The degree of involvement in research can fluctuate, ranging from the rigorous community-based participatory research model, where community representatives are regarded as partners in the study, to the less demanding community consultation approach, where community stakeholders and residents offer input during various stages of a research project, particularly in the design phase.

Community-engaged strategies cultivate a community's assets and strengths, enhancing the effectiveness and sustainability of policy proposals. As a result, urban researchers should engage the community more often to develop study designs and promote fairness and inclusion. The questions used in the questionnaire were the following:

How Safe do you feel in your neighbourhood?

How do You feel about old Buildings?

How do you feel when you enter your neighbourhood?

What do you like most about your neighbourhood?

People were testing their emotions with these questions and paying attention to the fact of how they felt towards buildings and their neighbourhood.

This division's results indicate that participants felt relatively comfortable in their area, which is a positive indicator because the roads and entrances are well-designed. On the other side, the sentiment about old structures is either sad or extremely sad (Fig. 9). And the majority of those who appreciate parks and open space in their areas do so because it helps them feel good about themselves and their communities.

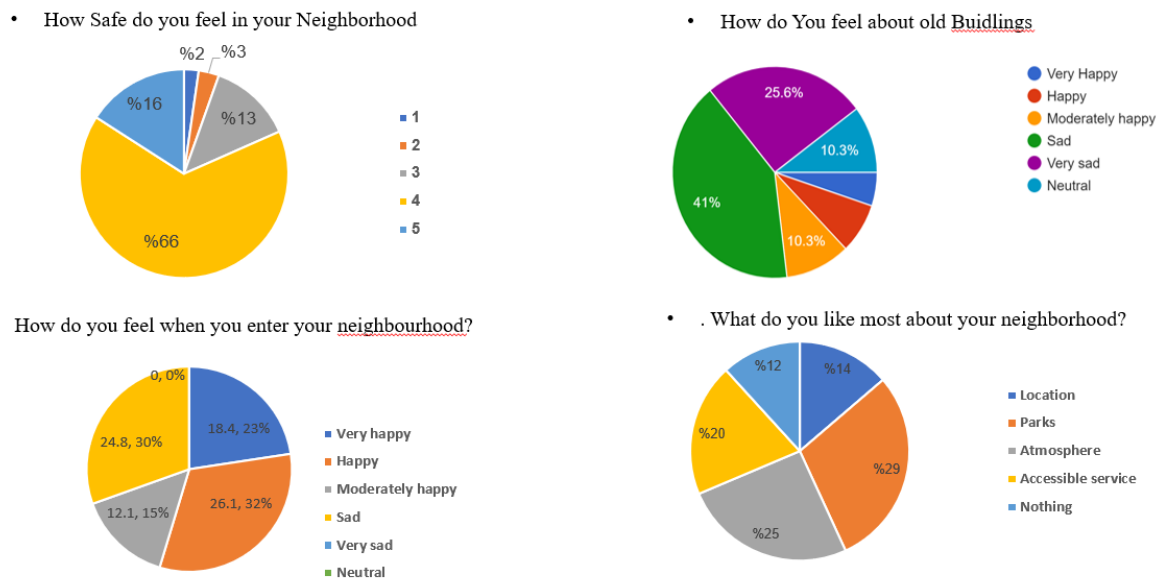


Fig. 9. Survey result of Urban society engagement (by the author).

The activities that participants like and do in their neighbourhood are walking and visiting parks which give an idea that enhancing the sidewalk and designing more parks will positively affect the neighbourhood's emotions and also will improve the communication between the neighbourhood residents (Fig. 10).

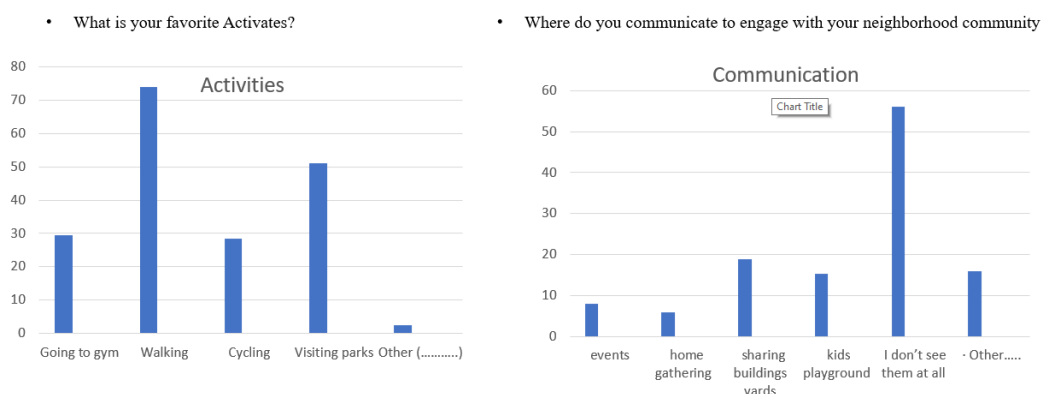


Fig. 10. Survey result of Urban society activities (by the author).

### 2.2.2. Urban Visual Analysis

The visual appearance of a city is a critical aspect of urban planning, as each decision made in the planning process can alter or impede various aspects of the city, ultimately impacting its overall aesthetic appeal. The utilisation of viewshed analysis can facilitate an objective assessment of the worth and consequences of spatial alterations. Spatial planning is a strategic approach aimed at achieving equilibrium among the state, the market, and the community requirements. The development of transformative strategies, innovation action, and performance in spatial planning is distinguished by three discrete methodologies for involving stakeholders, incorporating sectoral policies, and advancing development initiatives across the three schools.

The Collaborative School prioritises the inclusion of stakeholders in both the planning and decision-making processes. The approach advocated for is collaboration, wherein diverse stakeholders, such as government agencies, civil society organisations, private sector entities, and citizens, engage in joint efforts to identify mutual objectives and devise collective remedies. The approach mentioned above endeavours to establish a perception of possession and responsibility among involved parties, guaranteeing that the planning procedure incorporates the interests of all individuals.

The Integrative School is an educational institution that prioritises integrating sectoral policies and objectives to advance sustainable development. The approach being advocated emphasises the recognition of interconnections between various sectors, including but not limited to land use, transportation, housing, and economic development. This approach endeavours to enhance coordinated and coherent planning and decision-making by considering the interrelated impacts of various policies. (Spennemann, 2022) ,(Banister & Hickman, 2013)


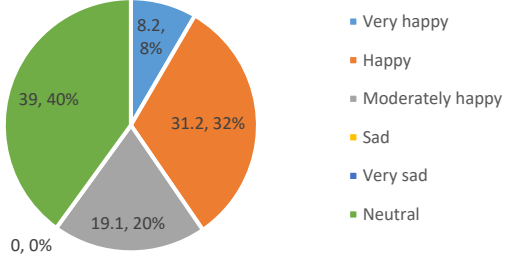

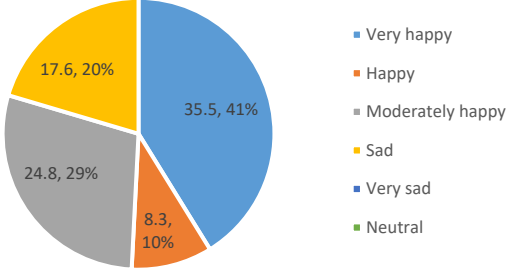

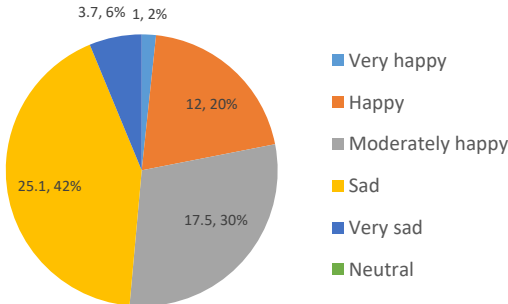
The Innovative School prioritises the promotion of development projects that have the potential to bring about significant and lasting change. The advocated approach promotes experimentation and innovation, wherein novel ideas and solutions are subjected to testing and refinement. The methodology endeavours to cultivate inventiveness and enterprise, advancing the growth of novel technologies, commercial frameworks, and communal customs. Collectively, the aforementioned educational institutions present distinct viewpoints on developing innovative tactics, each with unique merits and drawbacks. Determining the optimal approach depends on the specific circumstances and objectives of the planning process. The concept of sustainable development and sustainability in space has long been a topic for planners within a spatial framework. Urban planners must effectively manage and reconcile various social, economic, environmental, and amenity concerns.

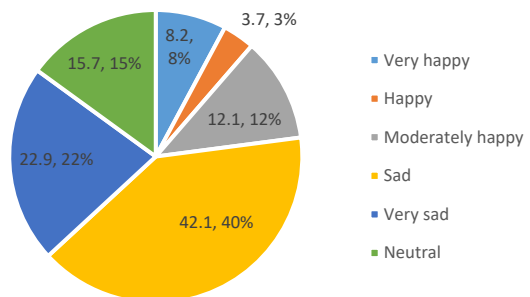
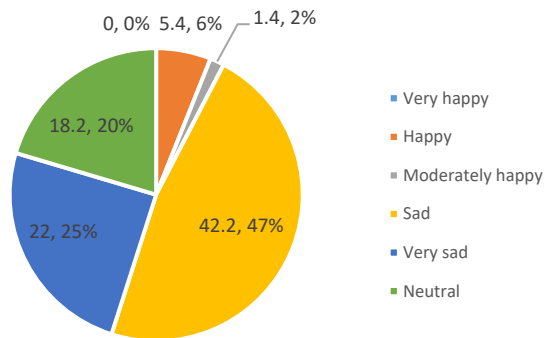
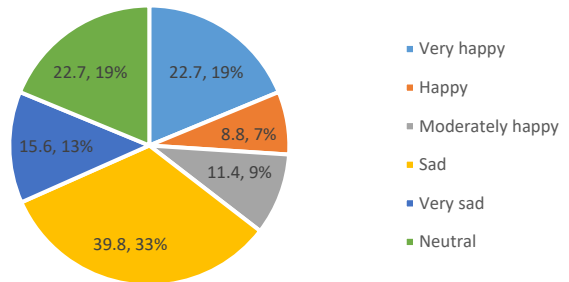
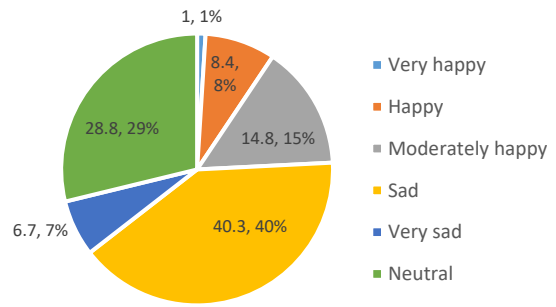
Nevertheless, given the current emphasis on sustainability, a broader range of interests necessitates mediation. In order to achieve this objective, sustainability has been translated into a set of planning regulations. For an urban area to be considered favourable for development, economic progress and environmental sustainability must be aligned to foster positive public sentiment. The so-called Image rating technique was used here to measure the level of happiness related to the local spaces, streets and buildings. There were proposed six levels of happiness: very happy, happy, moderately satisfied, sad, very sad, and neutral. Nineteen photos were organised into three main groups: spaces (6 images, including car parks and open spaces, pedestrian areas, and common areas for buildings), built environment and buildings (8 images of different types of buildings, such as homes, schools, businesses, and supermarkets), and streetscapes (6 images), which include the main road, a sub-road,

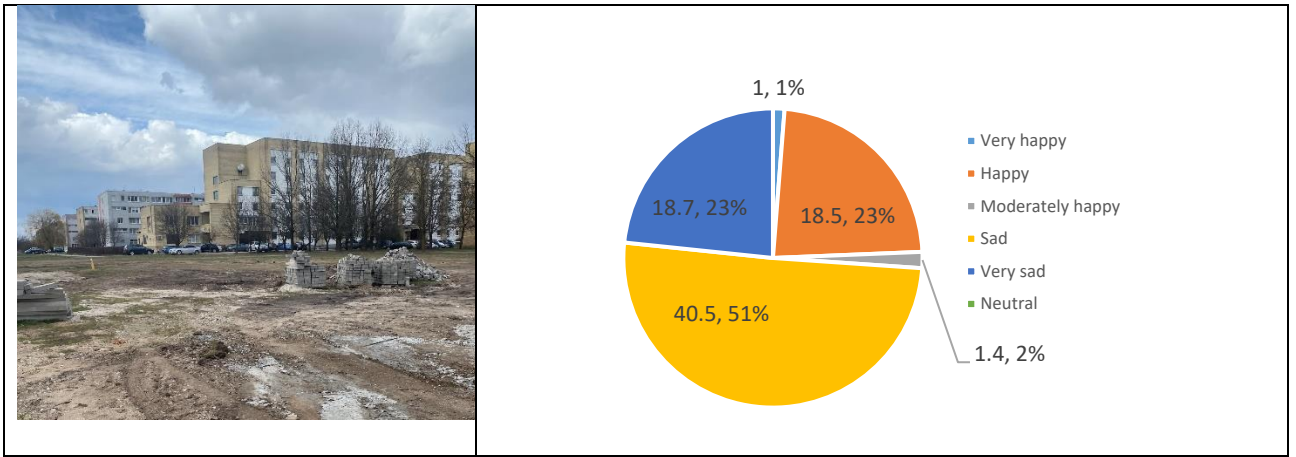
and neighbourhood roads. It was tough to choose the pictures for the urban visual analysis because the urban design elements in these pictures had to fit into the urban pattern of modernist areas or have at least some things in common with Dainava. Vibes and features are repeated too much, so defining them differently is difficult. It is through having experimental visual pictures that show different elements of Dainava as it is the familiar shape and function to test their emotion toward it.

The answers to the question about the feelings towards the buildings indicate that people are pleased with modern buildings, even if they are not performing well in the district's typology and identity. Still, all answers about Soviet-era buildings in all aspects were negative, and people were unhappy with them. Considering such results, we can state that redesigning and renovating the old building could give more vitality, pleasant emotions, and energy. (Table 4).

Table 4. Buildings in Dainava – Visual analysis results.


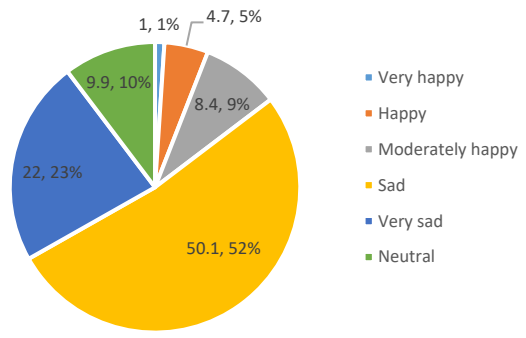

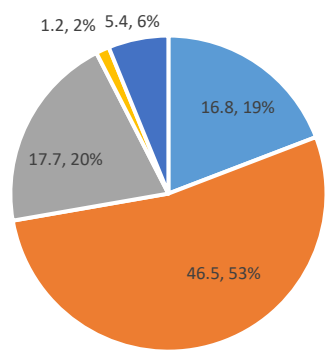

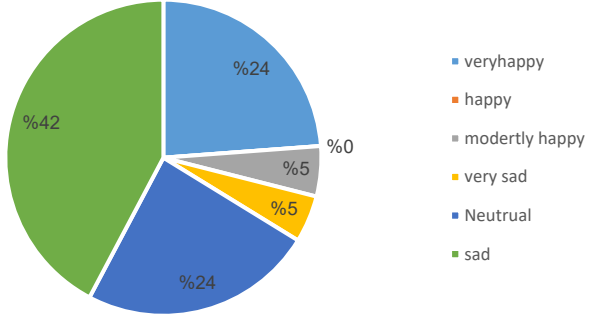
Building	Analysis result
	 <ul style="list-style-type: none"> <li>Very happy</li> <li>Happy</li> <li>Moderately happy</li> <li>Sad</li> <li>Very sad</li> <li>Neutral</li> </ul>
	 <ul style="list-style-type: none"> <li>Very happy</li> <li>Happy</li> <li>Moderately happy</li> <li>Sad</li> <li>Very sad</li> <li>Neutral</li> </ul>
	 <ul style="list-style-type: none"> <li>Very happy</li> <li>Happy</li> <li>Moderately happy</li> <li>Sad</li> <li>Very sad</li> <li>Neutral</li> </ul>





Participant responses about their feeling towards spaces varied, as evidenced by the fact that areas with children's activities elicited positive feelings and elicited happiness. In contrast, spaces between modernistic buildings elicited a more sombre and guarded response, as people felt a mixture of sadness and fear due to the intensity of the feelings elicited by their surroundings. On the other hand, people were positively happy about spaces with landscape designs and good car parking. And this demonstrates the influence of urban design quality on emotions (Table 5).

