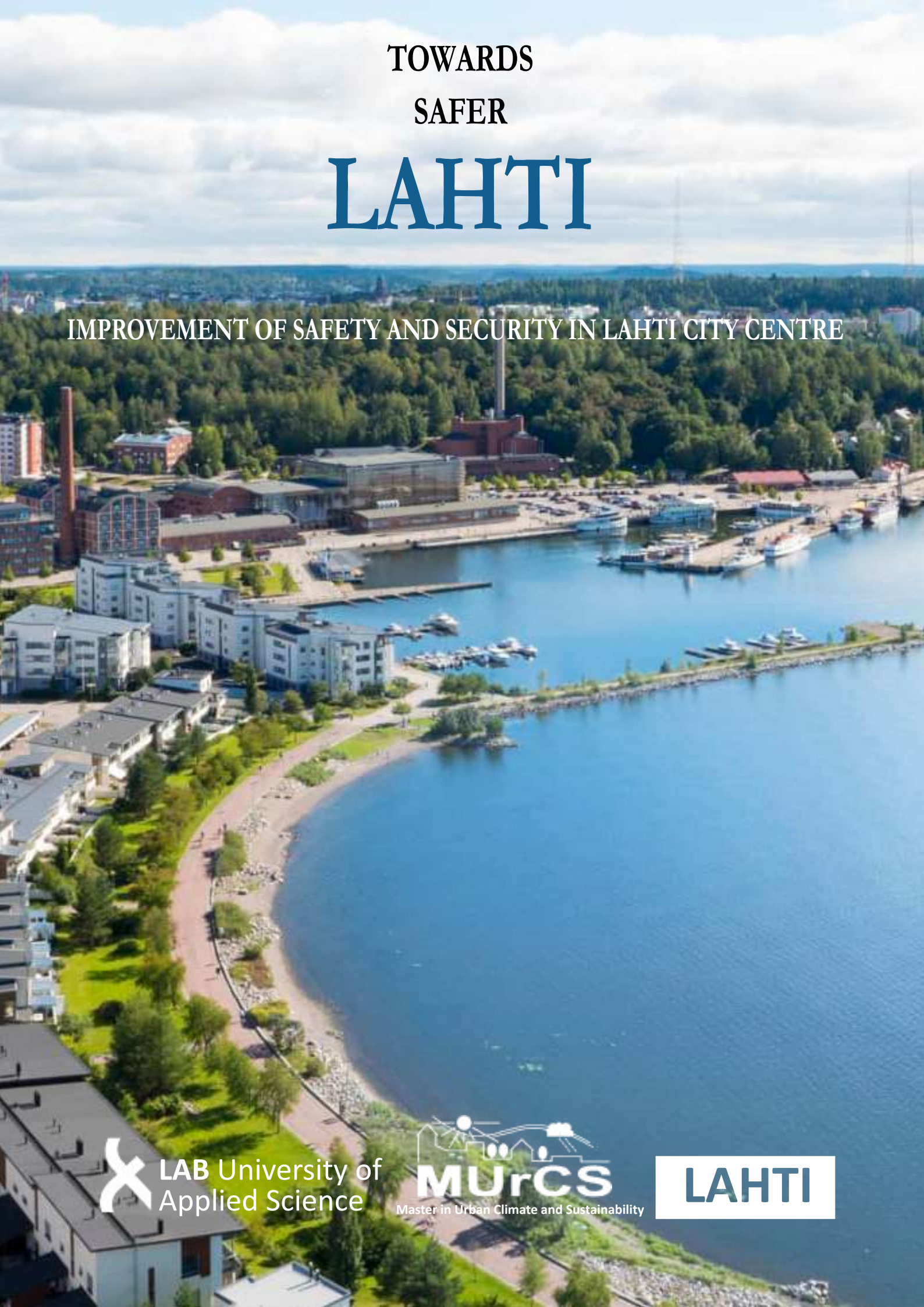
TOWARDS SAFER LAHTI

IMPROVEMENT OF SAFETY AND SECURITY IN LAHTI CITY CENTRE



LAB University of Applied Science

MUrCS
Master in Urban Climate and Sustainability

LAHTI

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IMPROVEMENT OF SAFETY AND SECURITY IN LAHTI CITY CENTRE

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"There is no logic that can be superimposed on the city; people make it, and it is to them, not buildings, that we must fit our plans."
Jane Jacobs, 1958.

This work is dedicated to the citizens of Lahti, for their kindness, enthusiasm and response during this report. Also, to the professionals that guide as in the process: M.A. Eeva Aarrevaara, Dr Anne Pässilä, Johanna Sääksniemi and Henrik Saari.

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FOREWORD

The initiative for this project was received from Lahti city planning: city planning architect Anne Karvinen-Jussilainen, master planning architect Johanna Sääksniemi and interaction planner Henrik Saari. They have supported the process actively and have had a major impact on this work. Urban and Interactive planning module started in LAB University of Applied Sciences on 16th March 2020. We faced the situation immediately when the LAB campus became closed, and the lectures and meetings turned into online. Additionally, new ways to work needed to be found because our concept to work in urban planning has usually been significantly involved with physical meetings with different stakeholders, site visits in the planning area, excursions in interesting urban environments in other cities and in general project-based working methods.

However, new virtual ways of working were adapted, and meetings arranged together with the students and city planners in Lahti. Lectures during this module concentrated in the concept and researches of city safety, the planning system and participation and earlier researches like resident inquiry in 2017 by Lahti city planning and research project Everyday places and routes, managed by Aalto University and Helsinki University, which both contained usable information for this project. Henrik Saari introduced the use of Maptionnaire tool, and the students started to develop the content for the map-based inquiry, which was evaluated and developed in an interactive process with city planners. Finally, the survey was shared as a pilot to especially with user groups representing professional groups working in the city centre area and having the opportunity to observe the safety of the centre. Also, it was shared with representatives with active citizens in the centre and younger people, especially students.

This report contains all the phases that we have been performing, starting from the collection of different examples of city safety improvements around the world. Also, the theoretical background of city safety and place-based development is introduced. The performance of the Maptionnaire inquiry is presented as well as the results of the survey. The last phase of the process was for the students to concentrate on chosen parts of the city centre, to analyse the present situation and present suggestions for the improvement of safety. These areas were chosen based on the earlier surveys concerning the city centre and discussed together with city planners.

The student group in this module consists of MUrCS programme students and Finnish Master students in Urban Sustainability program in LAB University of Applied Sciences. All the students have already work-life experience and professional skills which have benefitted the work in a significant way. The students have been deeply involved and enthusiastic about the project. It has been a pleasure to facilitate this project, and I´m pleased to thank all the participants, the students, the city planners and the resident representatives!

Lahti, 30th April 2020

DSc(Arch) Eeva Aarrevaara

Principal lecturer

INTRODUCTION

Finland is one of the safest countries in the world (Statistics Finland, 2020). Here is possible to find 5-year-old kids walking alone in the streets or mothers leaving babies sleeping in strollers outside the stores. Crimes rates are meagre; nevertheless, Finns still perceive unsafe situations on the roads. So, how to improve safety in Finland?

Lahti is the capital of the Päijänne Tavastia region, and the 8th biggest city in terms of population in the country with 119 951 inhabitants (Statistics Finland, 2019). This city is a sample of the general Finland condition. Lahti has also been selected as the EU Green Capital 2021, in recognition of their environmental activities. The goal of this project is to create a document which identifies unsafe spots in the city with the citizen's participation. Also, to recover the main problems in those areas and suggest solutions. The process considered the opinion of the community and a multidisciplinary team. The process and results will be part of a pilot project of the City Council to improve the City Centre in the future.

The exceptional condition of COVID-19 forced the process to take new tools for its development. The national recommendation of social distancing, lead to online classes, online group meetings, and the most relevant for this study: an online questionnaire for the Lahti Citizens to keep the "interactive" concept of the project. Maptionnaire became a useful platform to recover neighbours opinions and information, while at the same time obtained geo-reference specific data. Additionally, this tool had been used by the City Council in previous works.

Five chapters compose the report. The first one present concepts related to safety, security, and safety in cities. The second chapter recovers the experiences of different countries and different scales that also focused on safety issues. Chapter three reviews previous studies made in Lahti with citizen participation during the years 2017 and 2018 to consider them for the next analysis. The fourth chapter includes the outcomes of the questionnaire the group prepared in the frame of the present report. Finally, the last section consists of the specific problems and solutions for five specific areas in Lahti City Centre.

The project was developed as part of "Urban Interactive Planning" Course in LAB University. The students are Master students related to sustainability, from different background studies and countries. In addition to DSc(Arch) Eeva Arrevarra, we obtained support and guidance of representatives of the City Council, Johanna Sääksniemi and Henrik Saari Last but not least, we received the valuable participation of many of Lahti's neighbours in two weeks.

The report includes the participation of ten students. The initial section of finding project references was developed individually. The Mapptionaire questionnaire was written in an online shared file, which was edited several times until obtaining the most relevant inquiries and a proper time for the residents to respond. There was a response of the group to introduce the questions in the Mapptionare platform. In parallel, three groups were formed to study in detail six selected areas in Lahti city centre. Each group was responsible for reviewing each area, make a field survey with the method they considered appropriate, detect problems and define improvement proposals. Finally, for the final report, the work was distributed in new groups according to the students' capacities and interests.

The report is an addition of different efforts moved for the common interest of improving the urban environment for the benefit of its citizens. The limitations are related to the current pandemic context, which did not allow the observation of typical activities in the study sites. Time also restricted the number of participants in the questionnaire. Despite these limitations, the survey can be replayed, as well as the general path of the present analysis method in other sites.

CHAPTER 1: THEORETICAL FRAMEWORK OF SAFETY

Figure 1. Aerial view of Lahti and Lake Vesijärvi. Source: City of Lahti, n.d.

1.1. HOW CITY SAFETY AND SECURITY ARE DEFINED?

Built environment security means that residents can, i.e. easily run their errands, go to work and school, do their hobbies, hang out and play - and do these kinds of things happily, without feeling insecure. A safe built environment encourages people to take their place in common outdoor spaces such as walking trails, streets, parks, public transportation and other places and services - without having to worry. When planning and building cities and other communities, it is important to ensure that trust and a sense of security are maintained. Security is also openness. In a safe environment, no one is excluded, but it is both physically and attitudinally open to all. Openness often also improves natural control. In open spaces and places, there are several pairs of eyes and ears, which in themselves increase safety and a sense of security and can prevent, among other things, vandalism and disruptive behaviour (Hirvola, 2009).

Security as a concept covers more than safety. Safety can be considered more as a moment or situation when nothing bad or scary is happening. Security is more like a feeling of being safe. Safety refers more to the absence of a physical threat, while security also refers to the lack of intangible threats. However, in many languages, like in Finnish, safety and security are synonyms and cannot be separated in common language (Van den Berg, 2006).

1.2. PERCEIVED SAFETY

Perceived safety is always a subjective experience of a person's sense of security or insecurity. Feeling of security is very important for the vitality of the city centre. Without feeling safe, there is a risk that city residents and visitors will start to avoid the downtown area. Many factors affect the perceived safety. Insecurity can be caused, for example by unused land areas, waste areas and unclean or polluted urban environments, broken windows, graffiti or any other sign of vandalism. Feelings of insecurity can also be caused by a real threat of violence or just imagined threat, e.g. something heard in the news or seen in a movie. Some areas might even feel calm and pleasant during the day, but scary at night (Andersson, 2008).

As said perceived insecurity is not necessarily directly related to real threats and dangers. Fear does not follow crime or accident statistics. Even if the feeling of insecurity is based on misconceptions, like crime, it affects the quality of life and the use of the built environment. Insecurity as a feeling is not just caused by scary places. Feelings of insecurity are affected by, among other things, individual vulnerabilities and images created by the media. Insecurity can also be caused by uncertainty related to age, sex and life situation. Although the cause of insecurity is a factor completely separate from the environment, it, together with the shortcomings of the environment, may lead to real dangers and limited use of the built environment (Hirvola, 2009).

According to Van den Berg, Pol, Mingardo and Speller (2006) lack of neighbourhood social structure the quality of the built environment, the level of immigration integration, socio-economic structure and different kind of disasters also impact perceived security. Perceived security can be divided into two categories: endogenous factors and exogenous factors. Endogenous factors are the ones that can be influenced by authorities, but with exogenous factors like natural disasters, it is not possible. These factors are not mutually exclusive since something exogenous can be partly endogenous as well (Van den Berg, Pol, Mingardo and Speller, 2006).

When it comes to the perceiving security there is a tense trade-off relationship between security and freedom. It has been said that more security means more freedom and more freedom means more insecurity. Factors that reduce the so-called sense of freedom are, for example, surveillance cameras, gates and police. And natural tense of security is good visibility and lightning. Easy way to prioritize pedestrian traffic in

downtown are promote walking, cycling and the use of public transportation (Hirvola, 2009).