Table 5. Spaces in Dainava – visual analysis results

Space	Analysis result
	 <ul style="list-style-type: none"> <li>Very happy</li> <li>Happy</li> <li>Moderately happy</li> <li>Sad</li> <li>Very sad</li> <li>Neutral</li> </ul>
	 <ul style="list-style-type: none"> <li>Very happy</li> <li>Happy</li> <li>Moderately happy</li> <li>Sad</li> <li>Very sad</li> </ul>
	 <ul style="list-style-type: none"> <li>veryhappy</li> <li>happy</li> <li>modertly happy</li> <li>very sad</li> <li>Neutrual</li> <li>sad</li> </ul>

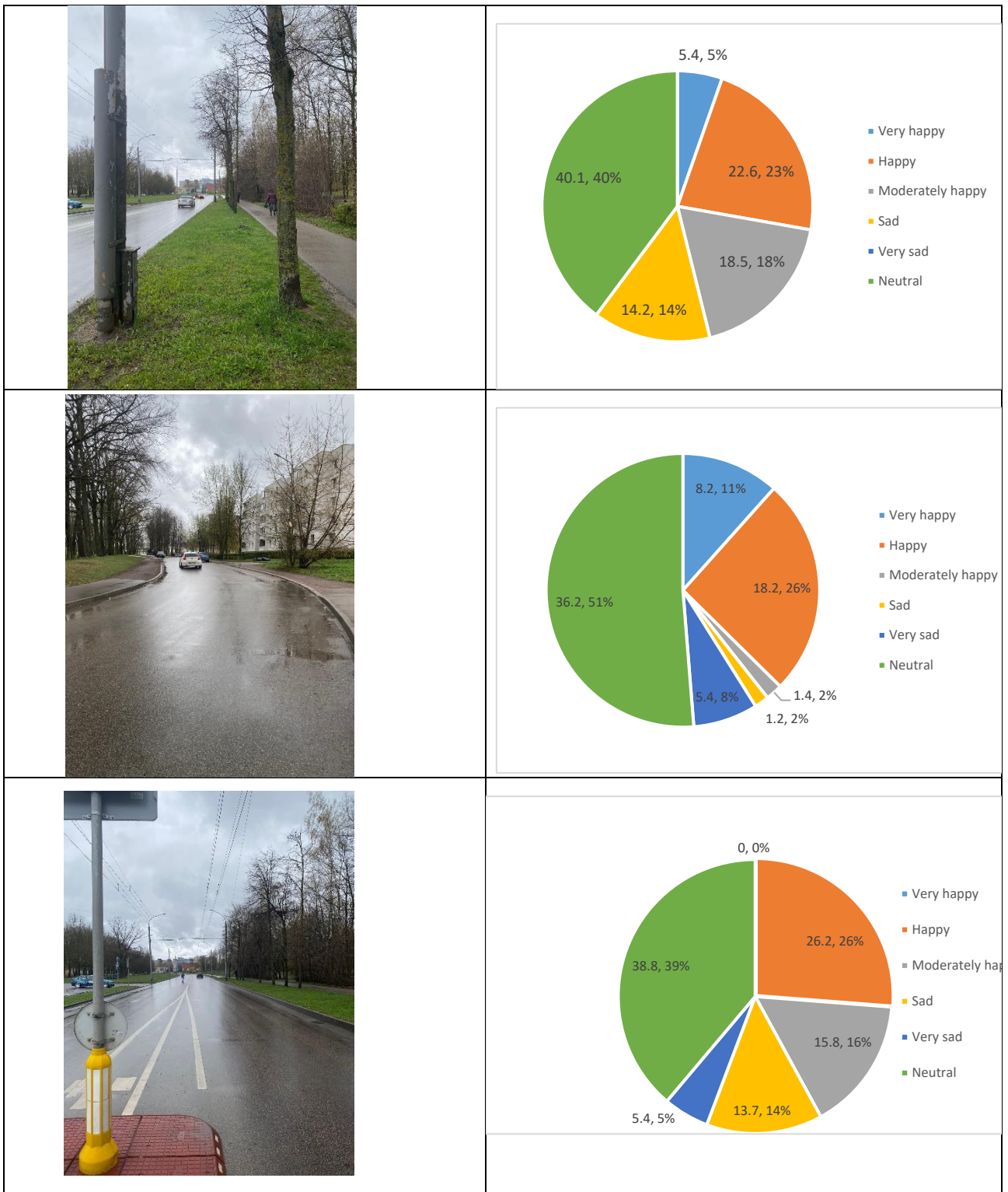


Evaluating streetscapes, the participant responses varied greatly from picture to picture. Still, it was clear that sadness was the predominant emotion, even when there was greenery in the street, or the evaluation was neutral because the street has a function, and since it serves a purpose, human beings will not react to it positively (Table 6). Nevertheless, I believe that the sense of old buildings has a negative effect on the feeling of the street itself, but the idea that people love walking can lead us to the conclusion that providing more designed walking routes might enhance the happiness on the streetscapes.



Table 6. Streetscapes in Dainava – visual analysis results

Streetscapes	Result														
	 <table border="1"> <thead> <tr> <th>Emotion</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Very happy</td> <td>11.8, 12%</td> </tr> <tr> <td>Happy</td> <td>6, 6%</td> </tr> <tr> <td>Moderately happy</td> <td>15.4, 16%</td> </tr> <tr> <td>Sad</td> <td>32.9, 33%</td> </tr> <tr> <td>Very sad</td> <td>1, 1%</td> </tr> </tbody> </table>	Emotion	Percentage	Very happy	11.8, 12%	Happy	6, 6%	Moderately happy	15.4, 16%	Sad	32.9, 33%	Very sad	1, 1%		
Emotion	Percentage														
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Very sad	1, 1%														
	 <table border="1"> <thead> <tr> <th>Emotion</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Very happy</td> <td>8.2, 7%</td> </tr> <tr> <td>Happy</td> <td>26.2, 24%</td> </tr> <tr> <td>Moderately happy</td> <td>15.8, 15%</td> </tr> <tr> <td>Sad</td> <td>13.8, 13%</td> </tr> <tr> <td>Very sad</td> <td>5.4, 5%</td> </tr> <tr> <td>Neutral</td> <td>38.8, 36%</td> </tr> </tbody> </table>	Emotion	Percentage	Very happy	8.2, 7%	Happy	26.2, 24%	Moderately happy	15.8, 15%	Sad	13.8, 13%	Very sad	5.4, 5%	Neutral	38.8, 36%
Emotion	Percentage														
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Very sad	5.4, 5%														
Neutral	38.8, 36%														
	 <table border="1"> <thead> <tr> <th>Emotion</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Very happy</td> <td>43.1, 43%</td> </tr> <tr> <td>Happy</td> <td>13.8, 13%</td> </tr> <tr> <td>Moderately happy</td> <td>15.8, 15%</td> </tr> <tr> <td>Sad</td> <td>13.8, 13%</td> </tr> <tr> <td>Very sad</td> <td>5.4, 5%</td> </tr> <tr> <td>Neutral</td> <td>8.2, 7%</td> </tr> </tbody> </table>	Emotion	Percentage	Very happy	43.1, 43%	Happy	13.8, 13%	Moderately happy	15.8, 15%	Sad	13.8, 13%	Very sad	5.4, 5%	Neutral	8.2, 7%
Emotion	Percentage														
Very happy	43.1, 43%														
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Sad	13.8, 13%														
Very sad	5.4, 5%														
Neutral	8.2, 7%														



### 2.2.3. Geo-tagged Emotion mapping (Interactive Map)

The method of "emotional mapping" is utilised in participatory planning to facilitate discussions between residents and municipalities regarding the present and future state of public space, drawing on their individual experiences and geographically locating them on a map. The proposed methodology entails utilising a specific subset of public participation GIS (PPGIS) techniques in conjunction with a geo-participation tool. Geo-participation employs spatial technologies to engage

individuals in their local communities. Further efforts are being made towards the development of an Emap that enables individuals to access Google Maps of a particular region and annotate locations of interest, disinterest, or avoidance. This approach facilitates collaborative efforts among individuals in urban design initiatives and fosters a sense of social identity and community membership. (Pánek, 2018). The societal and cultural effects of accessing private biometric data and emotional states through technology can yield favourable and unfavourable outcomes. The technology in question holds promise for enhancing healthcare and mental health interventions, facilitating customised experiences, and heightening safety and security measures in select contexts. Monitoring an individual's biometric data and emotional states can facilitate the detection and resolution of health concerns associated with stress or anxiety. Additionally, this data could be leveraged to customise experiences in domains such as entertainment or advertising. Furthermore, the surveillance of individuals' emotional states may serve as a means of detecting potential safety hazards in various environments, including but not limited to airports and public transportation systems.

The use of this technology presents noteworthy privacy apprehensions and has the potential to result in partiality and discrimination. The notion of monitoring and tracking biometric data and emotional states may elicit discomfort among individuals, who may perceive it as a violation of their privacy if such information is utilised without their explicit consent. Moreover, if specific affective conditions are linked to particular socio-demographic categories, there exists a potential danger that this technological advancement may be employed to perpetrate discrimination against these groups in domains such as occupational opportunities or legal justice.

The consequences of accessing private biometric data and emotional states through technological means are contingent upon how the technology is conceived, executed, and governed. It is imperative to thoroughly evaluate this technology's prospective advantages and drawbacks and guarantee that individuals possess authority over their personal data while adhering to ethical and legal protocols that regulate its utilisation. Emotions significantly affect how people see the (urban) environment and how they see a space, but they aren't often shown on maps or geographical data.

The technique of emotional mapping equips individuals with the ability to demonstrate the interrelatedness of emotions, physical environments, and geographic locations, thereby establishing that any given location has the potential to elicit a particular emotional response. In addition, it may encompass more precise emotions and concepts regarding the appropriate utilisation of communal areas. One could posit that the concept of "emotional mapping" may be deemed inaccurate as it fails to account for the mapping of other factors beyond emotions. The cartographic representations additionally depict the perceptions and emotions of individuals towards a particular location. The objective is to obtain a comprehensive understanding of individuals' preferences and aversions through their recollections, encounters, emotions, and impressions. Creating a map in a community gives people a sense of power because they can think about their surroundings and place spatially and how they feel about their environment.

So, I made five maps: three for Dainava (like, dislike, avoid) and two for Kaunas (like, dislike).

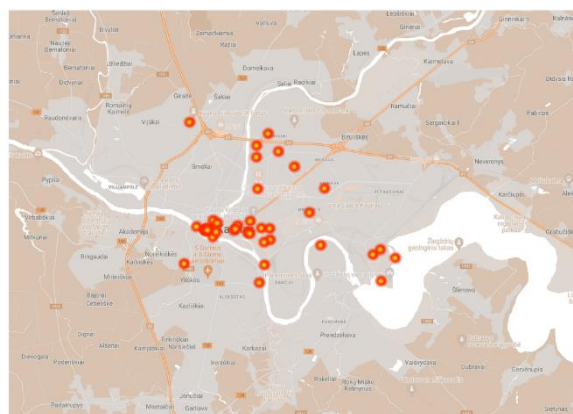
There were also questions for direct answers:

- Where do you feel is the happiest place in your neighbourhood?
- What function can make you happier if you have it near your house?
- A suggestion of what participants want for their neighbourhood.

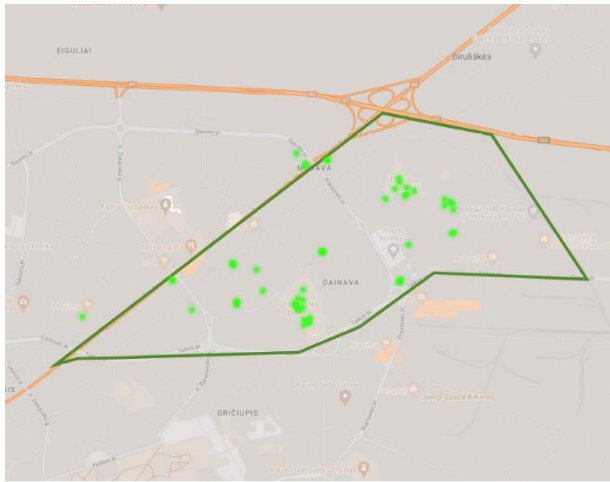
The participants utilised an internet-based mapping tool that is grounded on Google Maps to indicate locations on the map and provide responses to the three spatial inquiries outlined earlier. In addition, a total of 65 tags and over 60 proposed ideas for enhancing the subject matter were gathered. Each of the designated locations was associated with spatial references in the form of X and Y geographic coordinates. The aforementioned procedure facilitated the construction of the (geo) database, visualisation of the spatial distribution on a cartographic representation, and subsequent examination of the data. The maps presented below were generated utilising an online mapping platform and data obtained from questionnaires. Subsequently, the responses obtained from the questionnaire were manually inputted into an online platform to generate a unified geodatabase comprising all the collected data. Thus far, the predominant method for creating choice maps with spatial specificity has been through the utilisation of location-based markers or the delineation of polygons accompanied by corresponding expressions of preference. (Jankowski et al., 2015).

In contrast, Brown and Pullar (2012) advocated for the utilisation of points rather than polygons in forthcoming PPGIS implementations. Nevertheless, the scope of their research was limited to the cartographic representation of extensive landscape values. Thus it is possible that their findings may have been inaccurate. A fuzzy multi-point feature was available as a means of gathering data. (Huck et al., 2014). However, the authors made a deliberate decision to exclusively employ single points in their study, as they have found that such points tend to be more precise and location-specific based on their previous research. The present study employed a comprehensive approach by integrating all of the aforementioned methodologies. The preferred location was indicated through a hyperlink that displayed a map of Dainava, accompanied by a polygonal outline to assist users in accurately designating the area. Subsequently, the data was compiled into a Comma-Separated Values (CSV) file and subsequently visualised on QGIS maps.

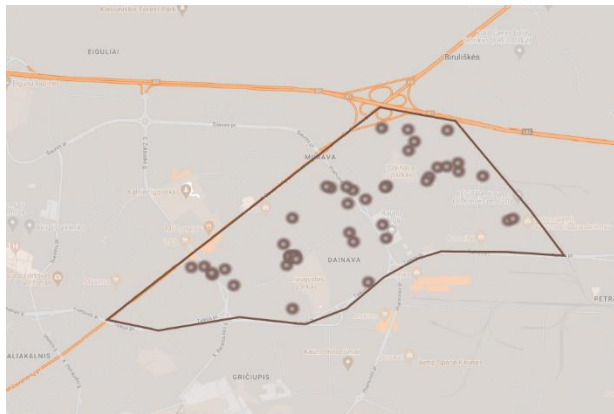
Respondents were also asked to tag the places they liked in Kaunas (Fig. 11) and Dainva (Fig. 12). Most liked points in Kaunas were: gyms, new buildings, parks, supermarkets, river waterfront, oldtown, historical buildings, and museums. This fact supports the notion that individuals need well-designed open spaces and parks or entertainment facilities that may play a significant part in developing social life and emotions.



**Fig. 11.** Mapping places that respondents like in Kaunas (by the author).



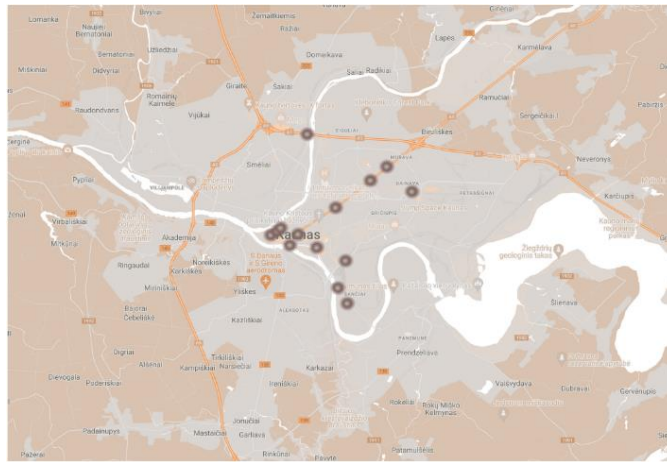
**Fig. 12.** Mapping Dainava places that respondents like (by the author).



**Fig. 13.** Emotional mapping of Dainava (dislike) (by the author).

Additionally, respondents were asked to mark the locations in Dainava that they disliked (Fig. 13). Most of the replies mention the following locations: little roads in the modernist housing area; banded buildings; construction zones; old structures; and old buildings.

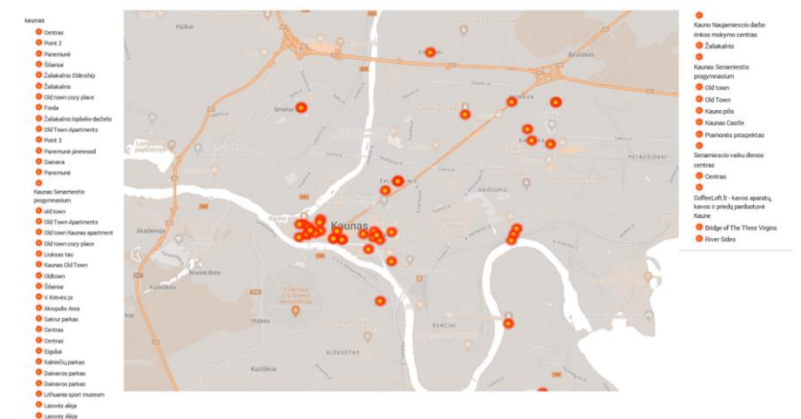
These responses demonstrate that residents are aware of the issue in the region, and it is also evident on the Kaunas city map (Fig. 14). As a result, it has been suggested that these despised and avoided places should be developed to increase residents' feelings of satisfaction.



**Fig. 14.** Emotional mapping of Kaunas (dislike) (by the author).

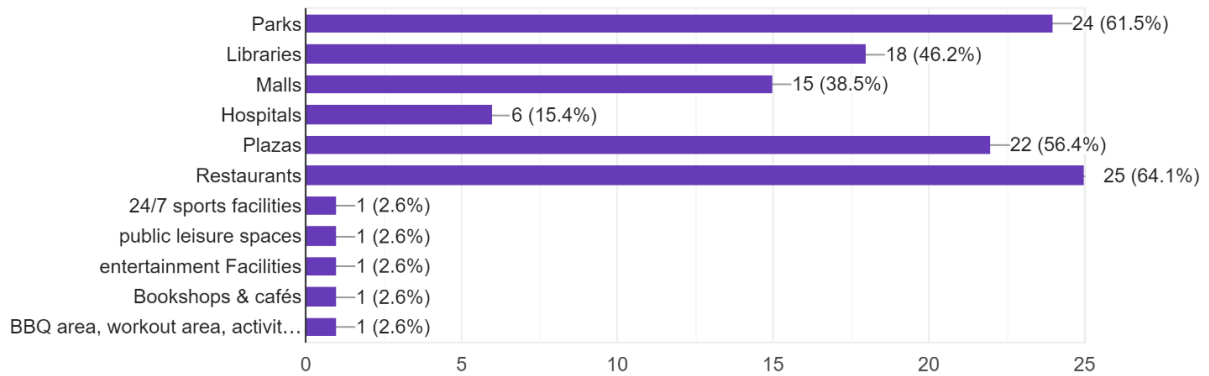


**Fig. 15.** Emotional mapping of Dainava (Avoid) (by the author).



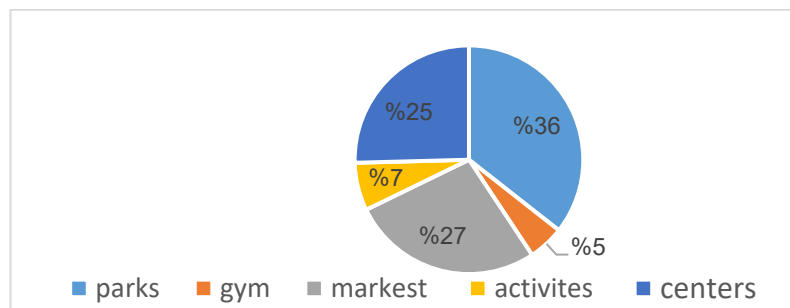
**Fig. 16.** Emotional mapping of the favourite district in Kaunas (by the author).

And according to geo-tagging, individuals were happier in parks and gyms and when they had marketplaces nearby as part of their services. Additionally, those who reside in the city centre seem to be happier than others (Fig. 16). Studying the maps and what people avoid and like, and dislike shows that there are functions that can make people happier if they would have them near their house, as in the (Fig.17).



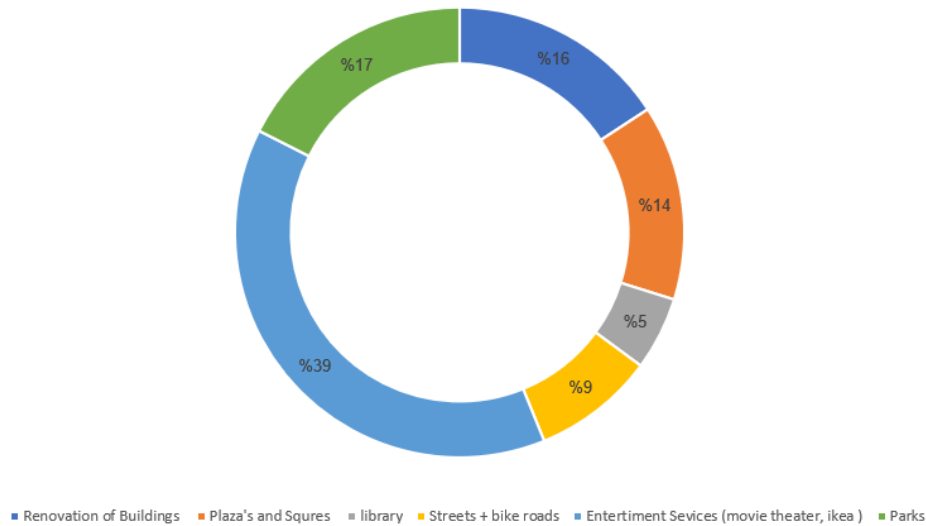
**Fig. 17.** Functions that make people happier (by the author).

Based on geo-tagging data, it was observed that individuals experienced higher levels of happiness when they were near parks and gyms and when marketplaces were readily accessible as part of their amenities. In summary, the most desired amenities that individuals expressed interest in having more of within their local communities were parks and restaurants featuring plazas, as indicated by the responses provided by the participants. (Fig. 18)



**Fig. 18.** Where do you feel is the happiest place in your neighbourhood? (By the author).

From all this method of research, people suggested things that make them happier and make them feel more satisfied with their neighbourhood. There were indicated mostly the entertainment services, such as clubs, plazas, open areas, restaurants, and coffee (Fig. 19). This choice shows that social engagement and entertainment services enhance the emotions of the neighbourhoods and help to provide a better life.



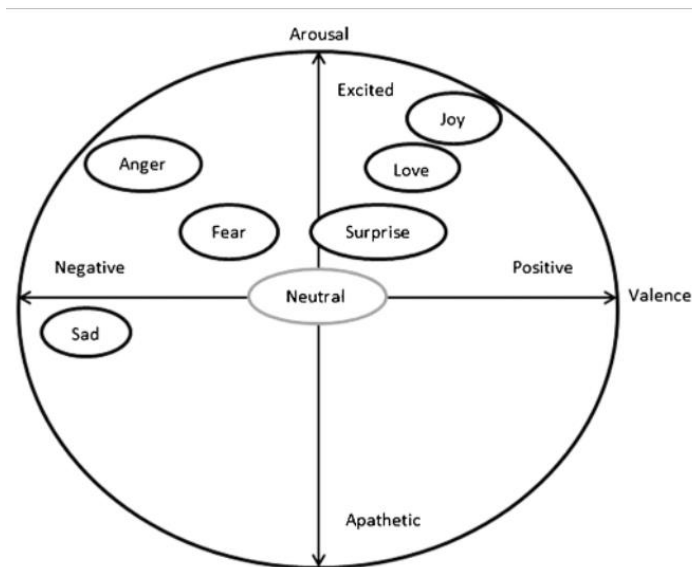
**Fig. 19.** Suggestions of what participants want for their neighbourhood (by the author).

#### 2.2.4. Sentiment analysis

Twitter is a widely recognised platform for real-time microblogging that allows its users to send concise messages, known as tweets, that are limited to 140 characters. Individuals generate tweets to express their perspectives on diverse topics that are pertinent to their daily experiences. Twitter serves as an effective platform for collecting the overall public's sentiment regarding particular topics. The principal dataset utilised for conducting sentiment analysis is a compilation of tweets that pertain to either opinion mining or natural language processing. Twitter has emerged as a valuable resource for enterprises seeking to revitalise their image and brand by gathering and analysing public sentiment regarding their products, services, markets, and competitors, with 500 million users and millions of messages exchanged on a daily basis. It has been noted that the proliferation of the internet has led to an abundance of opinion-based content in various forms, such as tweets, reviews, blogs, discussion groups, and forums. This vast amount of data makes the Internet a highly expedient, all-encompassing, and readily available platform for conducting sentiment analysis.



The process of sentiment analysis involves a broad methodology for discerning the polarity and subjectivity of semantic orientation. This pertains to the potency of language and the polarity of textual or phrasal content. The present study employs two primary methodologies for the automated extraction of sentiment, namely the lexicon-based and machine-learning-based approaches. Both methodologies were utilised due to the unavailability of data and public collection by text and ID. The study involved the application of code for analysing polarity to determine whether the sentiment expressed in tweets from Dainava was negative, positive, or neutral. Due to the limitation and privacy, it's not easy to get the tweet with Data collected, and then the polarity approach (0,-1) is used to bring emotions to a specific location (Fig.20). The coordinates and points are then used in Qgis to represent the emotion mapping for seven days due to Tweeter's authorisation limitations.



**Fig. 20.** Parrot's Emotions In the Valence-arousal Plane of the dimensional model (Bandhakavi et al., 2021).

**Analysis of Twitter Sentiment** The sentiment may be discovered in the comments or tweets and can be used to offer valuable indications for a variety of applications. Also, the mood may be divided into two categories: negative and favourable terms. Sentiment analysis is a method used in natural language processing to quantify a stated opinion or sentiment within a set of tweets.

As a result of this analysis, most of the feelings were cheerful. They are related to how the community is reacting to different environmental aspects in virtual life and its variations between neutral and positive. As a result of this analysis, the majority of sentiments were positive. The study pertains to the correlation between the community's response to various environmental factors in the virtual realm and the degree of variation between neutral and positive outcomes. (Fig.21)(Fig.22)

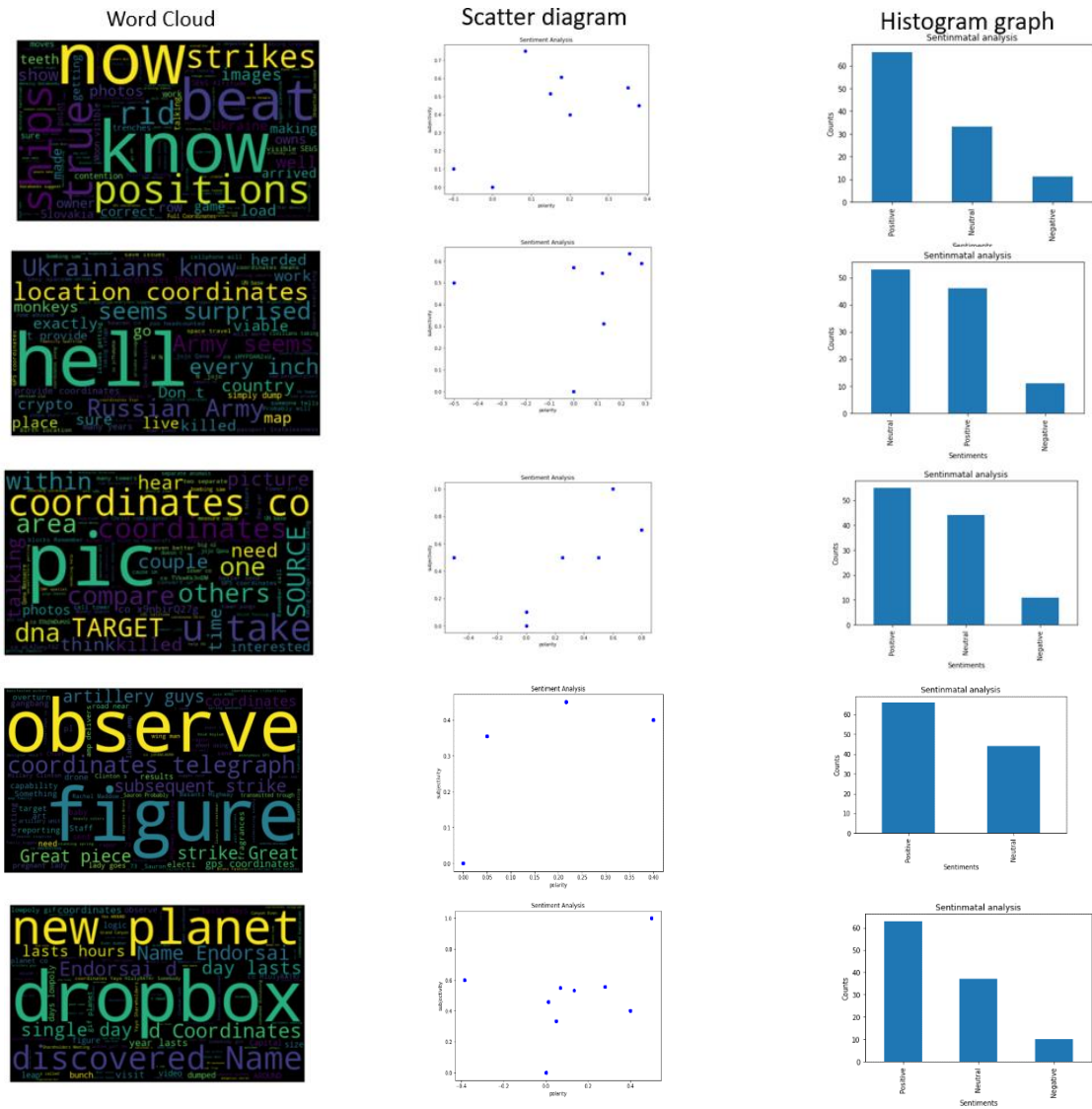


Fig.21. The sentimental analysis result sample (by the author).



**Fig. 22.** Emotional Mapping (geo-tagged) of negative and positive tweets through the polarity method (by the author).

### 2.2.5. Space syntax

The investigation of human spatial behaviour and experience necessitates an examination of the geometry and arrangement of physical environments. Hence, it is evident that conducting comparative research in the fields of architectural psychology and spatial cognition would greatly benefit from the utilisation of operationalizations of space that provide a shared basis for capturing its fundamental behavioural and psychological characteristics. (Hijazi et al., 2016).

Spatial configurations have intrinsic relationships with social, economic, and cultural dimensions, which must be understood to completely appreciate space syntactic analysis. Based on this notion, three space syntax approaches were studied independently and confirmed via diverse aspects as emotional by connecting the emotional maps (like, dislike, avoid) with the integration and connection.

Based on empirical evidence, it can be inferred that the environment impacts human behaviour, which is reciprocally influenced by the emotions that individuals experience. Buildings influence people's behaviour. According to architecture-assisted neuroscience, emotions and brain functions may be affected by varied settings. So, the issue is whether a structure can impact negative or good emotions. Will people behave differently if they have a different mindset? Space syntax theory posits that the spatial arrangement of a built environment, whether a single structure or a larger urban area, can impact human behaviour and emotional responses. The spatial arrangement of a structure can potentially influence emotions in diverse manners, encompassing:

The level of visibility in a given area can potentially influence an individual's perception of safety and security. Spaces that possess unobstructed lines of sight and favourable visibility have the potential to foster a sense of safety, while spaces that are concealed or veiled may elicit a sense of vulnerability.

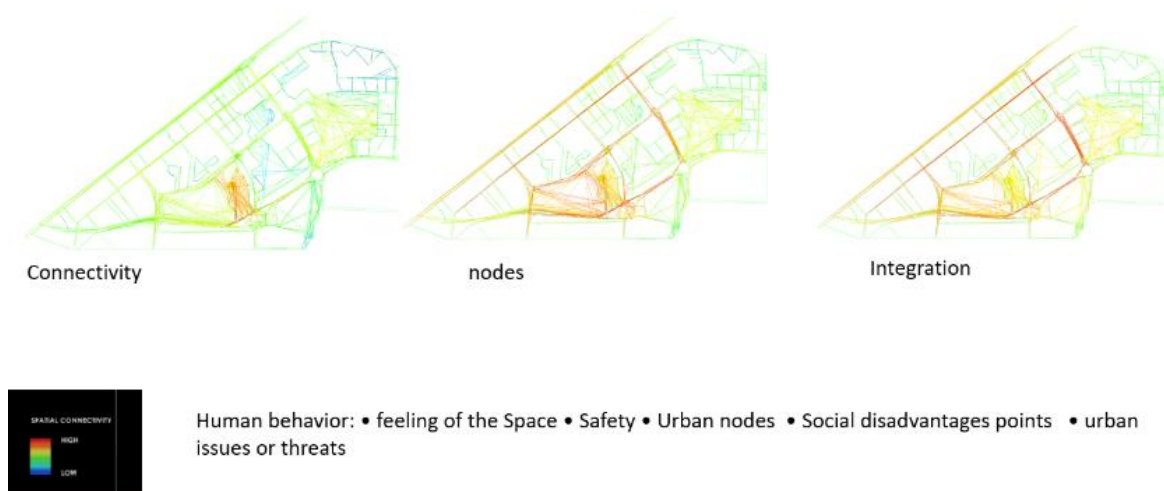
The degree of accessibility of a given space may influence an individual's emotional state. Spaces that are readily accessible and easy to navigate may elicit positive emotions, such as a sense of control

and empowerment. Conversely, challenging spaces to access or navigate may elicit negative emotions like frustration and anxiety.

The configuration of a physical environment can exert an effect on social interactions, thereby potentially eliciting an emotional response. A space intentionally designed to encourage social interaction may facilitate a sense of community and connectedness among individuals, whereas a space that inhibits social interaction may engender feelings of seclusion and solitude.

Individuals' mindset, personality, and cultural background can impact their behaviours and emotions. Individuals who exhibit introverted tendencies may prefer enclosed and secluded spaces, while extroverted ones may gravitate towards open and socially-oriented spaces. Consequently, it is imperative to consider the target audience and their inclinations when devising the architecture of a building.