1.3. ELEMENTS OF A SAFE CITY

The most important tool for increasing the security of the city centre is to revitalize the city centre and at the same time strive for a wider change in urban culture. The revitalization measures concern the social as well as the functional and physical environment of the city (Andersson, 2008)

The most important starting point for a policy to revitalize the city centre and increase security are the citizens themselves. The general argument is that "human places" are safer places. The presence of people in a public urban space tends to calm the minds of the townspeople and human activity in an area often attracts other people. Great way to find these human places are community partnership programmes, where citizens are expected to contribute together with other stakeholders, citizen who lives in the area. There is another solution for revitalizing areas, where persons are in the hotspot rather than central areas. Act for minor crimes are local neighbourhood and police. This is called zero tolerance (Andersson, 2008).

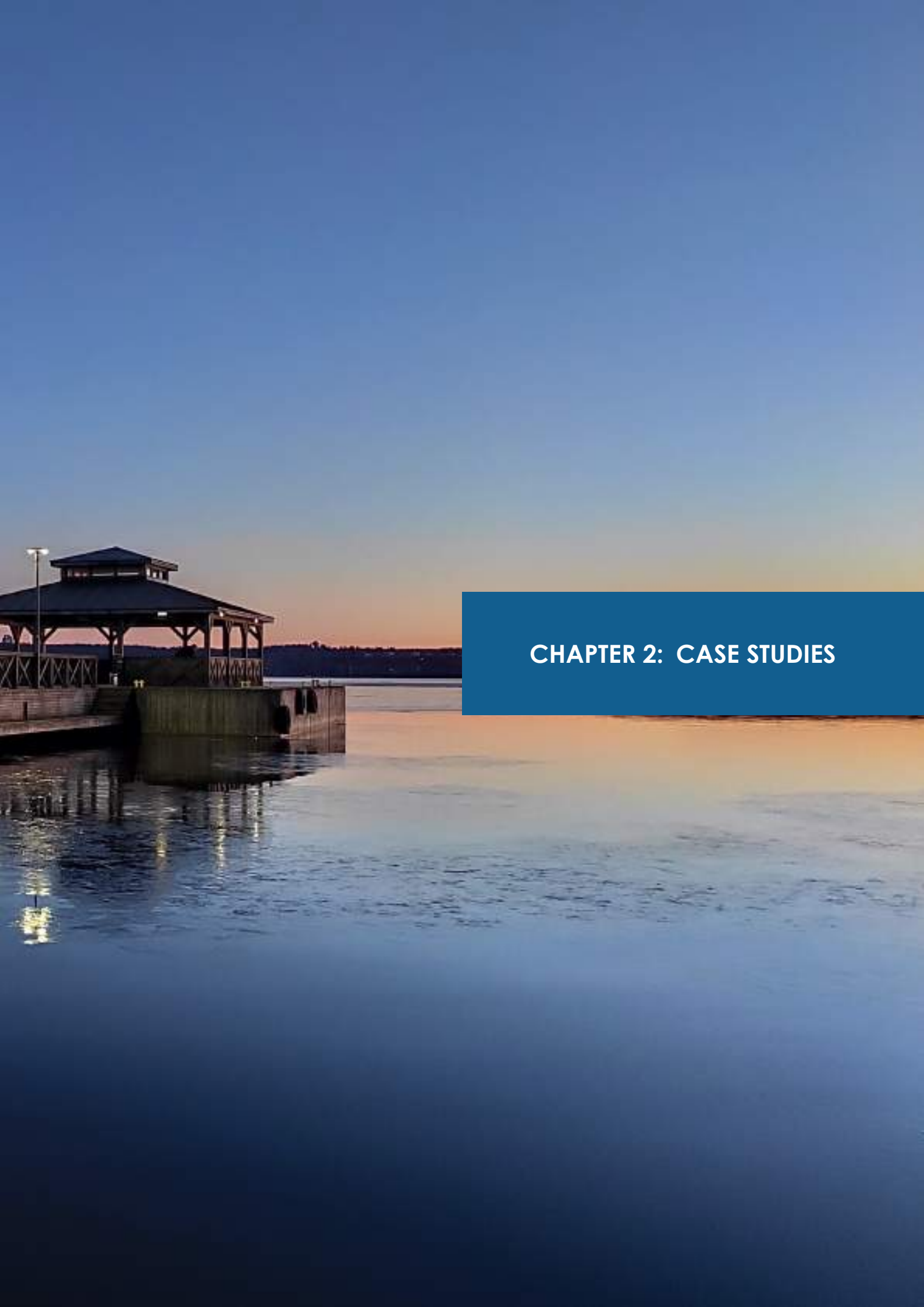
Safety is also personal space, where there is no need to be scared of violence or drug users. Feeling safe people should be able to trust their living environment. Making area more comfortable, it needs to reply their demands of living. Many problematic environments are characterized by a variety of disadvantages: deficiencies in the quality and maintenance of construction, poor housing conditions, poor services, and poor amenity. This is called sense of community (Hirvola, 2009).

The simplest way to protect the built environment is to use a variety of security systems such as gates and fences, camera surveillance and private security shops. However, excessive private control of urban space can turn a city into a "fortress" where not all city dwellers are equal users of urban space. (Andersson, 2008.) The control of built environment and the protection of city life by the city authorities are related to the management of public urban space. Typical means are various regulations and rules. The regulation may be temporal and concern, for example, noise nuisance of traffic, or it may be regional, where, for example, alcohol consumption is prohibited in public places in the city centre. On the other hand, deregulation can also be used to revitalize the city centre and parks and squares and increase its vitality, for example by allowing more round-the-clock activities (Andersson, 2008).

Solutions for developing built environment also include avoiding the construction of single-use urban spaces, including car parks and locating safe zones, known as "safety corridors", in the context of problem areas in downtown areas or making "unsafe zones" safe, especially for time-dependent spaces. Development of the built environment in the urban centre should include public urban spaces designed to be located in close proximity to intensively used urban environments. Another important starting point for urban reform in land use planning is to accelerate the construction of empty or declining urban neighbourhoods and plots. For example, companies should have tax benefits if they invest in so called declining zones or keystone opportunity zones (Andersson, 2008).

Figure 2. Railstation tunnel in the City Centre of Lahti, Finland. Source: Saloma, 2020.

Figure 3. Buchannan Street in the City Centre of Glasgow. Source: Saloma, 2019.



CHAPTER 2: CASE STUDIES

Figure 4. Sunset in Mukkula Pier, next to the City Centre. Source: Ananyeva, 2020.

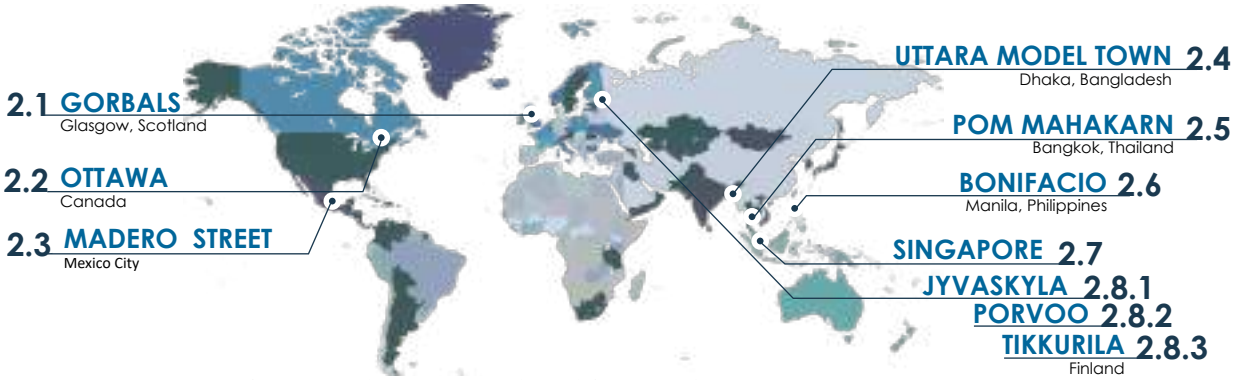


Figure 5. Location for case studies. Source: Adapted from Rojal, 2017.

Every country has its strategies and regulations to maintain safety and security, even there are region-specific rules for safety measures within the country. All countries may have some similar laws and regulations, but actions and implementations vary in most cases. This section will describe several cases from 10 different cities of 8 different countries of 4 different continents. Explained below for each case are the improvements in timely order to understand clearly the paradigm shift for each situation.

The case studies narrate that different countries adopt different strategies to ensure safety and security for a particular location or region. Some cases reflect how different development activities had gradually increased safety whereas other cases show the development plan that considered the safety issues into consideration. On the other hand, one case pointed out how safety can be at stake when authority cannot control the riots and violent activities.

Safety cannot be ensured through paper-based policy making, rather a real-life implementation can ensure how safe or unsafe a place can be. Besides, it must be considered from various perspectives and should be started at the foundation stage such as design and master planning. Thus, these case studies also reveal how different countries' city development plans incorporated safety concerns whereas other cities integrating it into a city improvement plan. Similarly, in this project, we are presenting some detailed area plans that can help to improve the safety of Lahti city center.

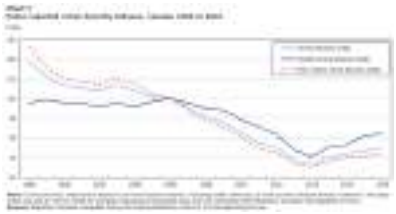
2.1. GORBALS, GLASGOW, UK

Previous Condition	*Development Stage*	*Current Situation*
		
» Inefficient town planning at different stages	» Community involvement in the development process and improved connectivity-based development"	» Safe and clean environment
» Over-crowded residential area	» Housing block with different densities and height to solve the housing crisis	**"Improved public activities increased the sense of security among the citizens"**
» Poor quality of buildings and infrastructure		» Courtyard for community space
» Lack of maintenance and monitoring, and less focus on governance		

Table 1. Development stages to ensure safety at Gorbals, Glasgow, UK. Source: Urban, n.d.; Lesley Booth, 2016. Belgum, 2020.

2.2. OTTAWA, CANADA

Previous Condition



» Crime increasing since 2014 (Statistics Canada, 2018)

» Safety concerns related to increasing violent crime and non-violent crime

Development Stage

» New measures, i.e., hotspot targeting and localizing programs

» Prevention method to reduce factors for commit crimes such as identified social needs, training opportunities

» Initiative program (CPO) addressed street violence, trauma, gender-based violence, healthy relationships, youth, graffiti program, disability, and abuse concern

Current Situation

» Safe and healthy communities

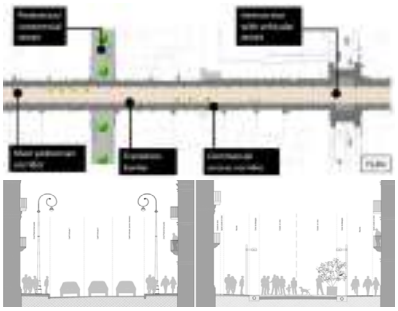
» Education and awareness concerning community safety

» Community inclusion, e.g., a neighborhood watch, crowd-sourcing, community Policing

2.3. MADERO STREET, MEXICO CITY, MEXICO

» Historical city with commercial, cultural and touristic use affected by crime, terrorism, political unrest

» Safety concerns such a car-dominated, bad reputation, inadequate sidewalks, abandoned buildings on the Madero street



» Pedestrian-friendly attributes; permanent accessibility, lighting, greeneries, street furniture, paving treatment

» Image of the city improvement and historical revalued

» Strengthen common spaces connectivity

"Considered a comfortable area by users and decreasing crime activities"

» Boosted utilization and activities like tourism, nightlife, private investment, living investment in the city

Table 2. (top) Location for case studies. Source: Noren, Anders,. 2020; Ottawa Police Service, 2020.; ottawatourism, n.d.

Table 3. (bottom) Development stages to ensure safety at Madero Street, Mexico City. Source: Abe, Enrique, 2020.; Autoridad del espacio público,n.d.; alarmi, n.d.

2.4. UTTARA MODEL TOWN, DHAKA, BANGLADESH

Previous Condition	Development Stage	Current Situation
		
» The peripheral undeveloped area including slums in Dhaka city » Low land cost » Was not focused by middle and high-class residents and Capital Development Authority (Rashid, 2002).	» Satellite Township strategies » Housing block with almost same density and height to solve housing crisis » Mixed used development to make the town autonomous » Improved connectivity-based development (Rashid, 2002)	» Improved quality of life » A new destination for resident and commercial activities besides the center of the capital » Relatively safe and clean environment (RAJUK, 2016)

2.5. POM MAHAKARN, BANGKOK, THAILAND

		
» The historical site occupied by squatters » Lack of maintenance and monitoring, and less focus on governance » safety concerns related to crime, drugs, prostitution, gangs, and mobs	» The community started the improvements with contribution from activists, media, academic, architects, and politicians » Eyes on the street and common spaces improvement » Touristic elements and traditional houses conservation	» The community has been replaced with a public park » Improvement for streetscape » Historical building maintenance

Table 4. (top) Development stages to ensure safety at UMT. Source: Rashid, 2002; (left & middle) & Google Map, 2020.