The district was analysed using the space syntax methodology and the Emotion Mapping tool. The results indicate that Dainava exhibits a high degree of connectivity and integration but a low node point, which may negatively affect social engagement. These findings can provide insight into the emotional reactions of individuals to a given spatial environment. The process entails gathering empirical data about users' affective reactions towards diverse elements of the environment, including but not limited to illumination, chromaticity, and configuration of the urban fabric and streetscape morphology. The data, as mentioned earlier, can be utilised to pinpoint spatial regions that may elicit unfavourable affective responses and subsequently implement modifications to enhance the overall emotional encounter of individuals. Nodes and connections.(fig.23).



**Fig. 23.** Space syntax analysis (by the author).

Through the analysis, the spatial discrepancies between different roads and districts were recognised, and based on the user movement simulation, significant parameters that impact pedestrian spatial

behaviour and accessibility were found, such as the width of pavements has the potential to affect pedestrian behaviour by influencing the available space for walking and the potential for social interaction and other activities. The configuration of streets can impact pedestrian conduct, as variables such as crosswalks, street amenities, and illumination can influence the security and convenience of pedestrian mobility. The design of buildings and their entrances can affect pedestrian accessibility by influencing the quantity and placement of entry and exit points. The impact of land use on pedestrian behaviour can be attributed to the various activities and uses in a given area, which can affect the appeal and practicality of the area for pedestrians. The impact of topography on pedestrian accessibility can be attributed to its influence on the ease of movement and physical effort required. Hills or slopes determine this in a given area. The behaviour of pedestrians can be influenced by weather conditions, which include factors such as temperature and precipitation. These conditions can affect the safety and comfort of walking.

The provision of pedestrian amenities, such as seating facilities, public lavatories, and potable water sources, can have an effect on pedestrian conduct by furnishing assistance and convenience for pedestrians. The interdependence of these parameters can result in intricate interplays, which can variably impact pedestrian conduct based on the situation. Comprehending these variables holds significance in formulating and strategising pedestrian-oriented settings that foster security, convenience, and salubrious conduct. Moreover, geo-tagged tweets demonstrate a relationship between the links in space syntax, which enhances the ability to portray the behaviour and, by this work, adds to the multidisciplinary approach to the investigation of spatial behaviour.

#### **2.2.6. Emotional intelligence**

The incorporation of emotions is a crucial aspect of human-centred design. As sentient beings, humans possess affective and emotive capacities, and integrating these aspects into the design process can enhance any project beyond a mere functional space or setting for human activity. To illustrate this concept, let us examine the establishment of a significant communal space. It is imperative to contemplate the functionality of the subject matter. Hence, it is imperative to take into account the manner in which individuals will utilise it. Human beings endeavour to attain more than mere survival in their respective environments. The act of interaction and connection is advantageous to individuals as it stimulates the senses and evokes an emotional response from within, thereby tapping into intangible aspects of the human psyche. These intangible aspects may include a sense of belonging, connectedness, nostalgia, and fulfilment.

The development of emotional intelligence is a learned ability that occurs over time as an individual matures. Undoubtedly, as we progress as individuals and as a species, increased opportunities for emotional engagement serve to enhance our emotional intelligence. The initial phase involves the development of environments that facilitate and cultivate positive and secure human engagements. Design considerations that are crucial include cultural sensitivity, inclusion, and approachability.

Individuals who possess emotional intelligence are aware of their own value and are, therefore, capable of looking beyond themselves and exhibiting empathy. The cultivation of empathy can be fostered through the integration of diverse populations within our built environment, including public spaces such as restrooms, transportation, and pathways. This can be achieved through the normalisation and facilitation of the presence of individuals who differ from us, which may include

the provision of gender-neutral toilets, multi-level basins, and accessible lifts. The methodology for testing emotions and how intelligence was by including the questionnaire, a quiz by Daniel Goleman(Goleman, 2020) that measured:

- Self-awareness

The ability to recognise what you are feeling shows if people are aware of their feeling towards urban factors.

- Managing emotions

The ability to stay focused and think even when experiencing powerful emotions. It relates to how the urban environment can lead you through the street flow.

- Motivating oneself

The ability to use your deepest emotions to move and guide you towards your goals. That reflects how society can be attracted.

- Empathy

The ability to sense, understand and respond to other people's feelings. It is related to how people can avoid places.

- Social Skill

The ability to manage, influence, and inspire emotions in others is linked to how people like to socialise.

Emotional intelligence in this research will aid in evaluating the emotion's delivery, and a short, 50-question exam may be used to assess emotional awareness in the area. Each will be assigned a weight according to its category. The participant's social intelligence and self-awareness were demonstrated by the heist, which proposed public spaces, plazas, and areas where people might socialise. The idea here is to calculate people's emotions and link them to how intelligent their feelings are as a way of linking architecture to emotions, and by linking it to emotional intelligence, it will show how urban design and architecture can affect our intelligence of emotions. (fig.24)

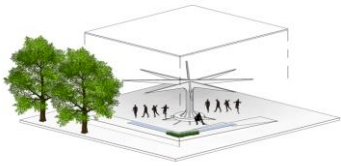


Self-awareness		Managing emotions		Motivating oneself		Empathy		Social Skill	
1		2		3		4		5	
6		7		8		9		10	
11		12		13		14		15	
16		17		18		19		20	
21		22		23		24		25	
26		27		28		29		30	
31		32		33		34		35	
36		37		38		39		40	
41		42		43		44		45	
46		47		48		49		50	
Total = (SA)	32.92	Total = (ME)	32.52	Total = (MO)	33.62	Total = (E)	33.65	Total = (SS)	33.75


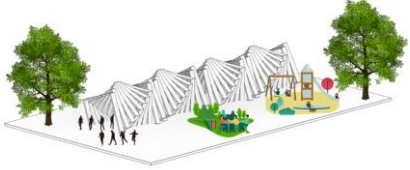
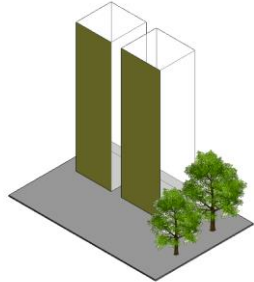
**Fig. 24.** Emotional intelligence model (by the author).

### 2.3. Conceptual Model of the regeneration of modernist neighbourhoods in order to make them more emotionally appealing

By their utilisation intensity, all urban areas may be categorised into three categories: favourite (like positive), disliked (negative), and avoided (not valued ). The model will be based on the feelings and ideas of the public since the primary objective is to integrate the public via the promotion of three actions: design as an initiative and regeneration as a redesign. And will concentrate on the case study's socially successful application of the analytical outcome. (Table 7)

Table 7. Conceptual model.

Problem	Research tool	Conceptual design	3D sketch (by the author)
Emotions toward streetscapes	Visual analysis, geo-tagged maps, survey.	The design should prioritise the orientation of paths, seating, and primary spaces to optimise solar exposure during winter and provide adequate shading during summer. Additionally, the layout should accommodate the inclusion of commercial or public functions, and the streets may be designed to be narrower.	
Emotion toward spaces and public areas	Visual analysis, geo-tagged maps, survey.	Enhance the seating capacity in high-traffic zones and incorporate additional amenities for leisure activities. Areas that are frequently visited are typically characterised by having advantageous sightlines that encompass the entirety of the space as well as its entry points.	
Emotion toward spaces and public areas	Visual analysis, geo-tagged maps, survey.	The installation of signage featuring maps is advised in expansive public areas to denote linkages and endpoints, the whereabouts of public amenities, and approximations of pedestrian travel durations and spans. Furthermore, it is recommended to integrate an iconic architectural style that represents the identity of the urban area.	

Emotion toward spaces and public areas	Visual analysis, geo-tagged maps, survey.	Develop a possible identity for the locality and give it meaning through an engagement design.	
Emotion toward spaces and public areas and streetscape	Visual analysis, geo-tagged maps, survey, and sentiment analysis.	<p>Identify publicly accessible markets and recreational facilities situated in areas that are both easily reachable and bustling with activity.</p> <p>Facilities situated in remote and isolated locations are perceived as insecure, leading to user avoidance.</p>	
Emotion toward Building	Visual analysis, geo-tagged maps, survey.	Redesign and renovate building facades and create higher-quality interior spaces.	

Depending upon the aforementioned conceptual framework, the forthcoming chapters will examine the methodology employed to attain the aforementioned objectives. Additionally, empirical investigations will be conducted to ascertain the efficacy of enhancing emotion mapping through various configurations in which advancements are introduced.



### **3. The use of emotion mapping for Dainava regeneration**

#### **3.1. Site Selection**

The research case study was carried out in the city of Kaunas in Lithuania, specifically in Dainava, with the aim of regenerating the modernistic areas using emotion mapping. Dainava was selected because it is one of the oldest neighbourhoods in Kaunas, offers a range of morphotypes, and is a prime representation of the modernist era. Dainava is a mostly Soviet-built neighbourhood (created in 1963 as a micro-district) in the north-northeast area of Kaunas, Lithuania's second-largest city. Its status is senior. The eldership is bounded by the A1 highway and the Kaunas Free Economic Zone to the north, the Petrašiūnai eldership to the east, the Gričiupis eldership to the south, and the Žaliakalnis and Eiguliai elderships to the west. The neighbourhood still has the same sense and style; nothing has changed away from maintenance, like how it was built in the 70s. The buildings are designed in the way of boxes to give the sense of a shutter, not the real needs and care of the human being.

#### **3.2. Data analysis**

The previous design research obtained five methods of analysis that helped to test people's emotions towards streetscapes, buildings, and spaces and found a bond between people's behaviour through space syntax linked to sentiment analysis, the questionnaire concerning the quality of life in the neighbourhood of Dainava (non-spatial questions), and urban society engagement (spatial questions). The Urban Visual Analysis helped to narrow and classify people's emotions towards their neighbourhoods by suggesting their favourite emotional places through geo-tagged emotion mapping (an interactive map). Emotional intelligence as its test showed a society's intelligence in regards to different emotions, and the use of the quiz helped to demonstrate the correct answer, as it indicates that space and feelings are strongly linked and that a well-designed urban environment can have a direct effect on human emotional intelligence. The suggested areas through geo-tagged mapping and the like emotions that have been obtained from certain places should be considered in the district design, and the disliked areas should be regenerated by obtaining well-designed public areas, well-designed parks, remodelling modernistic buildings, and enhancing the connectivity of the district by creating public activities areas. The multi-divisional research methodology performed well as a basis for local social community feeling, with the many divisions of the overall study helping to assess emotions in different aspects. The visual analysis serves as an experimental method for gauging people's emotional responses to various settings in the neighbourhood. The main elements of modernistic areas confirmed that modern planning lacks qualitative places within districts, as more than 80% of the residents feel sad in poorly designed spaces. The geo-tagging method helps people interact with their surroundings and think about their living environment, expressing their feelings towards building conditions. For further analysis related to the specific area to be designed, the following analysis was needed:

#### **3.3. Green Spaces analysis**

Green systems analysis is an approach that uses a universal and integrated approach to evaluating the environmental performance of urban design and development projects (Mrak et al., 2022). There are many benefits to using green systems analysis in urban design, including the following:

- **Sustainability:** Green systems analysis can help identify and evaluate a project's environmental performance to create a more sustainable and environmentally friendly urban

design; this can help to reduce the negative impact of development on natural resources, such as water, energy, and land (Rosen & Kishawy, 2012).

- Better decision making: Green systems analysis can provide an evidence-based approach to urban design decisions, helping to identify the most effective and efficient solutions for achieving environmental goals, which is the main approach to the regeneration path.
- Integrated approach: Green systems analysis can help to identify the connections and interactions between different components of a project, such as the building landscaping, which can help to create a more integrated and holistic design solution.
- Community engagement: Green systems analysis often involves community engagement and input, which can help to ensure that the project addresses the needs and concerns of the community.
- Adaptability and resilience: Green systems analysis can help to identify the vulnerability of urban design to the impacts of climate change and other environmental challenges and can help to design more adaptable and resilient urban spaces (Puchol-Salort et al., 2020).

And the main thing that helped in the Dainava district was the analysis required by greenery and not equipped, which is an effect on the decision of the design placement and the regeneration path (Fig. 25)



**Fig. 25.** Site analysis of the green area (by the author).

### 3.4. Mobility system

Mobility system analysis in the design phase was an approach to evaluating the transportation performance of Dainava and development projects as it's effecting the mobility system in the first place. Analysing the mobility system helps to identify ways to improve the accessibility of the regeneration path by ensuring that residents and visitors easily and efficiently move throughout the area by foot, bicycle, and public transportation, as in Fig. 26



**Fig.26.** Mobility system site analysis(by the author).

### 3.5. Buildings and facilities analysis

Facilities analysis in urban design evaluates the various types and levels of services and amenities needed to support a community, such as education, commercial, and Social (church). The quarter of the district has two buildings in the renovation stage, but the rest of the buildings are never renovated, which effect the level of regeneration and development of the area.

The goal of facilities analysis is to ensure that the built environment meets the needs of the community and provides an appropriate type of services for specific needs and desires of a community, such as recreational and integration of commercial and landscape fields, which can help to ensure that the development project is responsive to the needs of the community, this can help make the site more sustainable so that the built environment can be sustained over time and adaptable to the community's changing needs and demographic shifts. And based on that, the design of markets and shops was decided in Fig. 27



**Fig.27.**The existing facilities analysis(by the author).



**Green Structure**

**Fig.27A.**The green structure development with the regeneration path (by the author).

In conclusion, as shown in Figs 25, 26, 27, the analysis resulted from a problem that was measured in the following parameters :

- **Accessibility:** a multi-functional designed street proposed to prioritize accessibility for pedestrians and cars. This includes clearly marked sidewalks and crosswalks, as shown in Fig 26.
- **Sidewalks and Footpaths:** Pedestrian-friendly streets have well-maintained and wide sidewalks that are separated from the road by a physical barrier. And specifically, Pedestrian footpaths are designed to be free from obstacles and well-lit for safe walking. Fig 38
- **Green Spaces and Streetscape:** the design of aesthetically pleasing streets with green spaces, trees, and landscaping to improve the overall environment. These elements provide shade, reduce pollution, and create a more pleasant experience for pedestrians and drivers; it is a solution to prevent the habit that has been captured through the analysis of using the green area as a car park.

- **Parking and Vehicle Flow:** Efficient management of parking spaces and vehicle flow is crucial. Adequate parking options, designated parking areas, and clear regulations help prevent congestion and ensure smooth traffic movement. Fig 38
- **Infrastructure for Cyclists:** well-designed streets helped to include infrastructure for cyclists, such as dedicated bike lanes or shared paths. This encourages alternative modes of transportation and enhances safety for cyclists, as shown in Fig 26.

The present analysis commences with examining the green area analysis, as the presence of greenery in our living environment is known to confer benefits beyond those related to health and wellbeing. Additionally, it enables efficient water management, fosters biodiversity in urbanised regions, and has the potential to mitigate the impacts of acoustic pollution. Research has shown that the inclusion of vegetation has a favourable effect on the financial worth of both domestic and business real estate.

Mobility analysis is utilised to detect patterns and scrutinise concerns about metropolitan vehicular congestion. The utilisation of mobility analysis can aid in assessing and ranking project requirements concerning the optimisation of traffic flow for developmental purposes. Similarly, facility analysis facilitates comprehension of the progression and consequences of urban configurations. Comprehending this concept holds significant importance in making informed decisions regarding urban initiatives.

### **3.6. Design ideas and elaborated proposals**

#### **Site strategy**

The site strategy is an essential aspect of designing a sustainable and functional site. The following are guidelines for designing site strategies related to social fabric, productive landscapes, and green infrastructure construction (Newman & Jennings, 2008):

The strategy of the Social Fabric site centres on fostering a communal atmosphere in an urban setting. The objective above can be accomplished through diverse strategies, including creating communal areas, implementing pedestrian-oriented roads, and establishing mixed-use constructions that foster social engagement. Establishing a communal atmosphere can foster a feeling of inclusion among individuals, potentially enhancing their psychological welfare (Likitswat, 2020).

The design aims to :

- **Design communal spaces:** by creating areas encouraging social interaction, such as plazas, courtyards, and outdoor seating areas, which was implemented in (Fig.28).



**Fig. 28.** Shops and restaurants with recreational areas(by the author).

- Connect spaces: ensure that pedestrian and bicycle paths and transit infrastructure connect the site to the surrounding neighbourhood, as shown in Fig 37.
- Incorporate mixed-use development: to promote diversity and interaction, consider incorporating a blend of residential, commercial, and institutional uses into the site design. Fig 28-A.