Table 5. (bottom) Development stages to ensure safety at Pom Mahakarn Community, Bangkok, Thailand. Source: Pinterest, n.d.; Soimilk, 2016; Boonsri, 2018.

2.6. BONIFACIO, MANILA, PHILIPPINES

Previous Condition

» Old military basecamp, derelict area

» Safety concerns related to illegal drugs, human trafficking, natural disasters in the country as a whole

Development Stage

» Adopted strategies pedestrian safety, parking, littering, photo-friendly, and reduce your Carbon Footprint at Bonifacio, Metro-Manila

» Special attribution like multi-purpose space, green space, rainwater harvesting, mixed-used, amenities, public arts, social gathering, and kid-friendly zone

Current Situation

» A vibrant and lively city

"Improved public activities all around the week increased the sense of security among the citizens"

2.7. SINGAPORE

» Safe and insecurities issues like urban congestion, spontaneous settlements sprawl, homeless

» City damaged by war

» Developed land use pattern and transport network

» Following long-term urban planning framework for the country as a whole

» Infrastructures improvement such as mass transit, connectivity, green infrastructure

» Eyes on the streets scheme

"Network of parks acoss the country"

» High-quality public housing

» Increasing community interaction in public spaces

Table 6. (top) Development stages to ensure safety at Bonifasio, Manila, Philippines. Source: Antonio, Zipporah,.2014; Zipporah,.2014; Paulo, Alcazaren, 2017.

Table 7. (bottom) Development stages to ensure safety at Singapore. Source: Straits Times, 2020.; Council for Estate Agencies. 2017.; Tammikuuta, 2020.

2.8. FINLAND

2.8.1. Jyväskylä

Current Callenge

» Alcohol consumption is high during any Neste Rally

» Student events such as Kauppakadun Appro where all students move from bar to bar may cause insecurity

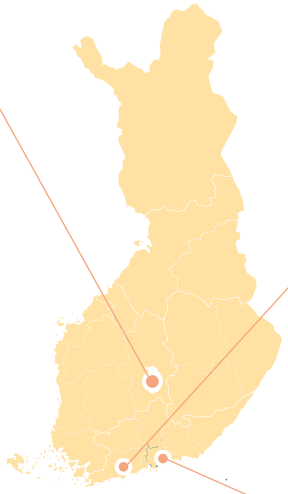
» Yläkaupungin yö, a multi-art urban festival located in Jyväskylä's streets and parks, day and night time event

Current Actions

» During the rally there are a lot more security guards and polices in the city, Jyväskylä has restricted areas where it's forbidden to drink alcohol

» Restricted festival area. More polices, only designated bars, after-party bar is pre-determined

» Family-oriented, makes parks feel safer also during nighttime



2.8.2. Porvoo

Current Condition

» There is no lights, so in the evenings park is really dark, streetcrossings more risk for walkers and cyclists.

Future Plan

» Porvoo adopted new security operational program 2019-2021.

2.8.3. Tikkurila

Current Condition

» Poor and high density of restaurants increases disorder and violent crime

Future Plan

» Reversing Tikkurila´s socio-economic downturn

» More attractive and useful

Table 8. (top to bottom) Development stages to ensure safety at Jyväskylä. Source: Kartta.vantaa.fi, 2020.; vantaa.fi, 2020.

Table 9. (top to bottom) Development stages to ensure safety at Porvoo. Source: porvoo01.oncloudos.com, 2020.

Table 10. (top to bottom) Development stages to ensure safety at Tikkurila. Source: Google map, n.d.; Vantaan energia sahkoverkot, n.d.

CHAPTER 3: BACKGROUND STUDY 2017 & 2018 SURVEYS

Figure 6. Lahti Vesijarvi Harbour. Source: marinas.com, 2020.

3.1. LAHTI RESIDENTIAL QUESTIONNAIRE 2017

Lahti residental questionnaire was organized to get background information for Lahti city center development and city planning. Objective of the questionnaire was to collect a list, that contains a hunred development acts until Finlands independent day 2017. A survey was conducted for a month using the Maptionnaire commenting tool between April 26 and May 26, 2017 to gather the views of the residents of Lahti with regard to attractiveness, street environments and traffic in the Lahti city centre. The survey attracted a total 283 respondents, corresponding to 0.24% of the 119,573 inhabitants (AdminStat Finlandia) in 2017. Majority of the repondents either lived in or visited the city centre multiple times a week. The age of the respondents ranged from below 16 years to 75 years. Highest number of respondents by age group were between the ages of 26 and 35 years and working people represented the highest number of reponsdents by occupation. Majority of the respondents represented people living 1-3 Km away from the city centre followed by people living in the city centre. The survey indicated that most common mode of transport used by people visiting the city centre were private cars, walking and bicycle.

Overall, 60 % (1092) of the places were marked as being cozy while 40% (741) were marked as being unpleasant. The most comfortable places were Satama and Pikku-Vesijärvi area, Tori market square on Aleksanterinkatu street, the surroundings of the statue of Hakkapeliitta and Mariankatu, Railway street between Hämeenkatu and Vuorikatu, City Hall Park and Church Park. The unpleasant places consisted of Lahti Market Square, S-Market Mascot corner and Vapaudenkatu between Vesijärvenkatu and Saimaankatu.

Figure 7. Picture from questionare report 2017. Source: City of Lahti,2017

3.2. FINDINGS OF 2017 SURVEY

3.2.1. Alatori

There was mixed opinion of the area. The place has been identified as being cozy, comfortable and beautiful, others considered it as being unpleasant. Vapaudenkatu and Aleksanterinkatu streets along the alatori area was identified as difficult places for bicyclists and car drivers. However only a few reported the same area as difficult places for public transport. In general, it has been identified as a place in need of benches, public art, plantations, bicycle racks, trash bins and clean up.

Figure 8. Altori area. Source: Saloma, 2020.

3.2.2. Rautatienkatu

The pedestrian street between Vapaudenkatu and Aleksanterinkatu has been marked as being cozy and comfortable, few also identified it as an unpleasant area. The pedestrian street has been marked as a place in need of plantations, public art and benches. Overall, the street is considered as clean and comfortable with access to public transport and bicycle racks.

Figure 10. Rautatienkatu Pedestian section. Source: Begum, 2020

3.2.3. Hansa Square

The area received minimal markings during the survey. A few respondents identified it as being unpleasant while no one marked it as being cozy, comfortable and beautiful. There are few markings for need of public art, plantation and clean up.

3.2.4. Vapaudenkatu

A small stretch between Mariankatu and Rautatienkatu has been marked as comfortable and the stretch between Vesijärvenkatu and Saimaankatu has been marked as being unpleasant. Several respondents identified the stretch between Rauhankatu and Vesijarvenkatu as being difficult places for cyclists as well as car drivers and a few identified it as difficult for pedestrians. The stretch between Vesijarvenkatu and Saimaankatu has been marked as needing clean up by many. There were very few markings regarding need for plantation, public art, cycle racks etc.

Figure 9. Hansa Square. Source: Valdez, 2020.

3.2.5. Railway station

The area received no markings as being unpleasant and a few markings for being comfortable, cozy and beautiful. The maximum marking was for the need to clean up and few for need to have trash bins, plantation and being difficult for cyclists and pedestrians.

Figure 11. Travel Centre near Train Station, Source: Saloma, 2020.

3.2.6. Main Church

A portion of the area has been marked by several respondents as most comfortable and beautiful while a very few have also marked as being unpleasant. While there were not many markings for need to install amenities, a few places have been marked as in need of benches, public art, bicycle racks and cleaning.

3.3. MY EVERYDAY PLACES AND TRAVEL EXPERIENCES IN LAHTI - 2018

The survey titled "My Everyday Places and Travel Experience in Lahti" was conducted between March 16 and April 25, 2018 by a team consisting of planners from the city of Lahti and researchers from University of Helsinki and Aalto University. Purpose of the survey was collect experimental information from residentals to support Lahden suunta- cityplanning work and as a background information for futher cityplanning projects. Purpose of the survey was to collect experimental information from residentals to support Lahden suunta- cityplanning work and as a background information for futher cityplanning projects. Data from the Every day places and Travel- involment project is turned to a Gis-information, that is easily available for more detailed cityplanning (Duman, 2018).

Data for the survey was collected using the Maptionnaire commenting tool. There were 550 respondents, 71% of them were female and 33.14% of the respondents lived in the city centre. The respondents marked on maps their important everyday places and routes taken to travel to home and for leisure activity. Positive and negative experience points and places in need of improvements were also marked along the routes. The places and routes were also assessed based on transport mode. Nearly half of the total 6500 geocoded responses/fixes were marked within the city centre area (Duman, 2018).

3.4. FINDINGS OF 2018 SURVEY:

Most of the travel routes by walking and cycling were within the city centre while travel routes using cars were spread across the whole city. Routes along the Vesijärvi and Uudenmaankatu were rated low (maximum 20 over 100) in terms of travel experience and routes with high travel experience ratings (minimum 80 over 100) were spread across the city. Approximately 67% of the positive and negative experience points stretched from from Vesijärvenkatu to Joutijärvi in the city centre.

The Market Square received equal number of positive and negative experience points and Vesijärvenkatu consistently received negative experience points. Within the city centre, travel routes made by walking received most of the positive experience points whereas negative experience points were for rest of the modes of transport including walking. The places and routes that needs to be improved were spread across the city (Duman, 2018).

The highest ratings for travel experiences were in areas with access to public transport and possibility of walking while the lowest ratings were areas dominated by private cars.

3.5. SUMMARY OF THE 2017 & 2018 SURVEY FINDINGS

In general, with 1092 positions marked for cozy places and 522 locations as being cozy and especially beautiful compared to 741 positions for unplesant places, the 2017 survey indicate Lahti city to be comfortable and cozy. However, the city centre received mixed reactions with regard to travel experience in the 2018 survey.

Altogether, the 2017 survey identified 1338 points/places that needed art, cleaning, benches, greenery, trash bins, bus stops, places that were difficult for pedestrians, cyclists and car drivers and need for regional distribution of improvements. The 2018 survey also identified places and routes across the city with need for improvement. Therefore, the findings indicate that there is lots of rooms for improvement to make the city more attractive and friendly for the residents and visitors. With majority of respondents in 2017 survey using private cars and walking and with 2018 survey indicating walking as a preferred mode of transport and private cars as unpleasant, city could consider pedestrianization of more streets in the city.

Since both the surveys received response from a very small fraction of the total inhabitants, future studies or surveys need to ensure increased number of respondents to get better understanding of living and/or visiting experience in the city.

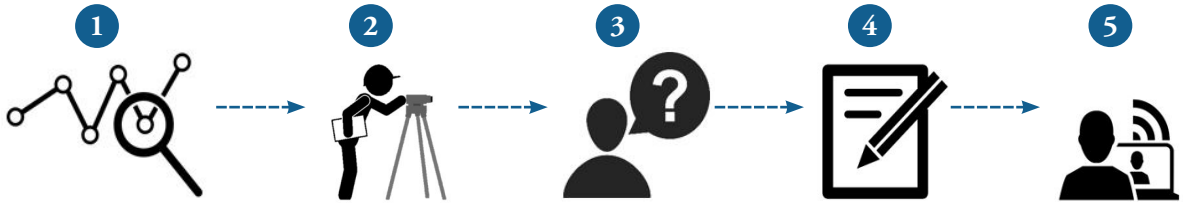
CHAPTER 4: ONLINE SURVEY

Figure 12. Aerial view of Lahti Urban Area. Source: City of Lahti, n.d.

4.1. MAPTIONNAIRE BASED QUESTIONNAIRE

To engage the citizens of Lahti in the safety situation improvement process, online questionnaire was designed using Maptionnaire which helped to have a better understanding of the context and how the people would like the possible changes in Lahti City Center. The whole process can be divided in four stages as shown in following Figure.

STAGE 01



1 Existing data analysis

Available data provided by the City council and online resources were analysed.

2 Field Survey

Upon selection of sites the respective sites were visited, and the data derived from field survey were compared with the previous data analysis.

3 Analysing possible topics for Questionnaire

In this section, possible topics for the questionnaire were shortlisted, similar topics were grouped and sequentially organized.

4 Online consultation with professor

Based on the class evaluation, questions were reorganized to make it more relevant and understandable.

5 Draft of the Maptionnaire

Based on the derived format consisting the question sets, the draft copy of the Maptionnaire based questionnaire was created.

STAGE 02

6 Draft Questionnaire using Maptionnaire

The draft Maptionnaire was created online to test possible features.

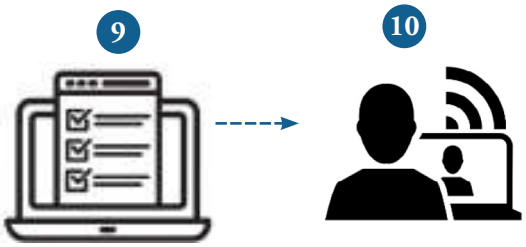
7 Feedback from the Lahti City Planning and Professor

The draft Maptionnaire was presented before the City Planning and they evaluated the questionnaire.

8 Revising questionnaire format feedback

The draft Maptionnaire was updated before starting the pilot test.

STAGE 03



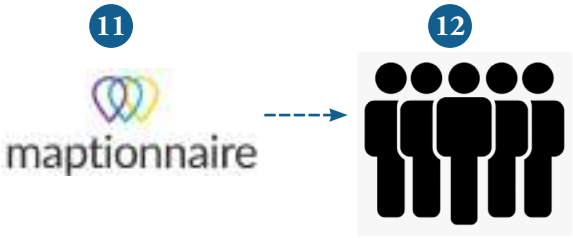
9 Online test amongst students to check feasibility and formatting again

The draft Maptionnaire was tested amongst the students to check estimated time and feasibility.

10 Online consultation with professor

The updates of the pilot test were shared with professor and necessary changes were made in the questionnaire steps.

STAGE 04



11 Final version for run

The final version of Maptionnaire was shared with citizens of Lahti.

12 Spreading the questionnaire amongst different groups

The Maptionnaire link was sent to different social media pages to reach different groups of people in Lahti.

Figure 13. Development stages of the Maptionnaire based questionnaire. Source: Keya, 2020.

Link to enter the website:

https://app.maptionnaire.com/en/8405/

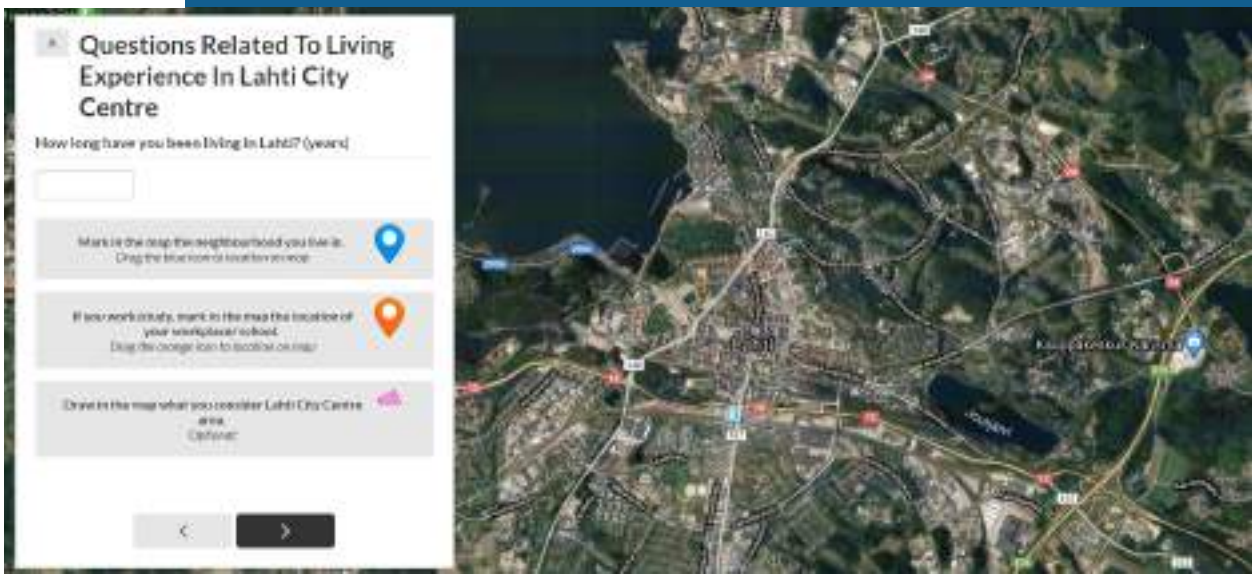


Figure 14. Safety and Security Experience in Lahti City Centre. Cartographic Source: Popal, 2020. Format: Keya, 2020. Online application: Maptionnaire.

4.2. OVERVIEW

The data obtained from the Maptionnaire survey is spatially represented below to visualyze the frequencies of different factor occurrences around Lahti.

Lahti city center boundary, the red outline shows the boundary drawn by majority

Figure 15. City Center Boundary. Source: Popal, 2020. Online application: Maptionnaire

Residence of the respondents shows the majority in the City Center and 2nd largest number is in Mukkula

Figure 17. Residence of Respondents, Source: Popal, 2020. Online application: Maptionnaire

Majority of the unsafe spots were marked in the Alatori area, Rautatienkatu and Trio

Figure 19. Unsafe Hotspots, Source: Popal, 2020. Online application: Maptionnaire.

Workplace of the respondents shows the majority in the City Center and 2nd largest number is in Mukkula

Figure 16. Workplace of Respondents, Source: Popal, 2020. Online application: Maptionnaire

Safe spots was mainly marked in the market square area and the area infront of Trio.

Figure 18. Safe Hotspots, Source: Popal, 2020. Online application: Maptionnaire

Places that require more lighting were mainly marked in the Trio, Mariankatu and Museum

Figure 20. More Lighting Areas, Source: Popal, 2020. Online application: Maptionnaire.

Majority of the respondents preferred more police presence in Alatori area, Rautatienkatu and Trio.

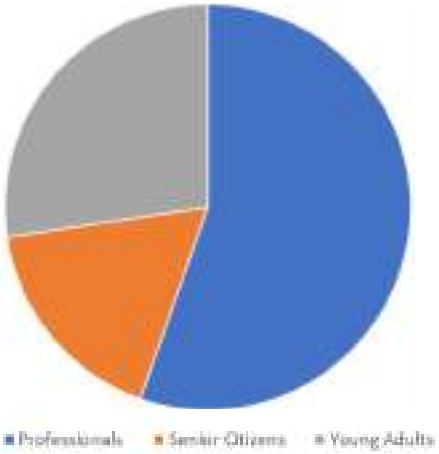
Figure 21. More police presence, Source: Popal, 2020. Online application: Maptionnaire

Streets surrounding the market square and the streets extending to train station were marked pedestrian.

Figure 22. Pedestrian routes, Source: Popal, 2020. Online application: Maptionnaire

4.2.1. General Information of the Respondents

Majority of the respondents were professionals. The respondents attending can be divided in three groups:

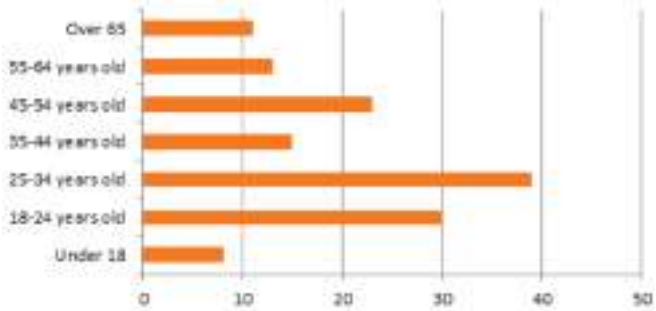


Graph 1. Age Group Percentage, Cartographic Source: Popal, 2020. Format: Keya, 2020.

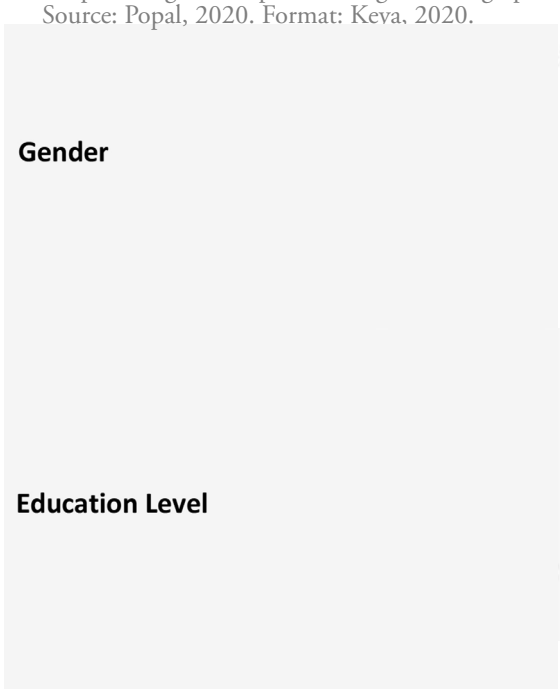
Professionals - 77

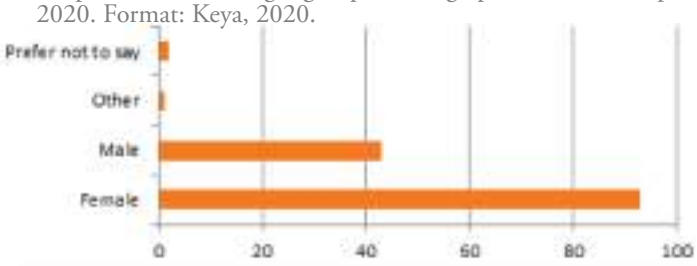
Senior Citizens - 24

Young Adults - 38

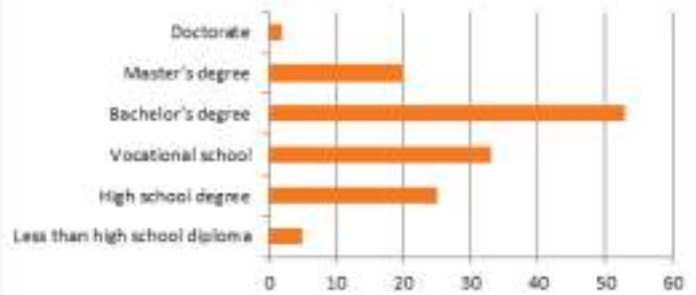


Graph 2. Different age group. Cartographic Source: Popal, 2020. Format: Keya, 2020.



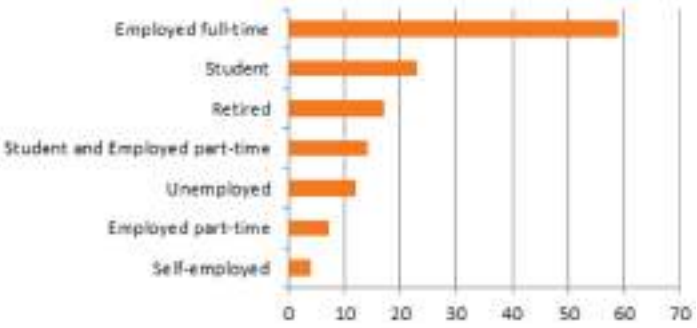


Graph 3. Different gender group. Cartographic Source: Popal, 2020. Format: Keya, 2020.



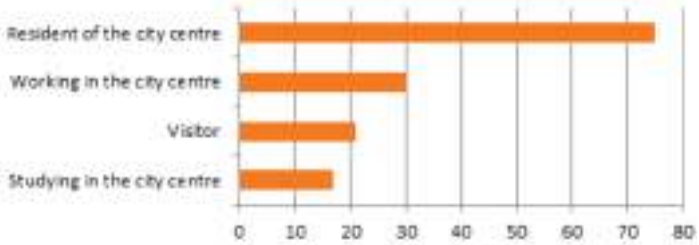
Graph 4. Different Educational Level. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Occupation



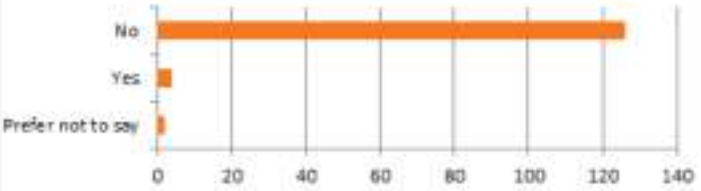
Graph 5. Different occupation. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Respondent category



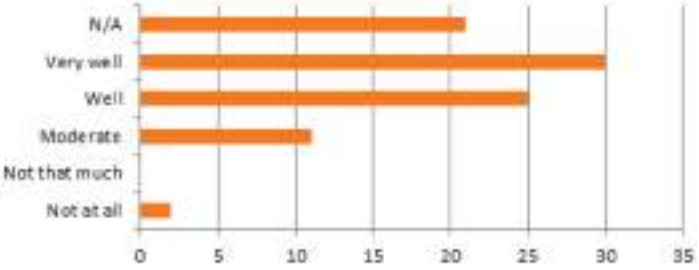
Graph 6. Respondant category. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Respondents with special requirements



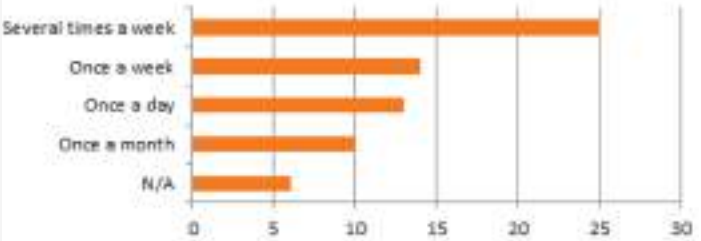
Graph 7. Respondents with special requirements. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Familiarity with the neighborhood



Graph 8. Familliarity with neighborhood. Cartographic Source: Popal, 2020. Format: Keya, 2020.