**Fig.28A.** Proposal for a designed shop in the residential building (by the author).

The second site strategy was the productive landscapes strategy, which refers to utilising a site for agriculture, horticulture, or other productive activities. Consider the following aspects of a site strategy that supports productive landscapes:

- Design the landscape that increases the interaction with nature, and consider integrating community gardens, rooftop gardens, and other forms of urban agriculture into the site's design. Fig 29
- Think about water management: include sustainable water management practises, such as precipitation harvesting, green infrastructure, rain collectors, and using rain tiles and fountains to support productive landscapes. Fig 36

- Encourage local food production: design the site to facilitate locally grown food production and distribution to promote sustainability and strengthen local economies.
- Green infrastructure refers to the use of natural systems and processes for the management of stormwater, improvement of air quality, and promotion of biodiversity. Consider the following to design a site strategy that supports green infrastructure construction (Martyna Joanna, 2020):
- Incorporate green roofs: design buildings with verdant roofs to increase biodiversity and decrease the effect of heat islands.
- Utilise permeable surfaces like pavement or gravel to permit infiltration and reduce stormwater discharge.
- Plant native species: include native species in the site's design to support biodiversity and reduce irrigation and maintenance needs.
- Create green corridors: design the site to include green corridors that link natural areas and encourage biodiversity.

This is reflected in the development of green infrastructure, as in Fig 27A. Designing site strategies that integrate social fabric, productive landscapes, and green infrastructure was performed carefully, considering the site context, community requirements, and sustainable design principles. In urban areas, integrating social fabric, productive landscapes, and green infrastructure buildings into site planning aim to improve individuals' emotional well-being by fostering a sense of community, promoting a connection to nature, and encouraging sustainable living practices.

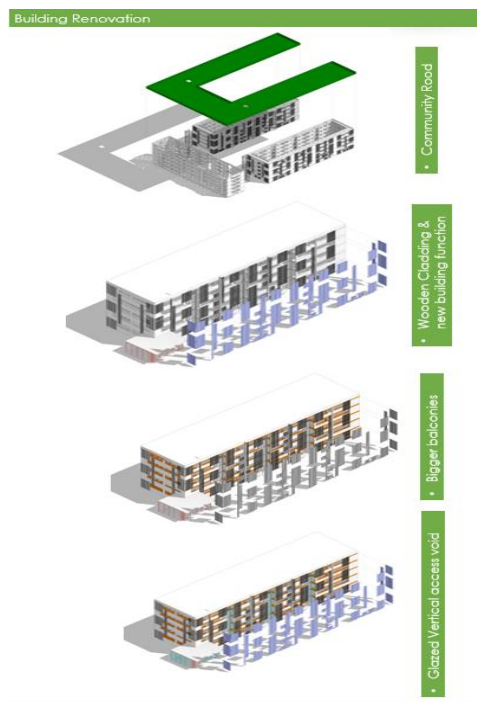
### **The Building Strategy**

The concept of building strategy pertains to the methodology or blueprint employed in the architectural design of a structure to attain predetermined objectives. The three buildings above types, namely retrofit, cut and rehab, and new construction, represent distinct approaches that can be employed to attain diverse objectives. The following chapter is a summary of each strategy:

*Retrofitting* is a procedure to enhance the energy efficiency, sustainability, functionality, and overall performance of an already-existing building. The retrofit approach entails evaluating the current structure and pinpointing sections that necessitate enhancements. Retrofitting encompasses a range of measures aimed at improving energy efficiency and reducing energy consumption, such as upgrades to lighting, HVAC systems, insulation, windows, and other building components; in this design, the building approach is to retrofit the surrounding environment by making bigger balconies and redesign the facade to enhance the emotions towards the buildings. The process of retrofitting a building encompasses integrating sustainable materials and technologies to mitigate the structure's carbon footprint and ecological consequences for a better quality of life and environment.

*The cut and rehab* approach pertains to the partial deconstruction of a pre-existing structure followed by its restoration or refurbishment to conform to contemporary building regulations and criteria. This approach was employed because the current edifice is structurally sound, but its design or functionality is obsolete or insufficient. Through the implementation of a cut and rehab approach, the internal areas are reorganised to enhance efficiency and cater to the requirements of the inhabitants. The approach of new construction entails the creation and erection of a novel edifice through

architectural planning and construction. This approach is utilized in design situations where a pre-existing structure is absent, such as the green roof and the elevator in the design (Fig. 29).



**Fig.29.** Building Renovation the linked with the regeneration path (by the author).

Implementing a building strategy has the potential to augment emotional responses in the regeneration of urban areas. This can be achieved through the preservation of cultural and historical significance, the introduction of novel and stimulating elements, the provision of adaptable and customised solutions, and the mitigation of environmental harm. The implementation of retrofit, cut and rehab, and new construction are three viable strategies that can effectively attain the objectives above and positively impact the psychological welfare of the populace.

### **3.7. Emotional visual translation through AI**

Given the lack of well-defined design criteria during the conceptual stage, the utilisation of artificial intelligence in this context ought not to be centred on the identification of a solution within a pre-established search space. This process ought to be regarded as an inquiry into the prerequisites and viable approaches for attaining those standards. The process of architectural design is a complex one that requires the utilisation of both experiential knowledge and creative aptitude in order to generate novel designs. Hence, the use of artificial intelligence in this procedure ought not to be directed towards discovering a resolution within a predetermined exploration domain, given that the design prerequisites are not yet distinctly established in the conceptual phase. Rather than viewing this process as a mere exercise, it should be regarded as an investigative endeavour aimed at identifying the necessary specifications and potential remedies to fulfil those specifications. The selection of design elements often involves the consideration of both measurable and immeasurable characteristics. Despite the possibility of numerical formulation for a problem, the absence of clearly defined and universally accepted assessment criteria poses a challenge in establishing design objectives. The utilisation of this approach for conveying emotions through architecture facilitated the interpretation of individuals' sentiments towards their surroundings. This method also enabled me



to discern their preferences for the neighbourhood and its design phase. The process of transforming emotional text into a visual representation aided in the identification of the genuine requirements of the users and the factors that could enhance their positive emotions. (Fig. 30)



A colorful soviet era building with common yards



A modern façade building with strips on the façade and green area with a public plaza



Modern white and grey buildings with a plaza



A modern façade building with strips on the façade and green area with a public plaza



White Renovated façade with designed landscape and walkways



Better residential buildings with better street escapes and car parks

**Fig.30.** Artificial intelligence results by using the text of emotions(by the author)

### 3.8. Urban Regeneration of the path of public spaces, buildings, and streetscape

Urban regeneration is the redevelopment of old urban areas through the use of improved infrastructure and the introduction of new facilities to meet the needs of the inhabitants. The areas that undergo urban regeneration are first analysed to determine the type of development required to improve the urban environment.(Bogdanovic Protić et al., 2020).

Emotion mapping and feeling analysis was used to test the feelings towards the design of buildings, streetscapes, and landscape spaces. The factors influencing the design were mainly people, green areas, and unused spaces, and it was a link between the elements, as shown in Fig 31, of the sports complex point C, Dainava Park point D, and the pedestrian path B & E. Based on that, a design of the regeneration path was focused on streetscapes, landscape spaces, and buildings point A. Understanding and knowledge of how people emotionally respond to different aspects of the built environment, such as the architectural design of buildings, streetscapes, and landscaping, were used to create more emotionally engaging and pleasant spaces for people to use ( Fig. 31).and the result was a regeneration path that enhances the feelings.



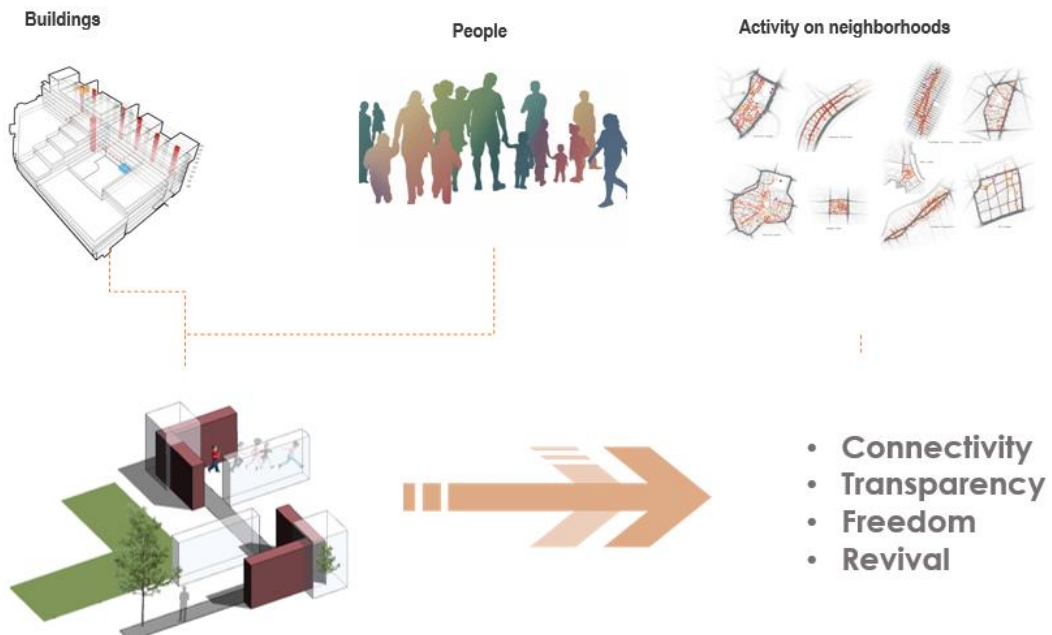
**Fig. 31.** The regeneration path (by the author)

### 3.9. Building design

The main thing in this design is to implement the aspect of connectivity and freedom within the context of the building and try to enhance the emotion. The main strategies used for the design of the building are:

- Retrofit building.
- Cut and rehab building.
- New Construction.

These strategies aim to think about the building from the user's perspective and what is needed the most by translating that through the new elements in the built environment (Fig. 32).



**Fig. 32.** Building conceptual design (by the author)

In the case of building design, emotion mapping and feeling analysis were used to evaluate how people respond to different architectural elements, such as building height, materiality, and form. This information can be used to create buildings that are more visually pleasing and emotionally engaging (Fig. 33).



**Fig. 33.** The renovation of the building facade (by the author)

The aim was to follow the strategies that were mentioned earlier in the research. First, the cut and rehab by enhancing the light in the buildings (natural light) and also tried to have an open truss to give the feelings of happiness and well-being, whereas a dark and cramped building might be associated with anxiety and claustrophobia. Wider balconies aim to create a feeling of spaciousness and openness in the building; this can be especially beneficial in smaller or more cramped living spaces such as the Dainava housing building, making them feel more roomy and comfortable. For Aesthetics predictive Like in public spaces, wider trusses can provide a visually interesting and dynamic architectural feature that can add character and charm to a residential building and can also be used to create interesting patterns of light and shadow, which can help to create a more engaging and dynamic environment (Fig. 34). The trusses also aim to have the flexibility as it can provide a flexible and adaptable framework that can be used to support a variety of different activities and uses. For example, wider and open balconies can be used to support hanging plants or lighting, making it easy to change the function of a space over time, as in Fig 33,34. Also, the new construction by having a new building element which is the bakery/ the shop in the residential building, as shown in Fig 35.



**Fig. 34.** Buildings designed with Trusses (by the author).

As part of the regeneration path, there were site strategies for the design which was focusing on streetscape and landscape spaces :

- social fabric site strategy;
- productive landscapes site strategy;
- green infrastructure.

In the regeneration of Dainava, through the research obtained earlier, the multi-functional residential buildings provide several advantages. They are necessary to the area as integrating residential units with commercial or community spaces in multi-functional buildings can optimise spatial utilisation and mitigate urban sprawl. Commercial or community spaces, such as cafes and supermarkets within residential buildings, provide residents with enhanced convenience and accessibility to various services and amenities. And enhanced social cohesion can be achieved through the utilisation of multi-functional buildings, which can facilitate social interaction and community building by offering venues for residents to congregate and engage in communal activities; this is a very good solution to the negative emotions and social engagements that have been collected in the early stages of the project, and it solves the problem of the low resident's interaction as shown in (fig. 35 ). The inclusion

of commercial or community spaces within a residential building can potentially augment safety and security measures by fostering natural surveillance and amplifying pedestrian activity. The advantages of sustainability can be observed in multi-functional buildings that facilitate sustainable living by diminishing the necessity for transportation, encouraging energy efficiency through shared infrastructure, and providing prospects for green space and urban agriculture.



**Fig. 35.** A bakery cafe integration with the residential building (by the author ).

### 3.10. Streetscape

For streetscapes and landscape spaces, emotion mapping and feeling analysis were used to understand how different elements, such as lighting, greenery, public art, and street movement, affect people's emotional responses. This information helped to create streetscapes and landscape spaces that are more pleasant and emotionally engaging. The project proposes the implementation of a streetscape comprising numerous trees and well-maintained gardens to evoke feelings of tranquilly and relaxation. Conversely, a streetscape characterised by poorly maintained pavements and litter may elicit sensations of anxiety and discomfort. (Fig. 36).

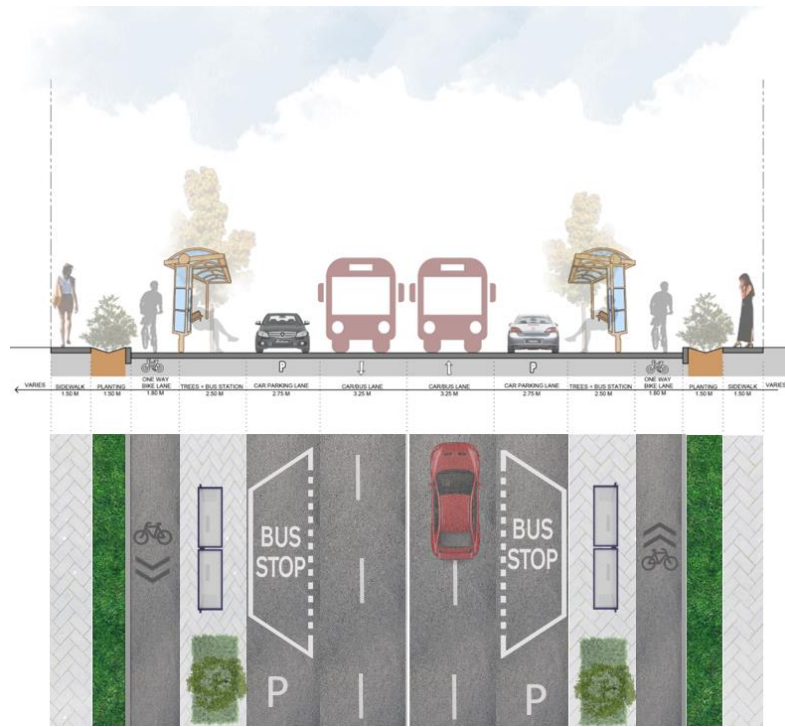


**Fig.36.** Designed an area with a designed landscape with different positions to enhance the feelings (by the author).

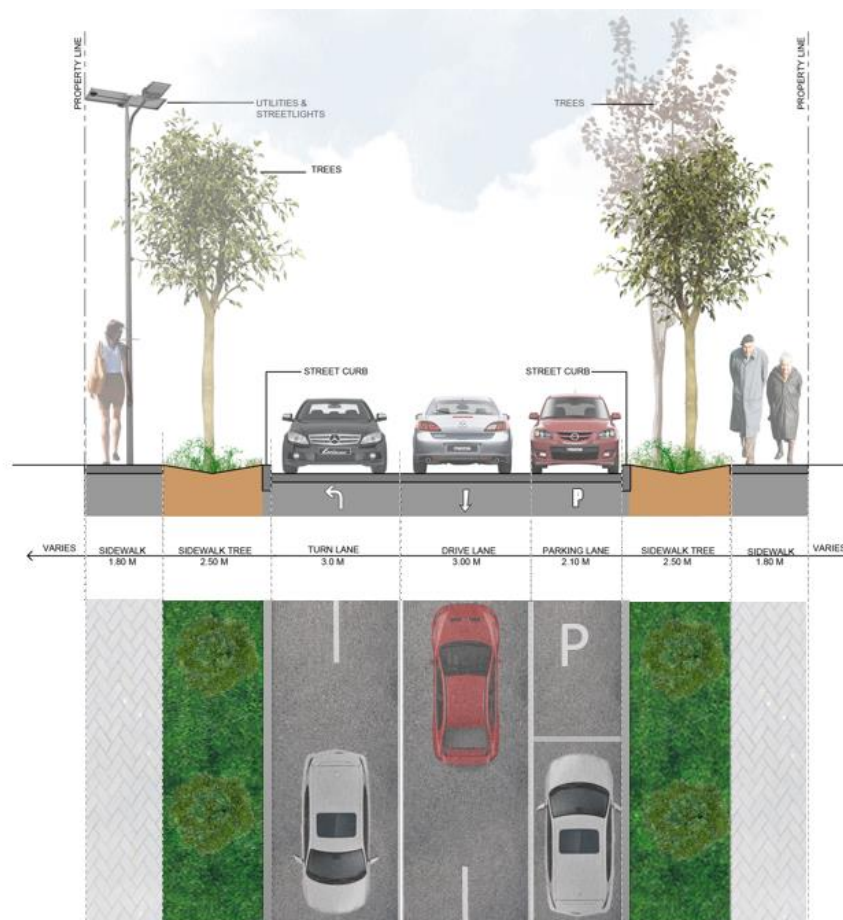
It is also important to consider the context and cultural background of the area and its inhabitants. This information can help inform design decisions that are sensitive to the needs and values of the community and can help create more inclusive and welcoming spaces for everyone. Depending on that, and since cycling is very important and sustainable in Kaunas, providing safety for the pedestrian and the cyclist was one of the approaches to developing the streetscapes to have a safe feeling (Fig. 37, 38, 39.). Also, to develop the streetscape, the research aimed to propose changes in two types of the road to show the engagement of building, streetscape and landscape and make a better quality sense of the place (Fig. 39, Fig. 40)



**Fig.37.** Position of design showing active landscape integrating with pedestrians and cycle path (by the author).



**Fig. 38.** Road type D (by the author).



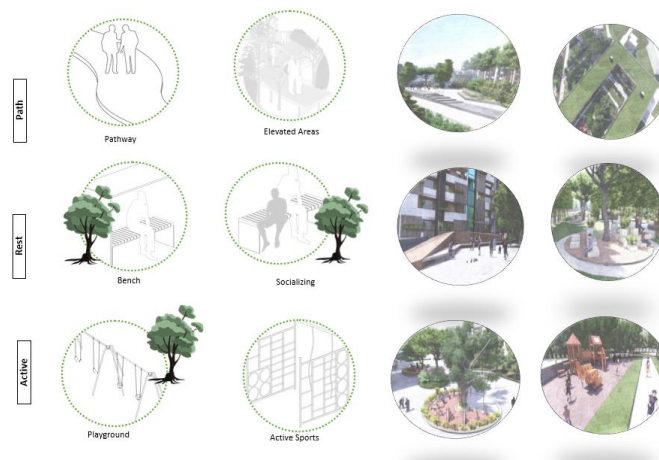
**Fig.39.** Road type A (by the author).