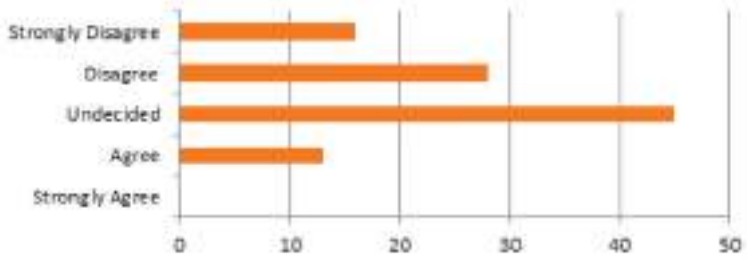
Frequency of visit to city center



Graph 9. Frequency of visit to City Center. Cartographic Source: Popal, 2020. Format: Keya, 2020.

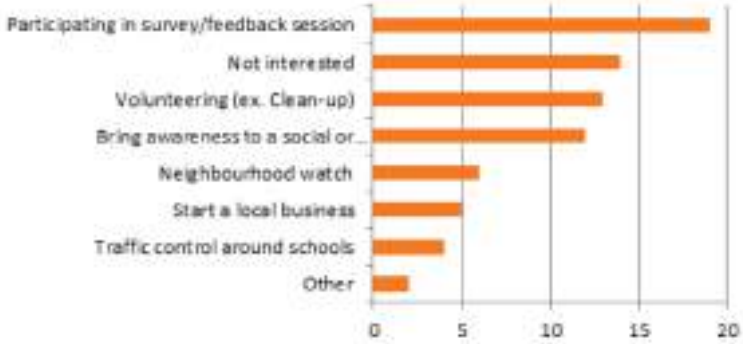
4.2.2. Safety Situation in Lahti According to Respondents:

Opinion towards safety situation in City center improving in recent years



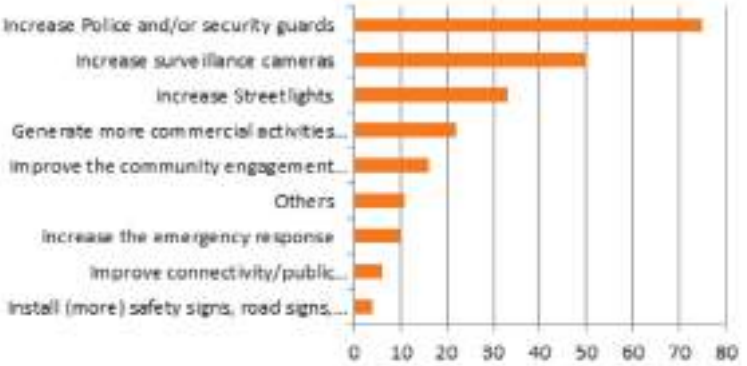
Graph 10. Opinion towards improvement of City Center. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Opinion towards involvement in developing city center in future



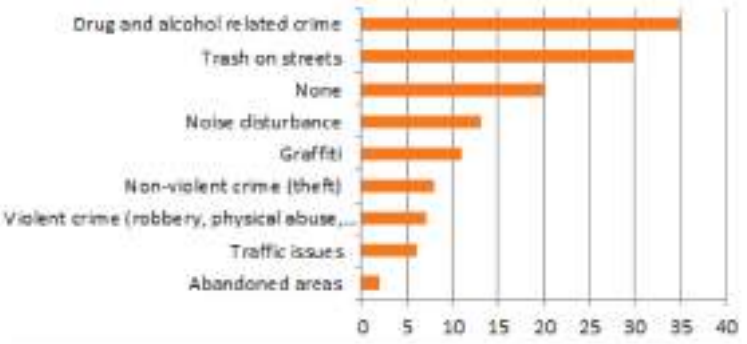
Graph 11. Opinion towards involvement in development. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Suggestions for improving the insecurity in Lahti City Center



Graph 12. Suggestions for improvement. Cartographic Source: Popal, 2020. Format: Keya, 2020.

Problems still existing in the selected safe spots



Graph 13. Still existant problems in selected safe spots. Cartographic Source: Popal, 2020. Format: Keya, 2020.

4.3. PROCESSING THE DATA:

Overall, 139 respondents attempted to take the Maptionnaire survey. Of the 139 respondents, only 55 comprehensively completed the survey. Examining the data even further indicated that only 72 unique respondents drew a safe point totaling 144 points around Lahti. On the other hand, 50 unique respondents marked unsafe points totaling 121.

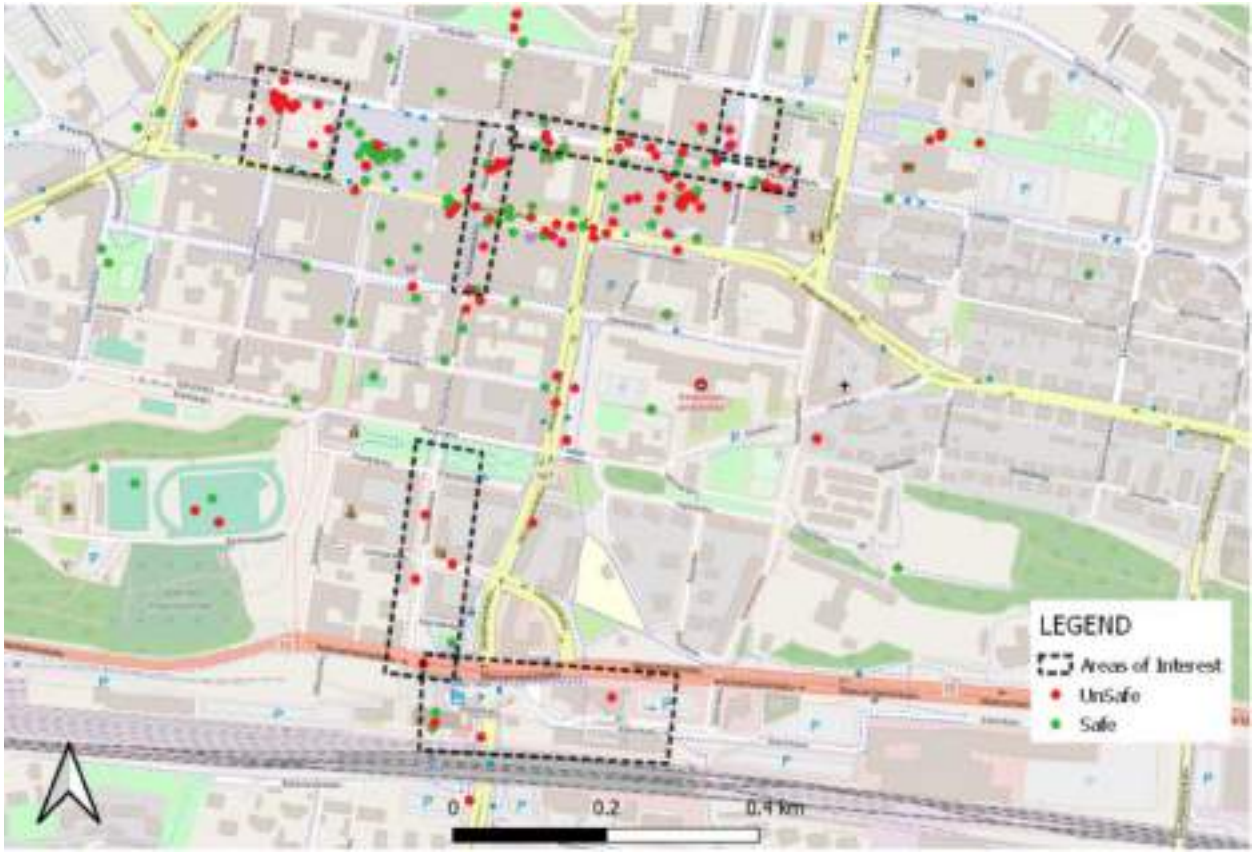


Figure 23. Six selected sites within Lahti City. Cartographic Source: Popal, 2020. Format: Keya, 2020.

There were only 37 more respondents that drew both safe and unsafe points. Amongst a total of 144 safety points, only 85 points contained data. 59 points were empty compared to 121 unsafety points of which only 91 points contained data and 30 points were empty. Due to many different contradicting indicators on filtering the data, a multi-criteria method was used. Firstly, all records that took less than 2 minutes to complete were disregarded from the analysis totaling 48 records. The survey on average takes 10 – 12 minutes, so many of the records that took under 2 minutes were incomplete and lacking any spatial information. Another 14 records were deleted for having no drawing of safety/unsafety points. From 139 records, only 77 was finally used for in-depth zonal analysis.

Six sites within the Lahti City area was selected to analyze their safety conditions according to the citizens and how would they want to develop them. The data from the Maptionnaire based questionnaire were extracted in order to locate required hotspots in those sites. The data derived from the online questionnaire helped to have a insight of these areas from the citizen's point of view. The next section shows the different sites along with the data collected for them respectively.

4.4. ALATORIN TOIMINTAPUISTO & MASCOTTI CORNER

The Alatorin Toimintapuisto & Mascotti corner site was selected by 18 respondents amongst 139 respondents in total. The derived charts show that the factors that were marked high by the respondents in sense of unsafe were: uncleanliness, drug, and alcohol, non-violent act, night-time, violent act, presence of other people. The next factors that affected moderately were: abandoned areas and unfamiliarity of the place.

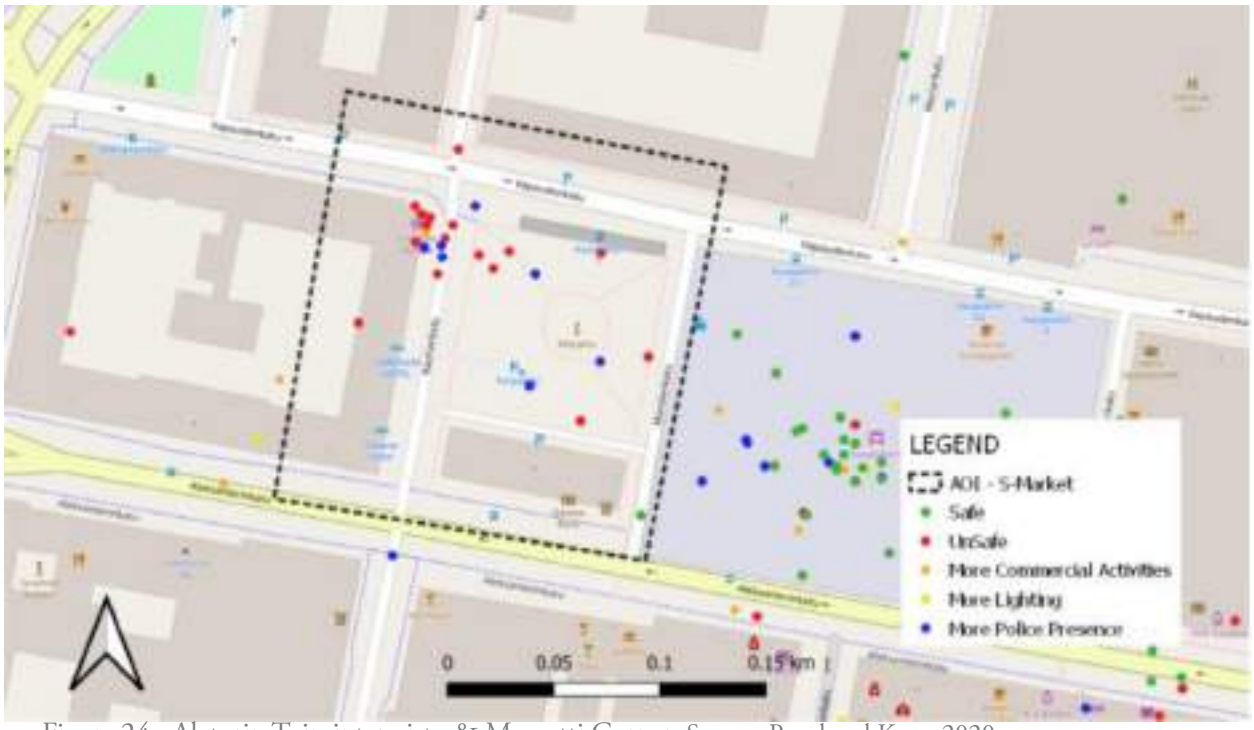


Figure 24. Alatorin Toimintapuisto & Mascotti Corner. Source: Popal and Keya, 2020

ANALYSIS OF DATA DERIVED FROM QUESTIONNAIRE

OVERALL UNSAFETY SCORE: 1 **3.3** 5

Low High

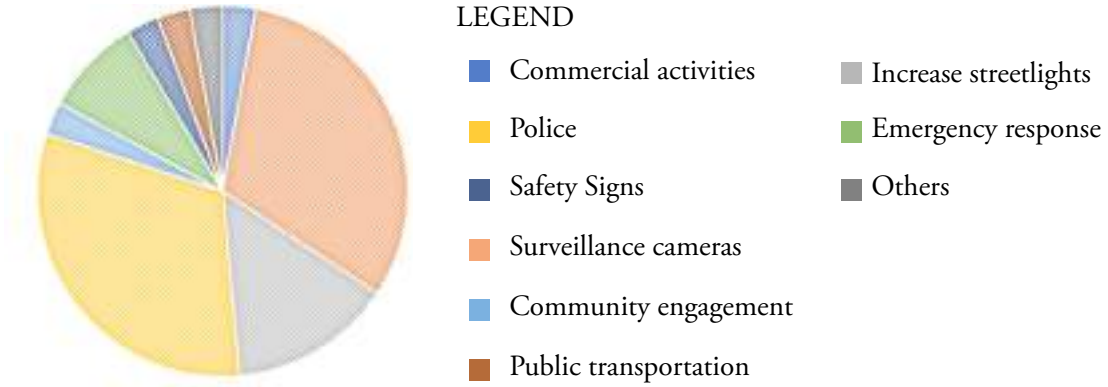


Figure 25. Less present factors in Alatorin Toimintapuisto & Mascotti corner. Source: Popal and Keya, 2020.

The analysis shows that in the Alatori Area absence of police presence, surveillance camera, and streetlights add to the sense of insecurity in this place.

4.4.1. Factors contribution to sense of insecurity in this place:

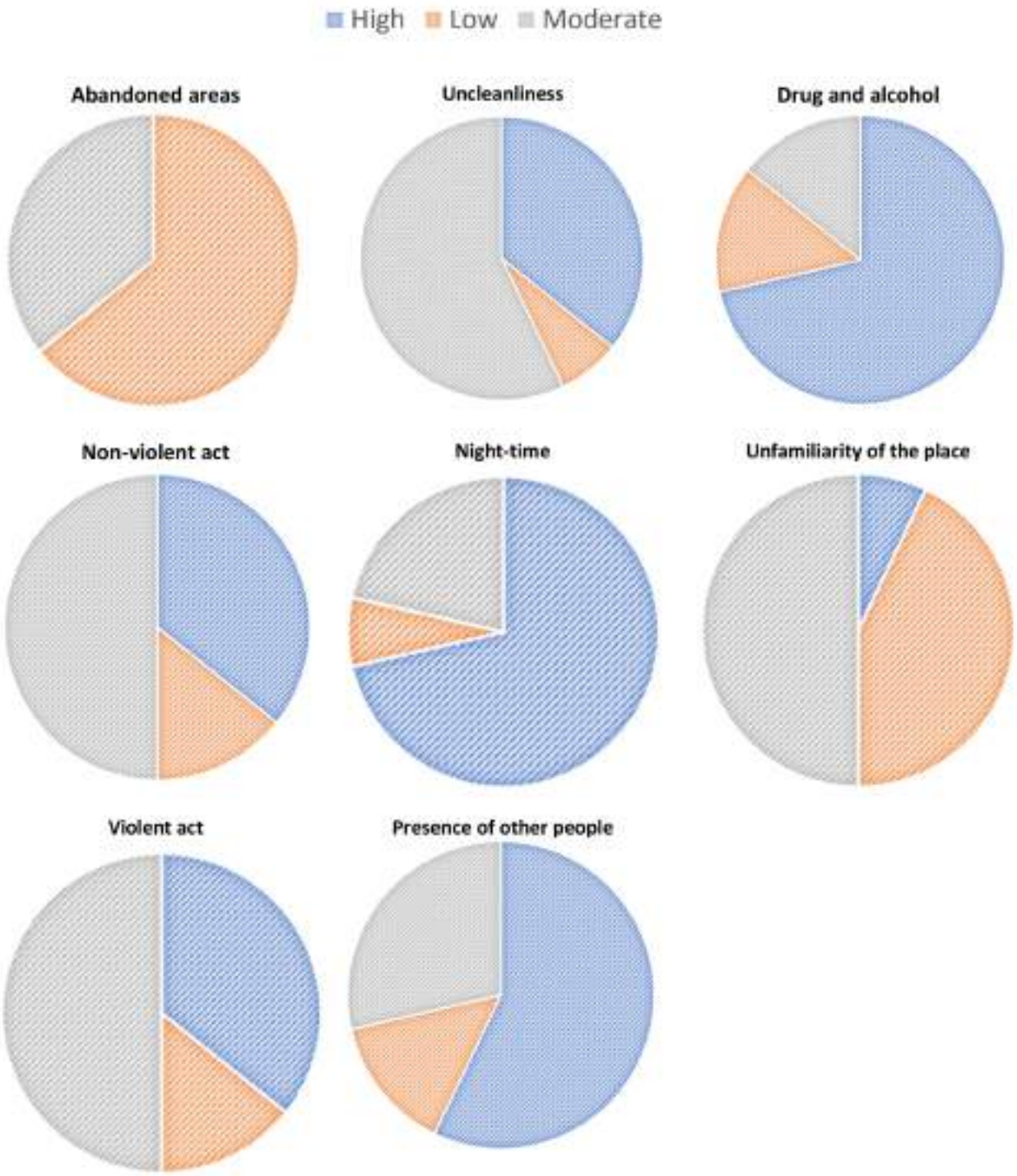


Table 11. Factors that increase the sense of insecurity in Alatorin Toimintapuisto & Mascotti corner. Source: Popal and Keya, 2020.

4.5. RAIL STATION AND SURROUNDINGS

The Rail Station and surroundings site were selected by 5 respondents amongst 139 respondents in total. The derived charts show that the factors that were marked high by the respondents in sense of unsafe were: uncleanliness, drug, and alcohol, non-violent act, night-time, violent act, presence of other people. The next factors that affected moderately were: uncleanliness, violent act, and unfamiliarity of the place.

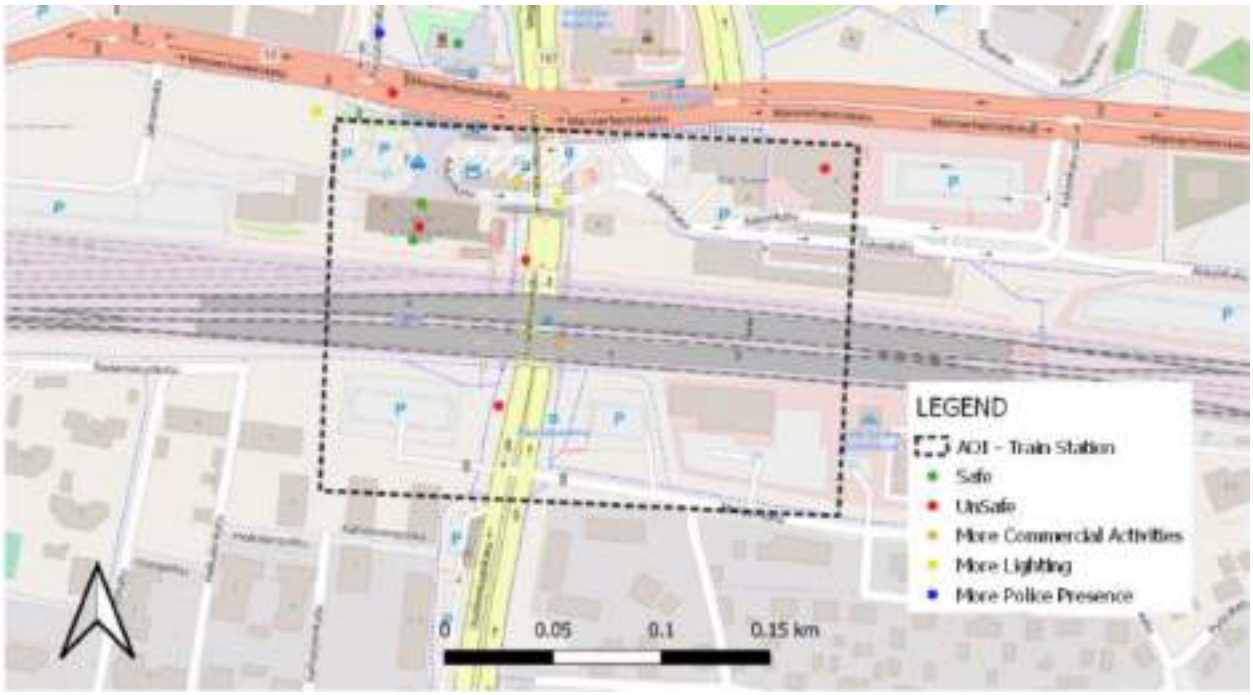


Figure 26. Rail Station and Surroundings Map. Source: Popal and Keya, 2020.

ANALYSIS OF DATA DERIVED FROM QUESTIONNAIRE

OVERALL UNSAFETY SCORE: 1 **2.8** 5

Low High

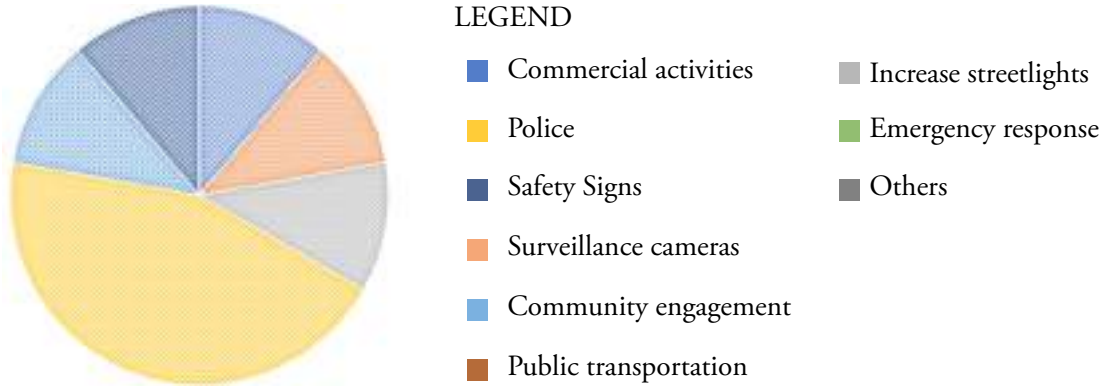


Figure 27. Factors that affect sense of security in Rail Station and Surroundings. Source: Popal and Keya, 2020.

The analysis shows that in Rail Station and Surroundings, the respondents marked the absence of police presence as a major factor for feeling unsafe.

4.5.1. Factors contribution to sense of insecurity in this place:

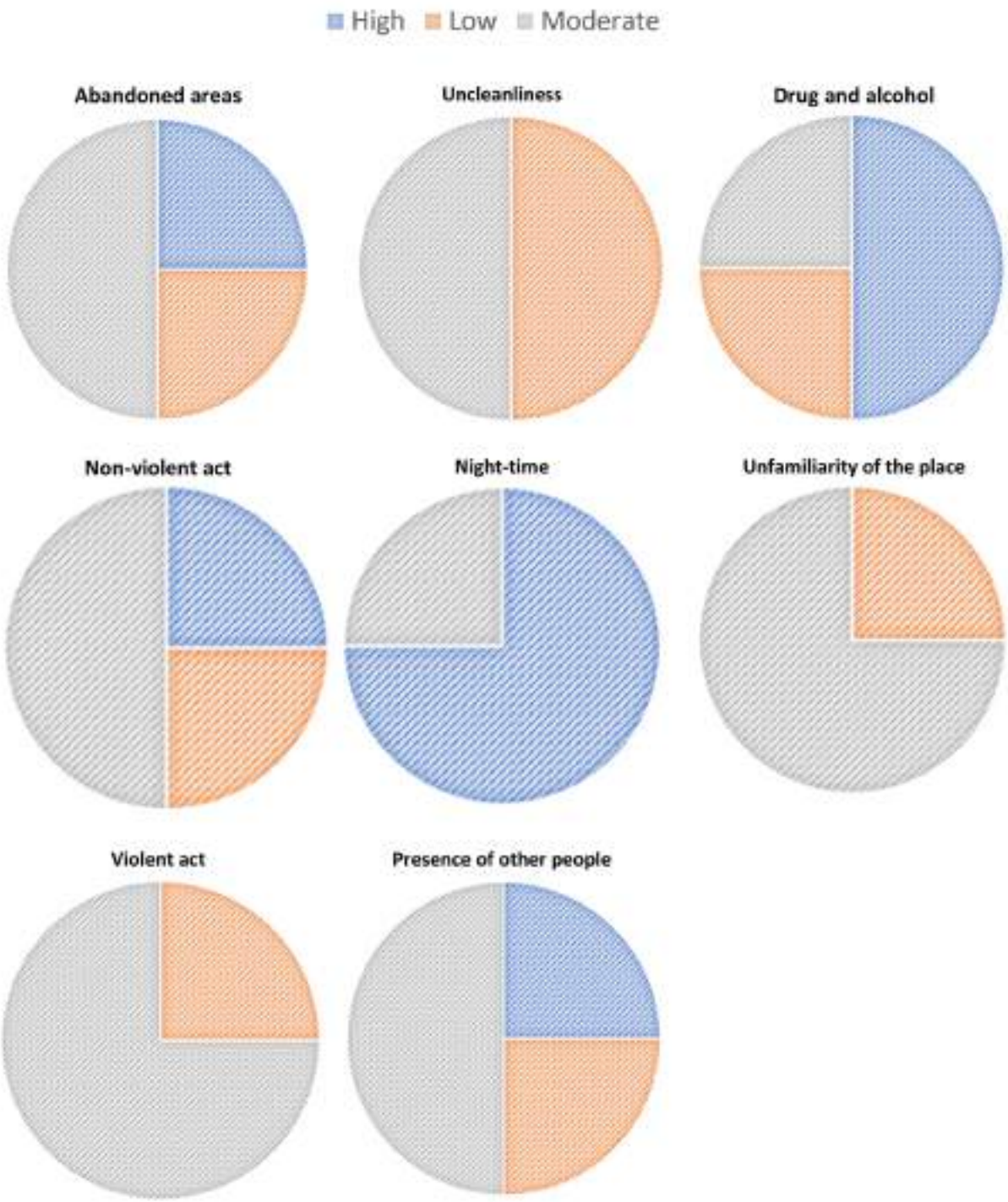


Table 12. Factors that increase the sense of insecurity in Rail Station and Surroundings. Source: Popal and Keya, 2020.