**Fig.40.** Pedestrian road ( by the author).

### 3.11. Landscape and spaces

Landscape design can have a significant impact on people's emotional well-being. Research has shown that exposure to nature, including landscape design, can lead to various positive emotional responses, such as reduced stress, increased well-being, and improved cognitive function (Carls, 1974). One of the key ways that landscape design can affect emotions is through natural elements, such as plants, trees, and water. These elements can have a calming and soothing effect on people, helping to reduce stress and anxiety. In addition, research has shown that exposure to nature can increase feelings of happiness, contentment, and well-being. Therefore the design was focusing on design base on three strategies (figure 41).



**Fig.41.** Landscape strategies (by the author )

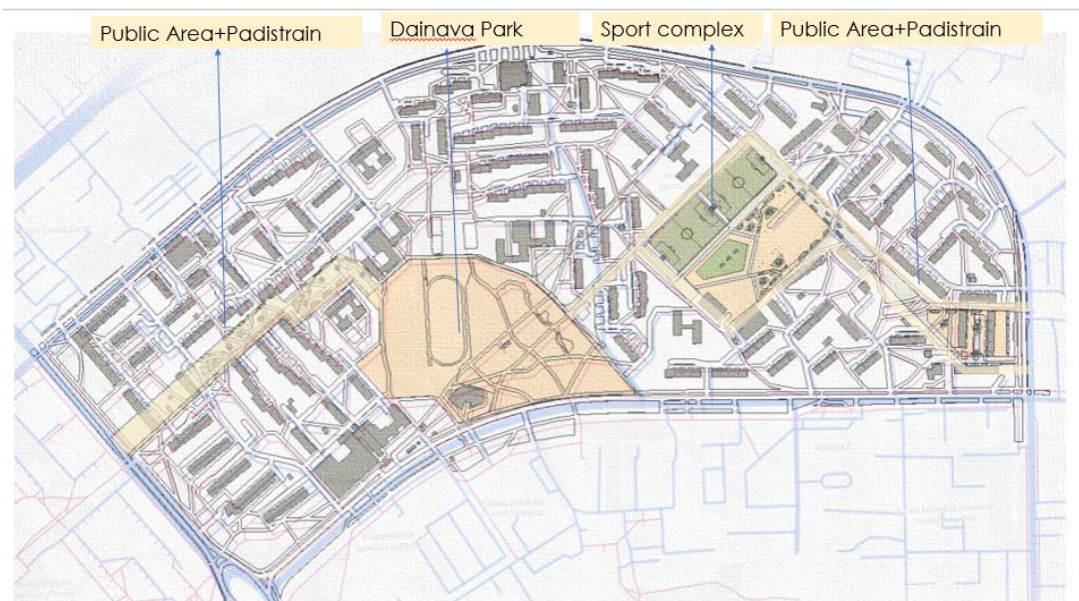


In the experimental design, landscape design elements were used to create a sense of place. This can evoke feelings of connection, meaning and belonging which can have a positive effect on people's emotions (Fig. 42).



**Fig .42.** Public space to design a connection with nature(by the author).

It's important to note that how landscape design affects emotions can vary depending on individual preferences, cultural backgrounds and personal experiences. For example, what might be calming and soothing for one person might be boring and uninspiring for another person. So, designers should consider the context and the intended user group in their design. All the previous design spots create a path containing public areas plus pedestrians with the integration of the existing locations (Dainava Park, sports complex) (Fig. 43).



**Fig.43.**Site zoning(by the author).

Connect the path with the surrounding. Als aim to have different levels of positions to enhance the feeling and emotions so that the new volumes allow the sun to enter.

### **3.11.1. Vegetation, plant species**

The incorporation of vegetation in the Dainava regeneration urban design project holds significant value in elevating the emotional well-being of individuals, especially during the winter season when the natural surroundings may appear bleak and monochromatic; therefore, the plants were used very carefully and in referring to the life cycle of the leaves and the trees where it can stay green to the longest time. Several advantages are associated with integrating vegetation into urban design initiatives to improve individuals' emotional well-being(Soria-Lara et al., 2015).

Air quality enhancement can be attributed to plants' natural filtration of pollutants; this is especially advantageous during the winter season when pollution levels tend to rise due to factors such as amplified traffic and wood-burning stoves.

The addition of vegetation can enhance the aesthetic appeal of a winter landscape by introducing varied colours and textures, thereby contributing to creating a visually pleasing environment; this has the potential to enhance individuals' emotional well-being and ameliorate their affective state.

Integrating vegetation into urban design initiatives can lead to a rise in biodiversity within the vicinity, thereby generating favourable outcomes for the environment and fostering a more dynamic ecosystem.

Research has demonstrated that exposure to natural environments can yield various positive outcomes for mental health, such as decreased stress levels, enhanced emotional state, and heightened cognitive abilities. During the winter, individuals may encounter seasonal affective disorder (SAD) or other types of depression. In this context, the availability of vegetation can play a crucial role in promoting mental well-being.(Araujo Calçada et al., 2013)

The urban heat island effect can be mitigated by vegetation, which counteracts the warming effect caused by the absorption and retention of heat by urban surfaces such as asphalt and concrete. Implementing vegetation in urban areas can aid in reducing heat absorption by buildings, thereby generating shaded areas that contribute to a more comfortable environment.

The design aimed to give a journey and multidimensional feeling to trigger the emotion while experiencing the regeneration path; therefore, the five senses method where applied (He et al., 2022). The brain receives information from the sense organs to interpret the world. The five senses also help us communicate with others. Humans' five senses form their perceptual bodies. Humans can understand, feel, and behave through these senses. Thus, the five senses refer to the physiological faculties that enable organisms to perceive and respond to stimuli in their environment.

These senses include sight, hearing, taste, smell, and touch. The application of theoretical principles can aid designers in the development of therapeutic landscapes that engage multiple senses. Therapeutic plant landscapes surpass the engagement of the five senses that is common to all landscapes. Therapeutic horticulture involves the deliberate selection of plants and other elements

that are intended to stimulate the five senses. (Table 8). The sensory experience of plants can be multifaceted, encompassing various aspects such as colour, visual appearance, texture, form, movement, light, and shadow. Aromatic plants can stimulate olfactory senses, while the sound of wind rushing through leaves, knocking stems together, or rustling grasses can contribute to the therapeutic value of plant landscapes. Additionally, edible plants such as fruits, vegetables, herbs, and spices can provide gustatory stimulation. (He et al., 2022). Certain plants are also selected for their potential to promote physical and mental wellness, making them essential elements in landscape design. People and plants have shared effects and limits throughout human evolution (Velarde et al., 2007). Plants chill, humidify, sterilise, repel insects, fix carbon, release oxygen, and increase negative air ions. Healthy plants create a healthy atmosphere for humans. Plants' colours and volatiles improve human health. However, some plants can produce harmful substances and harm humans.

Table 8. Type of plants on the theory of five senses.

Category	Representative species
Visual	Acer macrophyllum, Acer griseum, Aesculus hippocastanum, Hydrangea macrophylla, /Syringa velutina, Lavandulaangustifolia, Rhododendron simsii, Malus pumila,
Auditory	Pinus ponderosa, Prunus serrulata 'Ukon', Sorbus
sensible	Thuja plicata, Robinia pseudoacacia 'Frisia'. , Syringa velutina, cerasifera 'Pissardii'. , Salix babylonica, L. rhododendron sims,
olfactory	Magnolia dawsoniana, Pinus ponderosa
Gustatory	C. monogyna, setsalulu Seabuckthorn bush shrub orange berries

### 3.11.2. Water features

Fountains and water features can provide numerous advantages in urban design, encompassing both visual appeal and practical utility. There are some advantages and impacts that they may exert on an individual's emotional state:

Installing fountains and water features in urban areas can augment their aesthetic appeal, rendering them more visually appealing and alluring to individuals who frequent such spaces. The aesthetic appeal of an environment can potentially elicit positive emotional responses, as individuals tend to gravitate towards visually pleasing and tranquil surroundings (Fig. 44).



**Fig.44.**Water fountain (by the author).

Water features and fountains can provide a cooling effect in hot and arid environments, creating a pleasant and rejuvenating urban oasis for individuals to unwind and appreciate. Cooler environments have the potential to elicit positive emotional responses, as individuals tend to experience increased relaxation and comfort in such settings. While during the winter season, urban fountains and water features can provide advantageous outcomes. Illuminated urban scenes may be enhanced by their presence. During the holiday, the auditory experience of water in motion may have a calming effect.



**Fig.45.**Water feature designed to enhance the feelings (by the author).

The auditory and kinesthetic stimuli produced by water have been found to elicit a tranquillizing response in individuals, resulting in a decrease in levels of stress and anxiety. (fig.45) Fountains and water features have the potential to establish a tranquil ambience, facilitating individuals to de-stress and experience a heightened sense of comfort. The installation of fountains and water features has the potential to establish a perceived affiliation with the natural environment, thereby contributing to an improvement in mental health and overall well-being. The water features places where the residential building can have access. In urban design, fountains and water features are known to elicit positive emotional responses and offer many advantages that can augment the visual and practical aspects of communal areas. Therefore as shown in Fig 45, two main water features were located in the most residential area and the recreational zone to affect the pedestrians and the residents.

### 3.11.3. Outdoor furniture and other objects of small architecture

Including outdoor furniture and small architectural elements, such as benches, tables, bike racks, trash cans, and public art installations, is crucial in establishing a pleasant and practical public environment. Outdoor furniture, such as benches and tables, offer a comfortable seating option for individuals to unwind and rest. Promoting outdoor activities can potentially foster an increase in individuals' outdoor engagement, potentially yielding favourable effects on their physical and mental health.



**Fig.46** .Public seating arrangements with landscape engagement (by the author).

The presence of outdoor furniture and small architectural objects can foster socialisation and facilitate interpersonal interaction among individuals. Public seating arrangements such as benches and tables can serve as a communal space for individuals to convene and engage in social discourse. (fig.46).

The practical utility of outdoor furniture and small architectural objects is exemplified by their ability to provide bike parking, trash disposal, and wayfinding services; this has the potential to enhance the functionality and user-friendliness of the public space.

Including outdoor furniture and small architectural elements can enhance the aesthetics of public space, thereby augmenting its visual appeal and attractiveness. This has the potential to increase the number of individuals drawn to the space and augment their overall experience. (Fig.47)



**Fig.47.** Architectural shading element (by the author).

The presence of outdoor furniture enhances public spaces' safety through their ability to serve as visual cues for pedestrians and motorists, as well as their potential to deter undesirable behaviour. (Fig.48)



**Fig.48.** The essence of function indications (by the author).

Incorporating outdoor furniture and other minor architectural elements is a fundamental component in establishing a well-designed public space. Furnishings can augment the comfort, utility, and visual appeal of a particular setting while concurrently fostering social interaction and interpersonal engagement among individuals. The author has developed an artificial shading device that can be utilised during both winter and summer while maintaining the surrounding environment's aesthetic. Fig 47.

### 3.11.4. Materials

For buildings, the main thing was new cladding to the faces with wooden strips for the trusses, which gives stability and a sense of nature (Fig. 19). For the landscape area and spaces, the main focus was on designing paths with climate tiles that absorb the rain and water; besides that, design rain gardens as much as possible to support the tiles functions; and the benches were designed for natural tiles to integrate with the surroundings, as shown in Fig. 49.



**Fig.49.** Materials (by the Author ).

### 3.11.5. Evaluation of experimental design results




Urban areas can be classified into three distinct categories based on their level of utilisation intensity: preferred (positive), disliked (negative), and avoided (neutral). The model was assessed concerning public sentiments and perspectives, as its primary aim is to foster public engagement by promoting three key actions: design as an initiative and regeneration as a form of redesign. And transform it into a form of cryopreservation. The focus will be directed towards the socially successful implementation of the analytical results in the case study. (Table 9) and the evaluation of the experimental design was measured as follows:

**Research Objectives:** the stated objective of integrating the public and promoting actions such as design, regeneration, and repurposing is important. Evaluate whether the experimental design effectively addresses these objectives and whether the outcomes align with the intended goals.




**Measurement of utilization intensity:** methodology used to measure the utilisation intensity of urban areas (Fig 1). The measurement approach is appropriate, and it captures the desired information accurately.

**Categorizing urban areas:** the criteria and process used to categorize urban areas into three categories: favourite, disliked, and avoided. Where clear and effective, it provides meaningful insights into public perceptions and preferences that help regenerate the area.

Table 9: Evaluation of experimental design.

Problem	Research tool	Conceptual design	The experimental Design elements	Experimental design Result/implementation
Emotions toward Streetscapes	Visual analysis, geo-tagged maps, survey	Place walkways, furniture, and focal points where they will receive winter light and summer shade.	<p>A designated bike lane, a pedestrian walkway, and the use of natural shade components improved the functionality of the streets.</p> <p>Create a car parking lane beside the major thoroughfares.</p> <p>Increase the variety of users on the street connection to improve urban infrastructure.</p>	
Emotion toward spaces and public areas	Visual analysis, geo-tagged maps, survey	In regions where people congregate often, increase the number of chairs. Popular locations frequently feature clear views of the entire region and its access points.	<p>Create a seating area with built-in benches.</p> <p>Create seats out of sustainable structures.</p> <p>Create an active outdoor space.</p>	
Emotion toward spaces and public areas	Visual analysis, geo-tagged maps, survey	Install maps with connections and destinations, the locations of public amenities, and estimated walking times and distances on signage in major public areas.	<p>Provide two water features with various landscape characteristics in the middle of the dwelling area so that different users may reach them.</p> <p>Provide a different arrangement of paths that were created using a variety of landscape features.</p>	



Emotion toward spaces and public areas	Visual analysis, geo-tagged maps, survey	Create a future-oriented neighbourhood with purpose and character by integrating urban art appropriate to the region.	Create a plaza yard with a sports complex, a market, a place to rest with two different types of water features, an active workout area and a play area for children.	
Emotion toward spaces and public areas and street escape	Visual analysis, geo tagged maps, survey, sentiment analysis	Locate public markets, playgrounds, and recreational spaces that are busy and inaccessible. Users will avoid facilities that are situated in remote, off-the-beaten-path areas because they feel uncomfortable.	Create a multi-purpose structure with landscape and social engineering to foster a community where residents engage with one another.	
Emotion toward Building	Visual analysis, geo tagged maps , survey	Renovate and redesign the building façade.	Retrofit building. Cut and rehab building. New Construction. By adding a new cladding and layer to the façade , increase the balconies size ,having a common yards and green roof	

Integration of public opinion: the feelings and ideas of the public were gathered and incorporated into the evaluation. The methods used to collect public opinions include surveys, interviews, and geo-tagged. The representativeness and diversity of the public sample and their perspectives were appropriately considered in the analysis.

Analytical outcome: the analytical outcome derived from the experimental design. Results effectively showcase socially successful applications and provide valuable urban planning and regeneration insights.