4.6. CITY HALL AREA

The City Hall area was selected by 4 respondents amongst 139 respondents in total. The derived charts show that the major factor that affects the sense of insecurity in this place is night-time and drug-alcohol. The factors that affect the sense of security to moderate level are the presence of other people, uncleanliness, non-violent act, violent act, and abandoned areas.

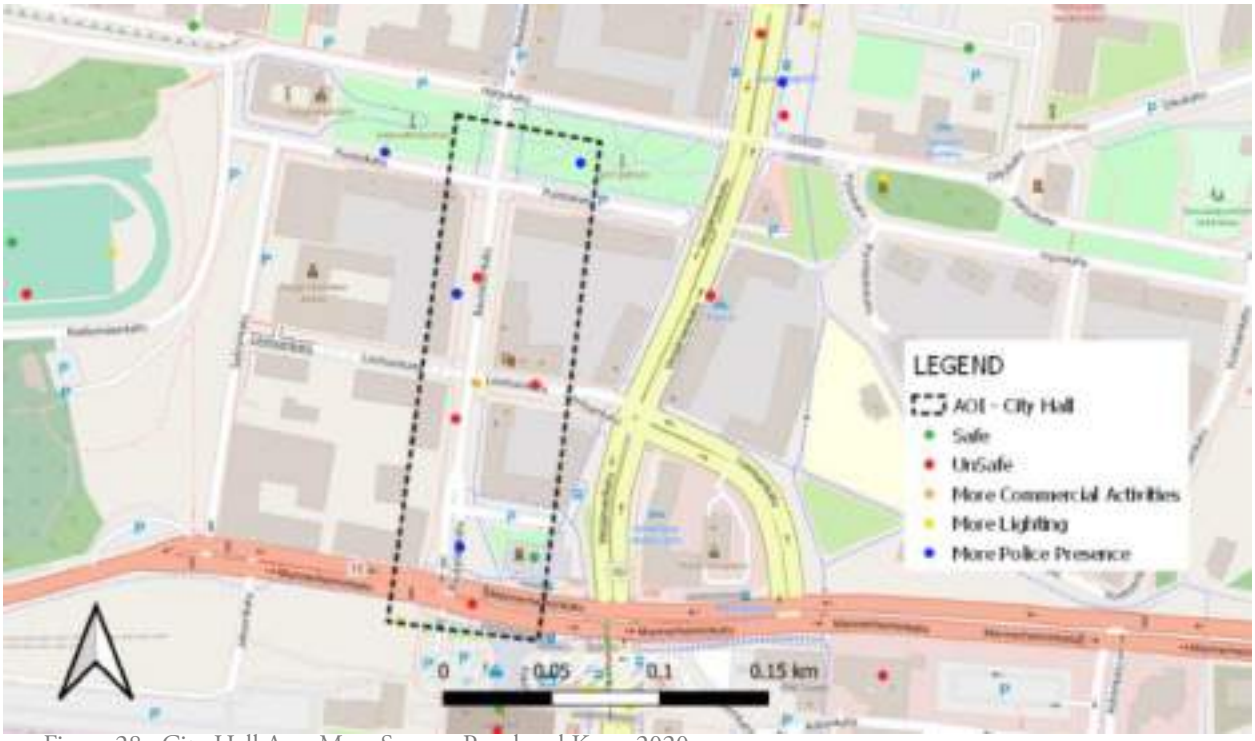


Figure 28. City Hall Area Map. Source: Popal and Keya, 2020.

ANALYSIS OF DATA DERIVED FROM QUESTIONNAIRE

OVERALL UNSAFETY SCORE: 1 **3.5** 5

Low High

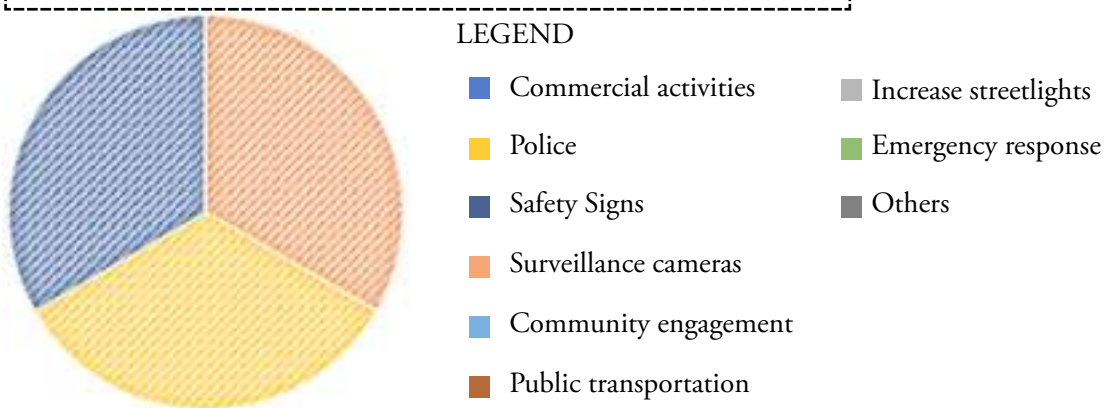


Figure 29. Less present factors in City Hall Area. Source: Popal and Keya, 2020.

The analysis shows that in City Hall Area, the respondents marked the absence of commercial activities, police presence, and safety signs as major factors for feeling unsafe.

4.6.1. Factors contribution to sense of insecurity in this place:

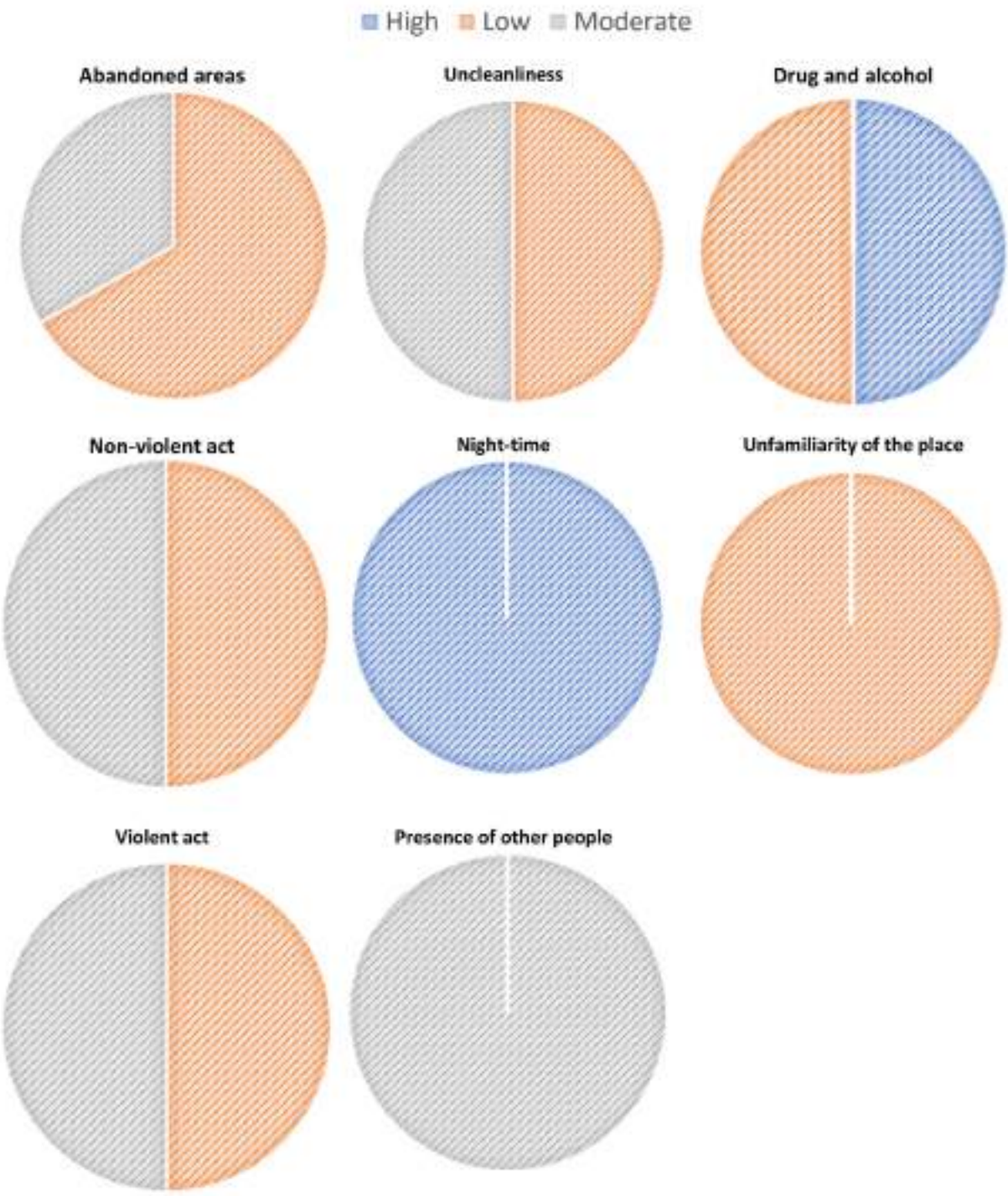


Table 13. Factors that increase the sense of insecurity in City Hall area. Source: Popal and Keya, 2020.

4.7. RAUTATIENKATU AREA

The Rautatienkatu area was selected by 9 respondents amongst 139 respondents in total. The derived charts show that the major factor that affects the sense of insecurity in this place is night-time, non-violent act, violent act, uncleanliness, and drug-alcohol. The factors that affect the sense of security to moderate level are the presence of other people, uncleanliness, non-violent act, violent acts, the unfamiliarity of the place, and abandoned areas.