## Overall Conclusions and Future Developments

1. The literature review highlighted the potential of emotion mapping for understanding and improving urban environments, particularly in modernistic neighbourhoods. Though technical challenges persist, incorporating subjective data can enhance traditional GIS data and empower community members in planning.
2. The research helped analyze the history and the planning principles of modernist neighbourhoods and provide a potential context for emotion mapping usage and its creation for the regeneration of modernist housing areas.
3. The case study on emotion mapping in Dainava, Kaunas, can serve as a typology for other cities and a benchmark for future regeneration plans. This phenomenon can facilitate future research endeavours to analyze individuals' transient experiences concerning the constructed environment. The use of mapping tools for conducting surveys can aid in the advancement of urban areas. It can be viewed as a nexus between individuals and architects to facilitate researchers' comprehension of participants' viewpoints regarding landscape and architecture.
4. The study on cityscapes sheds light on the challenges associated with modernist housing developments, including limited diversity and activity, monofunctional design, neglected green spaces, and inefficient parking layouts. The study underscores the significance of prioritizing the needs of residents and developing vibrant, inclusive, and well-maintained urban environments. As such, the experimental design offers various street escape options that address parking, pedestrian pathways, and cycling issues.
5. The research proved that Geo-tagged techniques might be employed with cognitive mapping techniques and environmental preference approaches to better understand participants' perspectives on the environment and architecture. Thus, when designing a district, it is crucial to consider the emotional associations attributed to specific areas through techniques such as Geo-tagged mapping. Besides, disliked areas can be revitalized by implementing well-designed public spaces and parks and remodelling modern buildings. Enhancing the district's connectivity through acquiring public activities can also be beneficial.
6. The project's suggested technique of regeneration path would make citizens physically appealing and emotionally engaging environments for various people. The multi-divisional research methodology worked well as a basis for local social community feelings. Using the several divisions of the overall study assisted in assessing emotions in various areas.
7. Visual analysis is used as a research technique to determine how individuals emotionally react to diverse environments in the neighbourhood's cuisine and the critical components of modernistic places. Residents of poorly designed spaces feel depressed more than 80% of the time, evidence that modern planning lacks quality places within districts.
8. Sentiment analysis and social media offer an effective technique for analyzing people's emotions through mapping and improved means of reaching individuals; this can serve as an innovative research tool for future urbanists.
9. The project demonstrated the viability of urban configuration. The utilization of varieties has been found to contribute to the augmentation of the associations between satisfaction with

urban public spaces and individuals' momentary emotions, encompassing their sense of security, comfort, happiness, and annoyance; this has been achieved through the implementation of emotional mapping and geo-tagging features.

10. The multi-divisional research methodology performed well as a basis for local social community feeling, with the many divisions of the overall study helping to assess emotions in different aspects. Visual analysis is an experimental method for evaluating people's emotional responses to various settings in the neighbourhood's index. The research confirmed that modern planning lacks qualitative places within districts, as residents feel sad in poorly designed spaces. The geo-tagging method helps people interact with their surroundings, think about their living environment, and express their feelings towards building conditions.
11. Using natural elements, such as plants, trees, and water, is one of the primary ways landscape designs may influence emotions. These features can create a relaxing and soothing impact on individuals, therefore aiding in reducing stress and anxiety. Additionally, this work has shown that exposure to nature may enhance emotions of pleasure, satisfaction, and well-being.
12. Emotion mapping and feeling analysis may guide the design of buildings, streetscapes, and landscape settings. Individualsegies aim to comprehend how individuals react emotionally to various parts of the built environment, such as architectural design, lighting, and landscaping. This information may be used to design emotionally engaging and pleasant settings for people to use.
13. For streetscapes and landscape settings, emotion mapping and feeling analysis may determine how various components, such as lighting, vegetation, and public art, impact people's emotional reactions. This information may be utilized to build more attractive and emotionally engaging streetscapes and landscape settings.
14. Integrating residential and commercial or community spaces within multi-functional buildings can result in economic benefits by creating additional revenue streams for building owners and supporting local businesses. Residential structures that serve multiple functions can offer benefits to foster the general livability and sustainability of urban areas and improve the standard of living.
15. The study project focused on structures and places that increase social interaction, and the notion of urban regeneration may be applied to various situations. It turns deteriorating neighbourhoods into flourishing communities and improves their quality of life.

Regarding future research, several approaches could be investigated to advance emotion mapping in regenerating modernist housing in Kaunas. These consist of the following:

- Additional investigation is required on the integration of emotion mapping into smart buildings and smart city initiatives by means of deploying sensors within buildings and urban areas to gauge individuals' emotional states and level of contentment with their surroundings.

- Creating more advanced sentiment mapping tools: Most emotion mapping tools rely on resident-reported surveys or interviews. However, new technologies such as ubiquitous sensors and facial recognition software could provide more precise and comprehensive data on the emotional responses of residents.
- The regeneration path might include additional layers for social, urban, and facility types that will be a good example of a city development model.

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## Appendices

### Appendix 1. Questionnaire (English)

I am Russul Saad Znad Mihyawi, a student of architecture master studies at Kaunas University of Technology (KTU). I am currently writing my master's thesis on the topic “Emotion Mapping Neighborhoods of Kaunas City ... “. The purpose of this questionnaire is to determine the ways of using emotions to propose spatial regeneration and development possibilities of modernistic neighborhoods, as well as to determine the relationship between the quality of life and buildings with and the community and people emotions

The questionnaire contains 2 groups of simple questions of 26 in one group and a personality exam (group 2) contains 50 questions. Questionnaire filling time - about 15 minutes. There are different types of questionnaire questions: where it is necessary to select only one or more of the answers provided or is asked to answer the question without the answers provided. Therefore, read the questions carefully and give you the most appropriate answers.

Your participation in this survey is crucial to demonstrate that involving the population at the forefront of environmental design processes is essential to creating an attractive environment for residents and raising the quality of living areas, therefore I invite you to express your views on the following questions bellow!

This form is anonymous, the data you provide will be used for the purposes of the thesis. If you have any questions, please contact me by e-mail: russul.mihyawi@ktu.edu.  
Thank you for your time!

1. How old are you?
  - Under 18
  - 18-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - 65+
  
2. What is your gender?
  - Female
  - Male
  - Other
  
3. What is your education?
  - main
  - secondary;
  - higher;
  - unfinished high,
  - high.
  
4. Where do you live (indicate district, street name and house number according to possibilities)  
.....

- .....
5. What is your favourite district in Kaunas?  
.....  
.....
  6. Where do you feel the happiest place in the Dainava neighborhood?  
.....  
.....
  7. Overall, how much do you like living in Dainava neighborhood?
    - A great deal
    - A lot
    - A moderate amount
    - A little
    - Not at all
  8. How strong is the sense of community in Dainava neighborhood?
    - Extremely strong
    - Very strong
    - Somewhat strong
    - Not so strong
    - Not at all strong
  9. How well are the streets in Dainava neighborhood maintained?
    - Extremely well
    - Very well
    - Somewhat well
    - Not So well
    - Not at all well
  10. How safe do you feel in Dainava neighborhood?
    - Extremely safe
    - Very safe
    - Somewhat safe
    - Not so safe
    - Not at all safe
  11. How clean is Dainava neighbourhood?
    - Extremely clean
    - Very clean
    - Somewhat clean
    - Not so clean
    - Not at all clean
  12. Where do you communicate to engage with your neighbourhood community?
    - events
    - home gathering
    - sharing buildings yards
    - kids playground
    - I don't see them at all
    - Other.....

13. What do you like most about Dainava neighborhood?  
 .....  
 .....

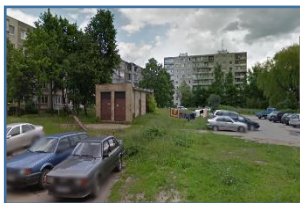
14. What function can make you happier if you would have it near your house?
- Parks
  - Libraries
  - Malls
  - Hospitals
  - Plazas
  - Restaurants
  - Others (.....)

15. How do you feel about the old buildings in Dainava neighborhood?
- Happy
  - Sad
  - annoyed
  - Neutral
  - Other.....

16. How safe do you feel in the Dainava neighbourhood (1-5)-1 is low, five is very safe.

17. What is your favourite activity?
- Going to the gym
  - Walking
  - Cycling
  - Visiting parks
  - Other (.....)

18. What do you feel about these buildings?



1.



2.



3.



4.

Feelings	Very happy	Happy	Moderately happy	Sad	Very sad	Neutral
<b>Buildings</b>	<b>happy</b>		<b>happy</b>			
<b>Building no 1</b>						
<b>Building no 2</b>				■		
<b>Building no 3</b>		■				

<b>Building no 4</b>						■
----------------------	--	--	--	--	--	---

19. How do you feel about these areas?



1



2.



3.



4.

Feelings	Very happy	Happy	Moderately happy	Sad	Very sad	Neutral
<b>Buildings</b>						
<b>Area no 1</b>		■				
<b>Area no 2</b>				■		
<b>Area no 3</b>		■				
<b>Area no 4</b>						■

20. How do you feel about these streetscapes?



1.



2.



3.



4.

Feelings	Verry happy	Happy	Moderately happy	Sad	Very sad	Neutral
Buildings						
Area no 1		■				
Area no 2				■		
Area no 3		■				
Area no 4						■

21. If you live in Dainava, mark your favourite place:



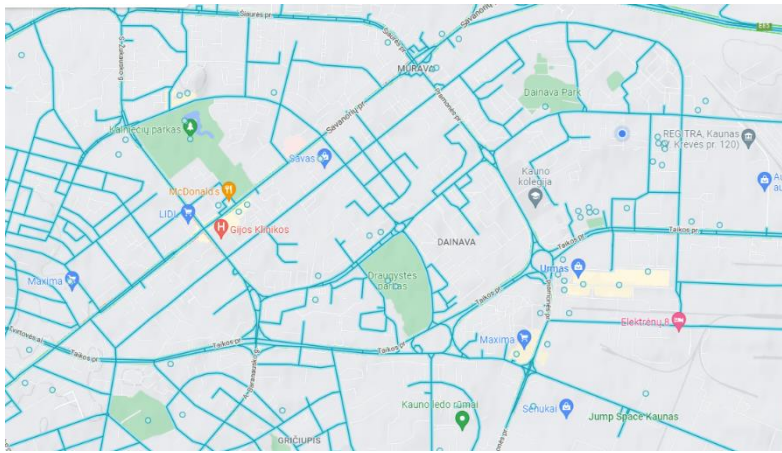
22. If you live in Dainava, mention your worst place:

.....

.....

23. If you live in Dainava, mention the place that you try to avoid always





24. How do you feel when you enter your neighborhood, mark on the map

## Appendix .2. Emotional intelligence questionnaire

This self-assessment questionnaire is designed to get you thinking about the various competencies of emotional intelligence as they apply to you.

Daniel Goleman first brought ‘emotional intelligence’ to a wide audience with his 1995 book of that name. He found that while the qualities traditionally associated with leadership such as intelligence, toughness, determination and vision are required for success, they are insufficient. Truly effective leaders are also distinguished by a high degree of emotional intelligence, which includes:

- **Self-awareness**

The ability to recognize what you are feeling, to understand your habitual emotional responses to events and to recognize how your emotions affect your behavior and performance.

When you are self-aware, you see yourself as others see you, and have a good sense of your own abilities and current limitations.

- **Managing emotions**

The ability to stay focused and think clearly even when experiencing powerful emotions. Being able to manage your own emotional state is essential for taking responsibility for your actions, and can save you from hasty decisions that you later regret.

- **Motivating oneself**

The ability to use your deepest emotions to move and guide you towards your goals. This ability enables you to take the initiative and to persevere in the face of obstacles and setbacks.

- **Empathy**

The ability to sense, understand and respond to what other people are feeling.

Self-awareness is essential to having empathy with others. If you are not aware of your own emotions, you will not be able to read the emotions of others.

- **Social Skill**

The ability to manage, influence and inspire emotions in others.

Being able to handle emotions in relationships and being able to influence and inspire others are essential foundation skills for successful teamwork and leadership.

## What to do

1. **Assess and score** each of the questionnaire's statements. Score your assessment, using a scale where

- **1** indicates that the statement *does NOT apply at all*
- **3** indicates that the statement *applies about half the time*
- **5** indicates that the statement *ALWAYS applies to you*

### 1. Assess and score how much each statement applies to you

#	How much does each statement apply to you	Mark your score				
<p>Read each statement and decide how strongly the statement applies to YOU. Score yourself 1 to 5 based on the following guide. strongly</p> <p>1 = Does not apply ~ 3 = Applies half the time ~ 5 = Always applies</p>		<p><input type="radio"/> The number that shows how the statement applies</p>				
1	I realize immediately when I lose my temper	1	2	3	4	5
2	I can 'reframe' bad situations quickly	1	2	3	4	5
3	I am able to always motivate myself to do difficult tasks	1	2	3	4	5
4	I am always able to see things from the other person's viewpoint	1	2	3	4	5
5	I am an excellent listener	1	2	3	4	5
6	I know when I am happy	1	2	3	4	5
7	I m showing my intimate emotions in an honest and open manner	1	2	3	4	5
8	I am usually able to prioritize important activities at work and get on with them	1	2	3	4	5
9	I am excellent at empathizing with someone else's problem	1	2	3	4	5
10	I never interrupt other people's conversations	1	2	3	4	5
11	I usually recognize when I am stressed	1	2	3	4	5
12	Others can rarely tell what kind of mood I am in	1	2	3	4	5
13	I always meet deadlines	1	2	3	4	5
14	I can tell if someone is not happy with me	1	2	3	4	5
15	I am good at adapting and mixing with a variety of people	1	2	3	4	5
16	When I am being 'emotional' I am aware of this	1	2	3	4	5
17	I rarely 'fly off the handle' at other people	1	2	3	4	5
18	I never waste time	1	2	3	4	5
19	I can tell if a team of people are not getting along with each other	1	2	3	4	5

20	People are the most interesting thing in life for me	1	2	3	4	5
21	When I feel anxious, I usually can account for the reason(s)	1	2	3	4	5
22	Difficult people do not annoy me	1	2	3	4	5
23	I do not prevaricate	1	2	3	4	5
24	I can usually understand why people are being difficult towards me	1	2	3	4	5
25	I love to meet new people and get to know what makes them 'tick'	1	2	3	4	5
26	I always know when I'm being unreasonable	1	2	3	4	5
27	I can consciously alter my frame of mind or mood	1	2	3	4	5
28	I believe you should do the difficult things first	1	2	3	4	5
29	Other individuals are not 'difficult' just 'different'	1	2	3	4	5
30	I need a variety of work colleagues to make my job interesting	1	2	3	4	5
31	Awareness of my own emotions is very important to me at all times	1	2	3	4	5
32	I do not let stressful situations or people affect me once I have left work	1	2	3	4	5
33	Delayed gratification is a virtue that I hold to	1	2	3	4	5
34	I can understand if I am being unreasonable	1	2	3	4	5
35	I like to ask questions to find out what it is important to people	1	2	3	4	5
36	I can tell if someone has upset or annoyed me	1	2	3	4	5
37	I rarely worry about work or life in general	1	2	3	4	5
38	I believe in 'Action this Day'	1	2	3	4	5
39	I can understand why my actions sometimes offend others	1	2	3	4	5
40	I see working with difficult people as simply a challenge to win them over	1	2	3	4	5
41	I can let the anger 'go' quickly so that it no longer affects me	1	2	3	4	5
42	I can suppress my emotions when I need to	1	2	3	4	5
43	I can always motivate myself even when I feel low	1	2	3	4	5
44	I can sometimes see things from others' point of view	1	2	3	4	5
45	I am good at reconciling differences with other people	1	2	3	4	5
46	I know what makes me happy	1	2	3	4	5
47	Others often do not know how I am feeling about things	1	2	3	4	5
48	Motivations has been the key to my success	1	2	3	4	5

<b>49</b>	Reasons for disagreements are always clear to me	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>50</b>	I generally build solid relationships with those I work with	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

### Appendix 3. Questionnaire (Lithuanian)

Emocijų kartografavimo panaudojimas formuojant Kauno miesto modernistinius gyvenamuosius rajonus

Esu Russul Saad Znad Mihiyawi, Kauno technologijos Universiteto (KTU) architektūros magistrantūros studijų studentė. Šiuo metu rašau magistro baigiamąjį darbą tema „Emocijų kartografavimo panaudojimas formuojant Kauno miesto modernistinius gyvenamuosius rajonus“. Šios anketos tikslas – nustatyti emocijų panaudojimo būdus siūlant modernistinių gyvenamųjų kvartalų erdvinio pertvarkymo ir atgaivinimo galimybes, taip pat nustatyti ryšį tarp gyvenimo kokybės ir pastatų su bendruomenės ir žmonių emocijomis.

Anketoje yra dvi klausimų grupės po 25 ir 50 klausimų (apie Dainavos mikrorajoną ir su juo susijusias emocijas ir klausimai emociniam intelektui įvertinti). Anketos pildymo laikas – apie 15 min. Anketos klausimai yra skirtingų tipų: prašoma pasirinkti tik vieną arba kelis atsakymo variantus iš pateiktų arba prašoma atsakyti į klausimą be pateiktų variantų. Todėl atidžiai perskaitykite klausimus ir pateikite jums labiausiai tinkamus atsakymus.

Jūsų dalyvavimas šioje apklausoje yra labai svarbus siekiant įrodyti, kad gyventojų įtraukimas į aplinkos projektavimą yra būtinas kuriant gyventojams patrauklią aplinką ir gerinant gyvenimo kokybę, todėl kviečiu išsakyti savo nuomonę žemiau pateiktais klausimais!

Ši anketa yra anoniminė, jūsų pateikti duomenys bus naudojami baigiamojo darbo tikslams pasiekti. Iškilus klausimams galite susisiekti el. paštu: russul.mihyawi@ktu.edu

Ačiū už jūsų brangų laiką!

25. Kiek jums metų?
- Under 18
  - 18-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - 65+
26. Kokia jūsų lytis?
- Moteris
  - Vyras
  - Kita
27. Koks jūsų išsilavinimas?
- pagrindinis
  - vidurinis;
  - aukštesnysis;
  - nebaigtas aukštasis,
  - aukštasis.

28. Kur jūs gyvenate (pagal galimybes nurodykite mikrorajoną, gatvę, namo numerį)?  
.....  
.....
29. Koks jūsų mėgstamiausias rajonas Kaune?  
.....  
.....
30. Kurioje Dainavos mikrorajono vietoje jautiesi laimingiausia(ias)?  
.....  
.....
31. Kaip apskritai jums patinka gyventi Dainavos mikrorajone (pasirinkite vieną atsakymą)?
- Labai patinka
  - Patinka
  - Vidutiniškai patinka
  - Šiek tiek patinka
  - Nepatinka
32. Kiek stiprus bendruomeniškumo jausmas Dainavos mikrorajone (pasirinkite vieną atsakymą)?
- Ypač stiprus
  - Labai stiprus
  - Vidutiniškai stiprus
  - Nelabai stiprus
  - Visai nestiprus
  - Nėra bendruomeniškumo jausmo
33. Kaip prižiūrimos gatvės Dainavos mikrorajone (pasirinkite vieną atsakymą)?
- Ypač gerai
  - Labai gerai
  - Vidutiniškai
  - Nelabai gerai
  - Prastai
34. Kiek saugiai jaučiatės Dainavos mikrorajone (pasirinkite vieną atsakymą)?
- Ypač saugiai
  - Labai saugiai
  - Vidutiniškai saugiai
  - Nelabai saugiai
  - Nesaugiai
35. Kiek švarus yra Dainavos mikrorajonas (pasirinkite vieną atsakymą)?
- Ypač švarus
  - Labai švarus
  - Vidutiniškai švarus
  - Nelabai švarus

- Visai nešvarus
36. Kur bendraujate su savo kaimynystės bendruomenės nariais (galite pasirinkti kelis atsakymus)?
- Viešuose bendruomenės renginiuose
  - Susibūrimuose namuose
  - Namų kiemuose
  - Vaikų žaidimų aikštelėse
  - Nebendrauju
  - Kita.....
37. Kas jums labiausiai patinka Dainavos mikrorajone?
- .....
- .....
38. Kokia funkcija gali padaryti jus laimingesnius, jei būtų šalia jūsų namų (galite pasirinkti kelis atsakymus)?
- Parkas
  - Biblioteka
  - Prekybos centras
  - Ligoninė
  - Restoranas
  - Miesto aikštė
  - Kita (.....)
39. Ką jaučiate seniems Dainavos mikrorajono pastatams (pasirinkite vieną atsakymą)?
- Esu laiminga(as)
  - Esu liūdna(as)
  - Esu susinervinusi(ęs)
  - Neturiu jokių jausmų
  - Kita.....
40. Kaip saugiai jaučiatės Dainavos mirorajone (įvertinkite ballais nuo 1 iki 5, kur 1- labai nesaugu, o 5 - labai saugu)?
41. Kokia jūsų mėgstamiausia veikla (galite pasirinkti kelis atsakymus)?
- Sportas
  - Ėjimas pasivaikščioti
  - Važiavimas dviračiu
  - Parkų lankymas
  - Kita (.....)
42. Kokias emocijas jaučiate šiems pastatams?



2.



2.



3.



4.

Jausmus	Verry laimingas	Verry laimingas	Verry laimingas	Liūdnas	Labai liūdna	Labai liūdna
Building no 1						
Building no 2				■		
Building no 3		■				
Pastato nr. 4						■

43. Kokias emocijas jaučiate šioms teritorijoms? **How do you feel about these areas?**



1



3.



4.



Jausmai	Esu labai laiminga(as)	Esu laiminga(as)	Esu vidutiniškai laiminga(as)	Esu liūdna(as)	Esu labai liūdna(as)	Nieko nejaučiu
erdvė Nr. 1		■				
erdvė Nr. 2				■		
erdvė Nr. 3		■				
erdvė Nr. 4						■



44. Kokias emocijas jaučiate šioms gatvėms?



1.



2.



3.



4.

Feelings sritis	Esu labai laiminga(as)	Esu laiminga(as)	Esu vidutiniškai laiminga(as)	Esu liūdna(as)	Esu labai liūdna(as)	Nieko nejaučiu
Sritis no 1		■				
Sritis no 2				■		
Sritis no 3		■				
Sritis no 4						■

45. Jei gyvenate Dainavoje, pažymėkite savo mėgstamiausią(ias) vietą(as):

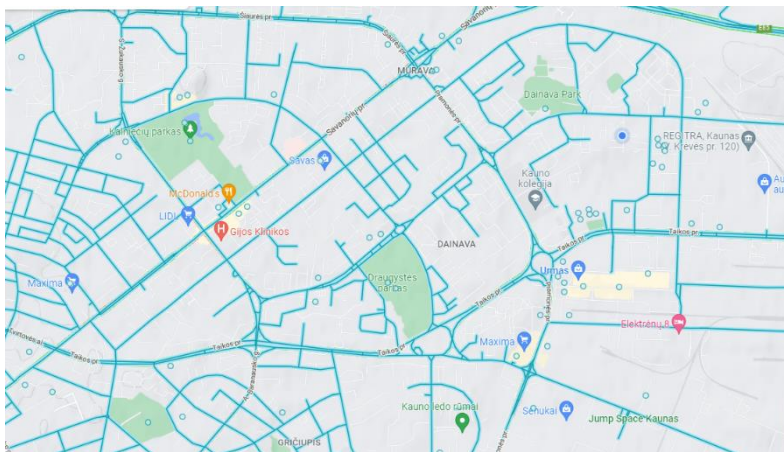


46. Jei gyvenate Dainavoje, pažymėkite savo nemėgstamą(as) vietą(as):

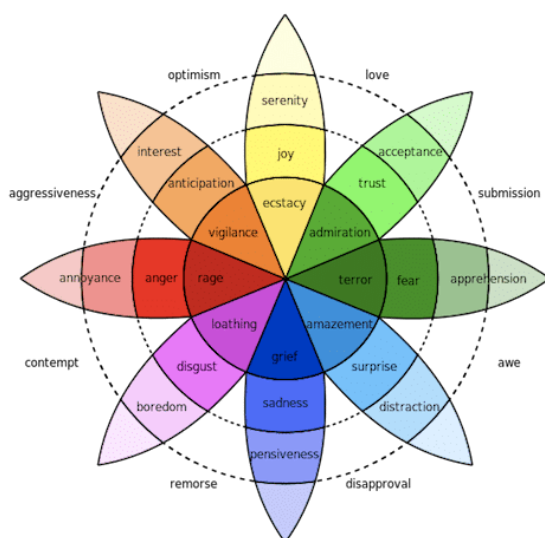
.....

.....

47. Jei gyvenate Dainavoje, pažymėkite vietą(as), kurios(ių) visada stengiatės vengti:



48. Kaip jaučiatės, kai ateinate į savo mikrorajoną (pažymėkite ant schemos)?



### EI) Emocinio intelekto klausimynas

Šis savęs vertinimo klausimynas yra skirtas tam, kad priverstų jus galvoti apie įvairias emocinio intelekto kompetencijas, kai jos taikomos jums.

Danielis Golemanas pirmą kartą atnešė "emocinį intelektą" plačiai auditorijai su savo 1995 m. Tokio pavadinimo knyga. Jis nustatė, kad nors savybės, tradiciškai susijusios su lyderyste, pvz., Intelektas, kietumas, ryžtas ir vizija, reikalingos sėkmei, jų nepakanka. Tikrai veiksmingi lyderiai taip pat pasižymi aukštu emocinio intelekto laipsniu, kuris apima:

- **Savimonės**

Gebėjimas atpažinti, ką jaučiate, suprasti savo įprastas emocines reakcijas į įvykius ir atpažinti, kaip jūsų emocijos veikia jūsų elgesį ir našumą.

Kai esate sąmoningas, matote save taip, kaip jus mato kiti, ir gerai suvokiate savo sugebėjimus ir dabartinius apribojimus.

- **Emocijų valdymas**

Gebėjimas išlikti susikaupusiam ir aiškiai mąstyti net patiriant galingas emocijas. Gebėjimas valdyti savo emocinę būseną yra būtinas prisiimant atsakomybę už savo veiksmus ir gali išgelbėti jus nuo skubotų sprendimų, dėl kurių vėliau apgailestaujate.

- **Motyvuoja save**

Gebėjimas naudoti savo giliausias emocijas judėti ir nukreipti jus link savo tikslų. Šis gebėjimas leidžia jums imtis iniciatyvos ir atkakliai susidurti su kliūtimis ir nesėkmėmis.

- **Empatija**

Gebėjimas jausti, suprasti ir reaguoti į tai, ką jaučia kiti žmonės.

Savimonė yra būtina norint turėti empatiją kitiems. Jei nežinote apie savo emocijas, negalėsite skaityti kitų emocijų.

- **Socialiniai įgūdžiai**

Gebėjimas valdyti, daryti įtaką ir įkvėpti emocijas kitiems.

Gebėjimas valdyti emocijas santykiuose ir sugebėti daryti įtaką ir įkvėpti kitus yra esminiai sėkmingo komandinio darbo ir vadovavimo įgūdžiai.

### *Ką daryti*

**1. Įvertinkite ir** įvertinkite kiekvieną klausimyno išrašą. Įvertinkite savo vertinimą, naudodami skalę, kurioje

- **1** rodo, kad teiginys *visiškai netaikomas*
- **3** rodo, kad pareiškimas *taikomas maždaug pusę laiko*
- **5** rodo, kad teiginys *visada taikomas jums*

**Skaičius , rodantis, kaip stipriai taikomas pareiškimas: Skaičius, rodantis, kaip tvirtai teiginys galioja.**

### 1. Įvertinkite ir įvertinkite, kiek kiekvienas teiginys jums taikomas

#	Kiek kiekvienas teiginys tinka jums	Pažymėkite savo vertinimą				
<p>Perskaitykite kiekvieną teiginį ir nuspręskite, kiek teiginys tinka JUMS. Skaičius, rodantis, kaip tvirtai teiginys galioja.</p> <p>Įvertinkite save nuo 1 iki 5 pagal šį vadovą: 1 = netinka ~ 3 = vidutiniškai tinka ~ 5 = tinka visada</p>						
1	Iš karto suprantu, kai netenku savitvardos	1	2	3	4	5
2	Galiu greitai „pervarkyti“ blogas situacijas	1	2	3	4	5
3	Sugebu visada motyvuoti save atlikti sudėtingas užduotis	1	2	3	4	5
4	Aš visada galiu pamatyti dalykus iš kito žmogaus požiūriu	1	2	3	4	5
5	Esu puikus klausytojas	1	2	3	4	5
6	Žinau, kada esu laiminga(as)	1	2	3	4	5
7	Aš rodau savo intymias emocijas sąžiningai ir atvirai	1	2	3	4	5

8	Paprastai darbe galiu teikti prioritetus svarbioms veikloms ir jas vykdyti	1	2	3	4	5
9	Puikiai moku įsijausti į kažkieno problemą	1	2	3	4	5
10	Niekada nepertraukiau kitų žmonių pokalbių	1	2	3	4	5
11	Paprastai atpažįstu, kai jaučiu stresą	1	2	3	4	5
12	Kiti retai gali pasakyti, kokios aš nuotaikos	1	2	3	4	5
13	Aš visada laikausi terminų	1	2	3	4	5
14	Aš galiu pasakyti, ar kas nors nėra laimingas su manimi	1	2	3	4	5
15	Man gerai sekasi prisitaikyti ir maišyti su įvairiais žmonėmis.	1	2	3	4	5
16	Man gerai sekasi prisitaikyti ir maišyti su įvairiais žmonėmis.	1	2	3	4	5
17	Man gerai sekasi prisitaikyti ir maišyti su įvairiais žmonėmis.	1	2	3	4	5
18	Aš niekada nešvaistau laiko	1	2	3	4	5
19	Aš niekada nešvaistau laiko	1	2	3	4	5
20	Aš niekada nešvaistau laiko	1	2	3	4	5
21	Aš niekada nešvaistau laiko	1	2	3	4	5
22	Aš niekada nešvaistau laiko	1	2	3	4	5
23	Aš ne prevaricate	1	2	3	4	5
24	Aš paprastai suprantu, kodėl žmonės yra sunku į mane	1	2	3	4	5
25	Aš paprastai suprantu, kodėl žmonės yra sunku į mane	1	2	3	4	5
26	Aš visada žinau, kada esu neprotingas.	1	2	3	4	5
27	Aš visada žinau, kada esu neprotingas.	1	2	3	4	5
28	Aš visada žinau, kada esu neprotingas.	1	2	3	4	5
29	Kiti asmenys nėra "sunkūs" tik "skirtingi".	1	2	3	4	5
30	Kiti asmenys nėra "sunkūs" tik "skirtingi".	1	2	3	4	5
31	Savo emocijų suvokimas man yra labai svarbus visais laikais.	1	2	3	4	5
32	Aš neleidžiu stresinėms situacijoms ar žmonėms paveikti mane, kai paliksiu darbą	1	2	3	4	5
33	Uždelstas patenkinimas yra dorybė, kurią laikausi	1	2	3	4	5
34	Aš suprantu, jei aš esu neprotingas	1	2	3	4	5
35	Aš suprantu, jei aš esu neprotingas	1	2	3	4	5

36	Aš galiu pasakyti, jei kas nors nusiminusi ar erzina mane	1	2	3	4	5
37	Aš galiu pasakyti, jei kas nors nusiminusi ar erzina mane	1	2	3	4	5
38	Aš galiu pasakyti, jei kas nors nusiminusi ar erzina mane	1	2	3	4	5
39	Aš galiu pasakyti, jei kas nors nusiminusi ar erzina mane	1	2	3	4	5
40	Manau, kad darbas su sunkiais žmonėmis yra tiesiog iššūkis juos nugalėti.	1	2	3	4	5
41	Aš galiu leisti pykčiui "eiti" greitai, kad jis manęs nebeveiktų.	1	2	3	4	5
42	Aš galiu leisti pykčiui "eiti" greitai, kad jis manęs nebeveiktų.	1	2	3	4	5
43	Aš visada galiu motyvuoti save net tada, kai jaučiuosi žemai.	1	2	3	4	5
44	Kartais aš matau dalykus iš kitų požiūrio taško.	1	2	3	4	5
45	Kartais aš matau dalykus iš kitų požiūrio taško.	1	2	3	4	5
46	Kartais aš matau dalykus iš kitų požiūrio taško.	1	2	3	4	5
47	Kiti dažnai nežino, kaip aš jaučiuosi dėl dalykų.	1	2	3	4	5
48	Kiti dažnai nežino, kaip aš jaučiuosi dėl dalykų.	1	2	3	4	5
49	Nesutarimų priežastys man visada aiškios	1	2	3	4	5
50	Aš paprastai užmezgu tvirtus santykius su tais, su kuriais dirbu.	1	2	3	4	5

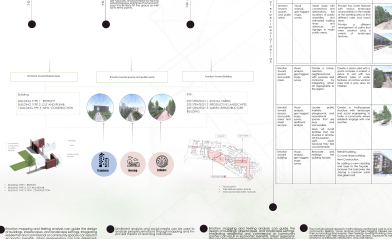
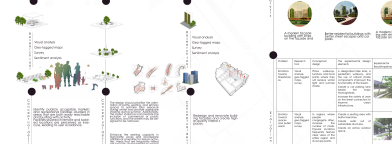
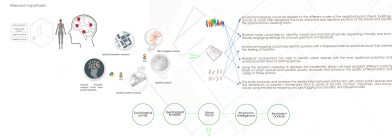
The Use of Emotion Mapping in the Formation of Modernist Neighbourhoods of Kaunas City

By Rūta Štadė Pradė, MSc Architect Supervisor Prof. Dr. Jūratė Korkutė

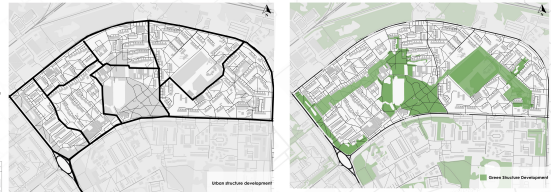
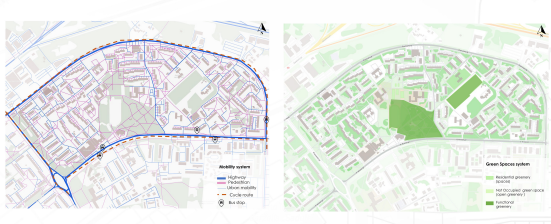
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Keywords: Emotion Mapping, Modernist Neighbourhoods, Urban Regeneration, Kaunas City

1. Introduction
2. Methodology
3. Results
4. Discussion
5. Conclusion



Urban Analysis and Proposed Development



Streetscapes Regeneration proposals



Regeneration Path Proposal