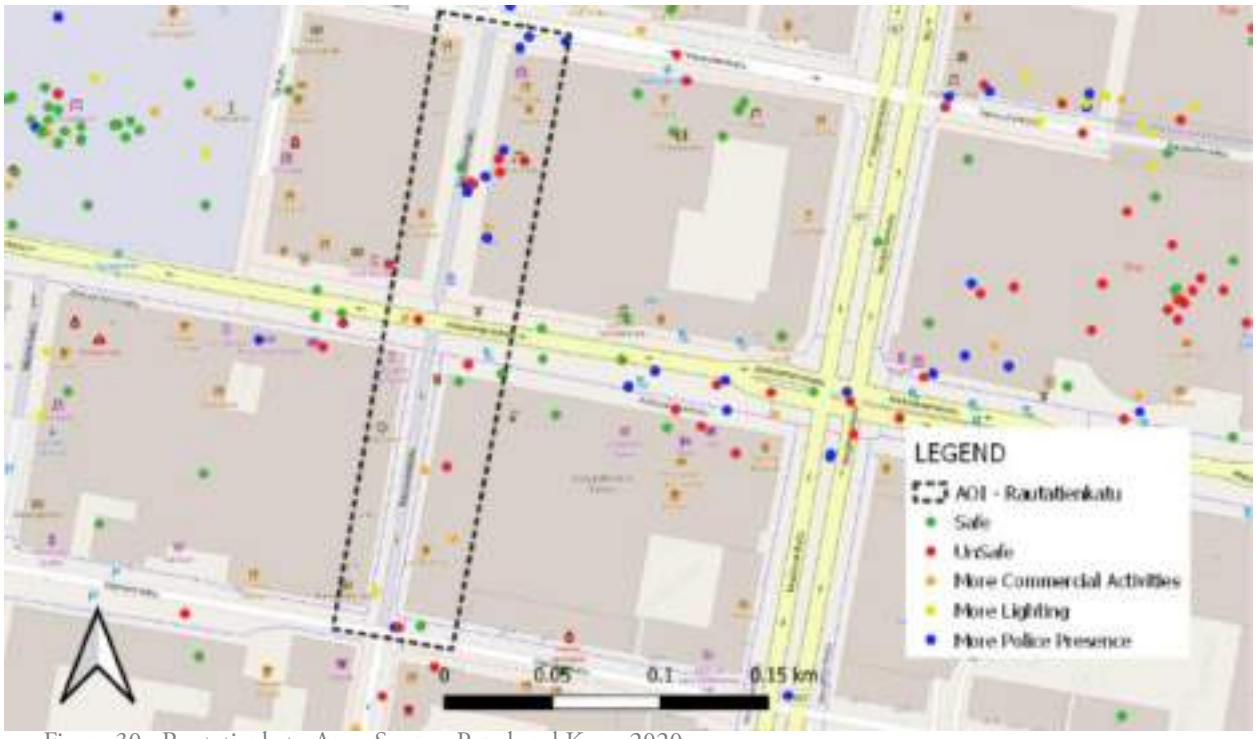


Figure 30. Rautatienkatu Area. Source: Popal and Keya, 2020.

ANALYSIS OF DATA DERIVED FROM QUESTIONNAIRE

OVERALL UNSAFETY SCORE: 1 — **3.2** — 5

Low — High

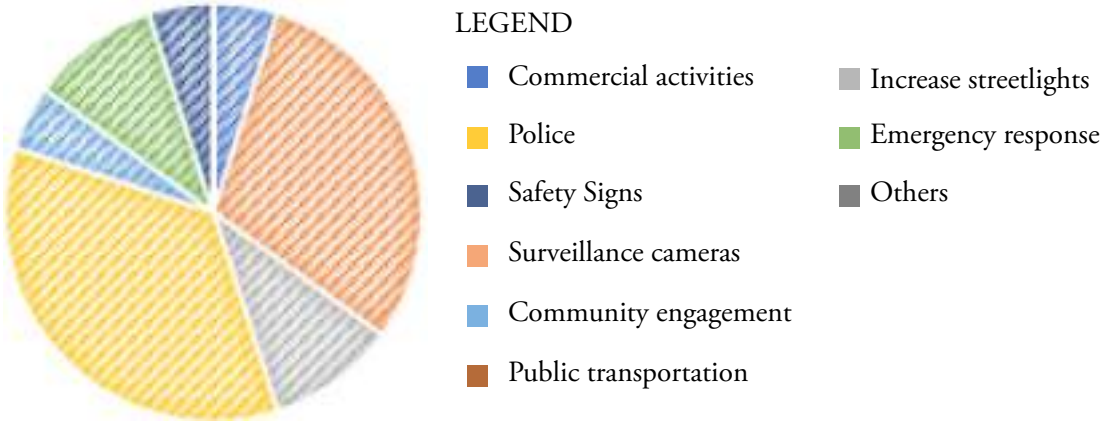


Figure 31. Less present factors in Rautatienkatu Area. Source: Popal and Keya, 2020.

The analysis shows that in Rautatienkatu Area the respondents marked the absence of surveillance cameras, police presence, and streetlights as major factors for feeling unsafe.

4.7.1. Factors contribution to sense of insecurity in this place:

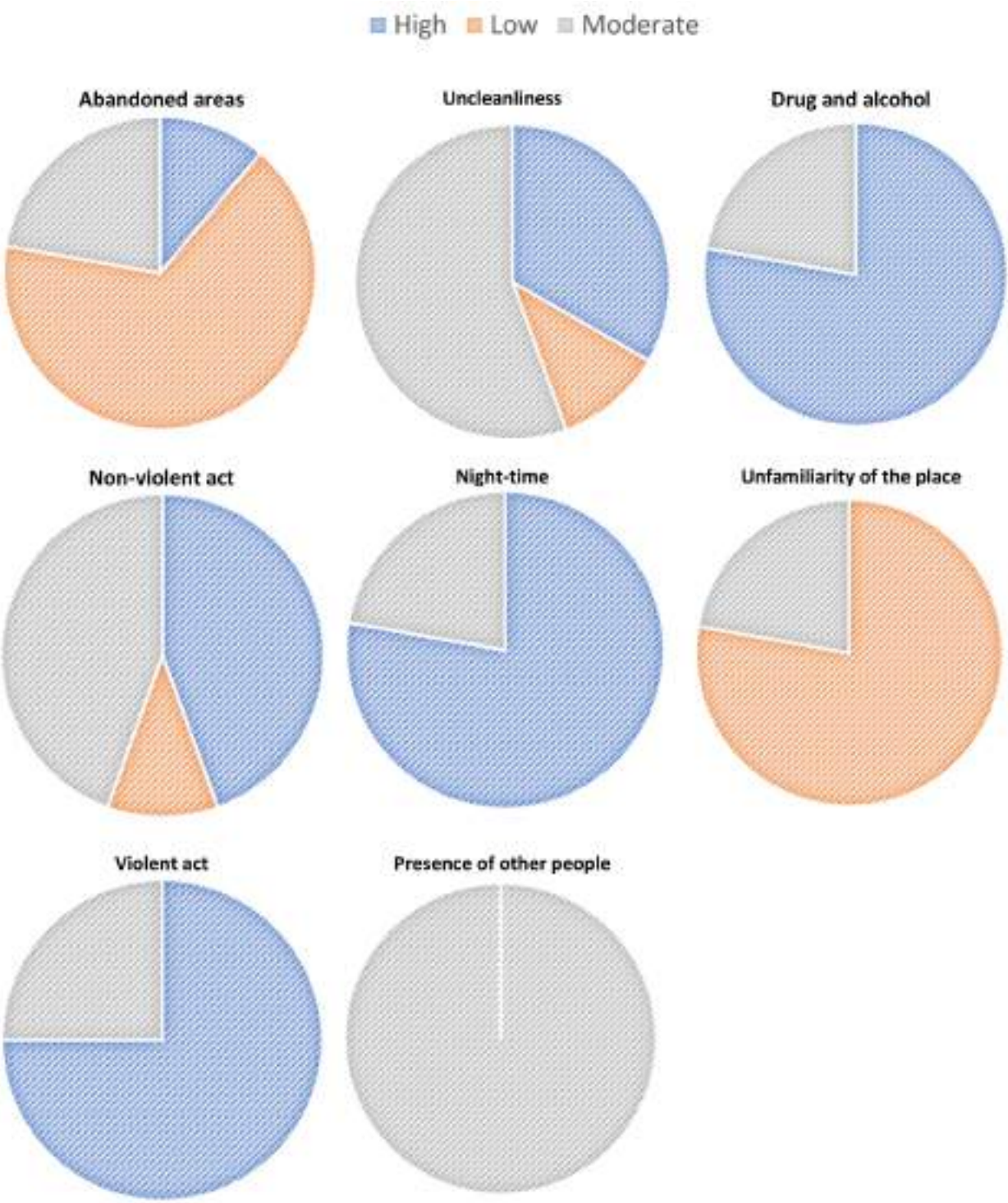


Table 14. Factors that increase the sense of insecurity in Rautatienkatu Area. Source: Popal and Keya, 2020.

4.8. VAPAUDENKATU AREA

The Vapaudenkatu area was selected by 14 respondents amongst 139 respondents in total. The derived charts show that the major factor that affects the sense of insecurity in this place is drug-alcohol, night-time, non-violent act, violent act, uncleanliness, and unfamiliarity of the place. The factors that affect the sense of security to moderate level are the presence of other people, uncleanliness, non-violent act, violent acts, the unfamiliarity of the place, and abandoned areas.

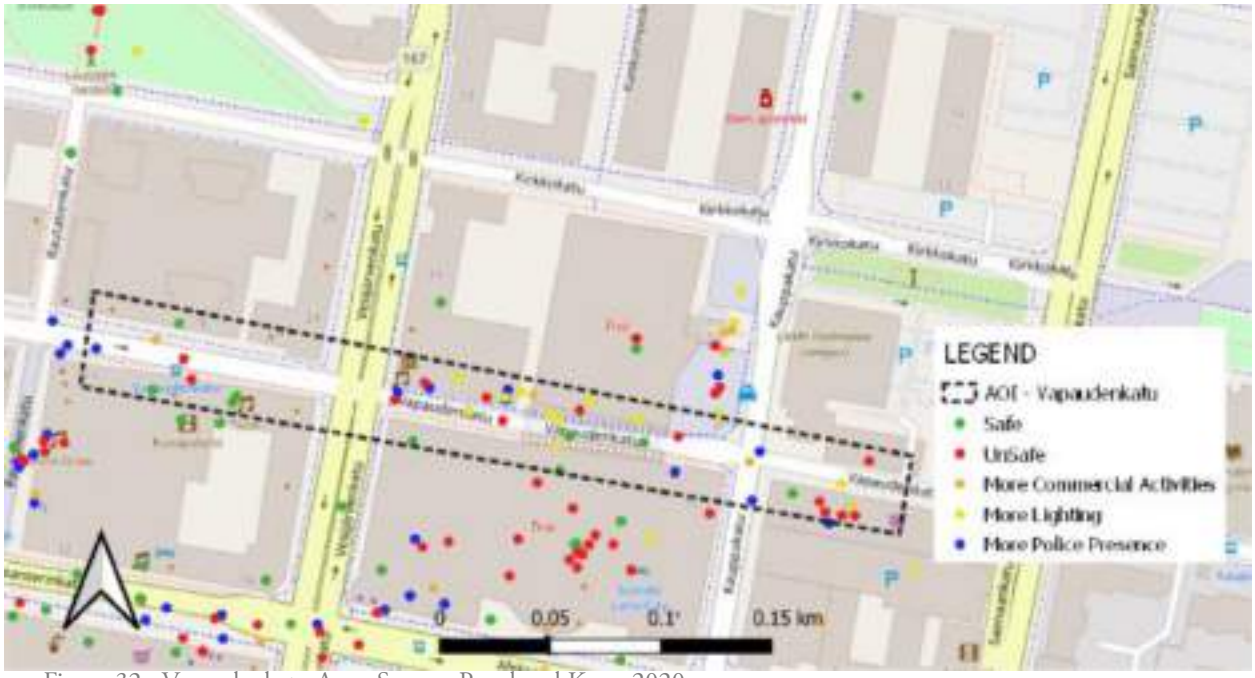


Figure 32. Vapaudenkatu Area. Source: Popal and Keya, 2020.

ANALYSIS OF DATA DERIVED FROM QUESTIONNAIRE

OVERALL UNSAFETY SCORE: 1 — **3.6** — 5

Low — High

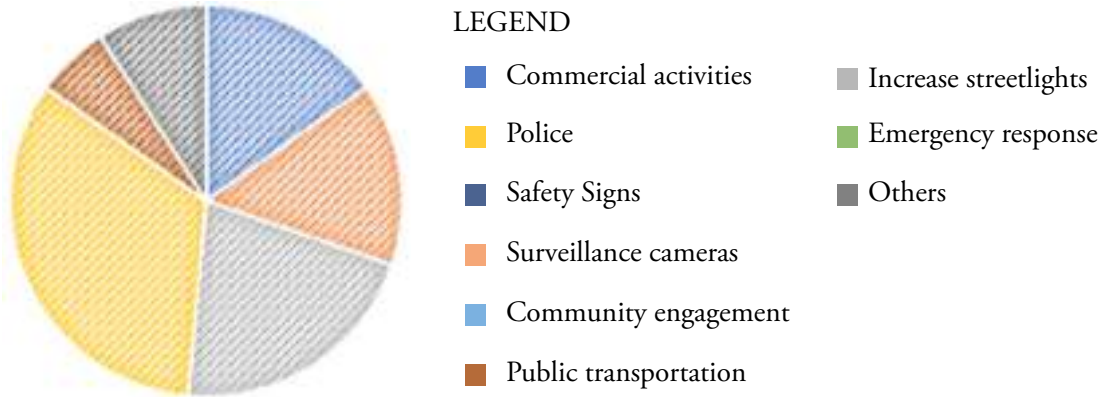


Figure 33. Less present factors in Vapaudenkatu Area. Source: Popal and Keya, 2020.

The analysis shows that in Vapaudenkatu Area, the respondents marked the absence of surveillance cameras, police presence, commercial activities, safety signs as major factors for feeling unsafe.

4.8.1. Factors contribution to sense of insecurity in this place:

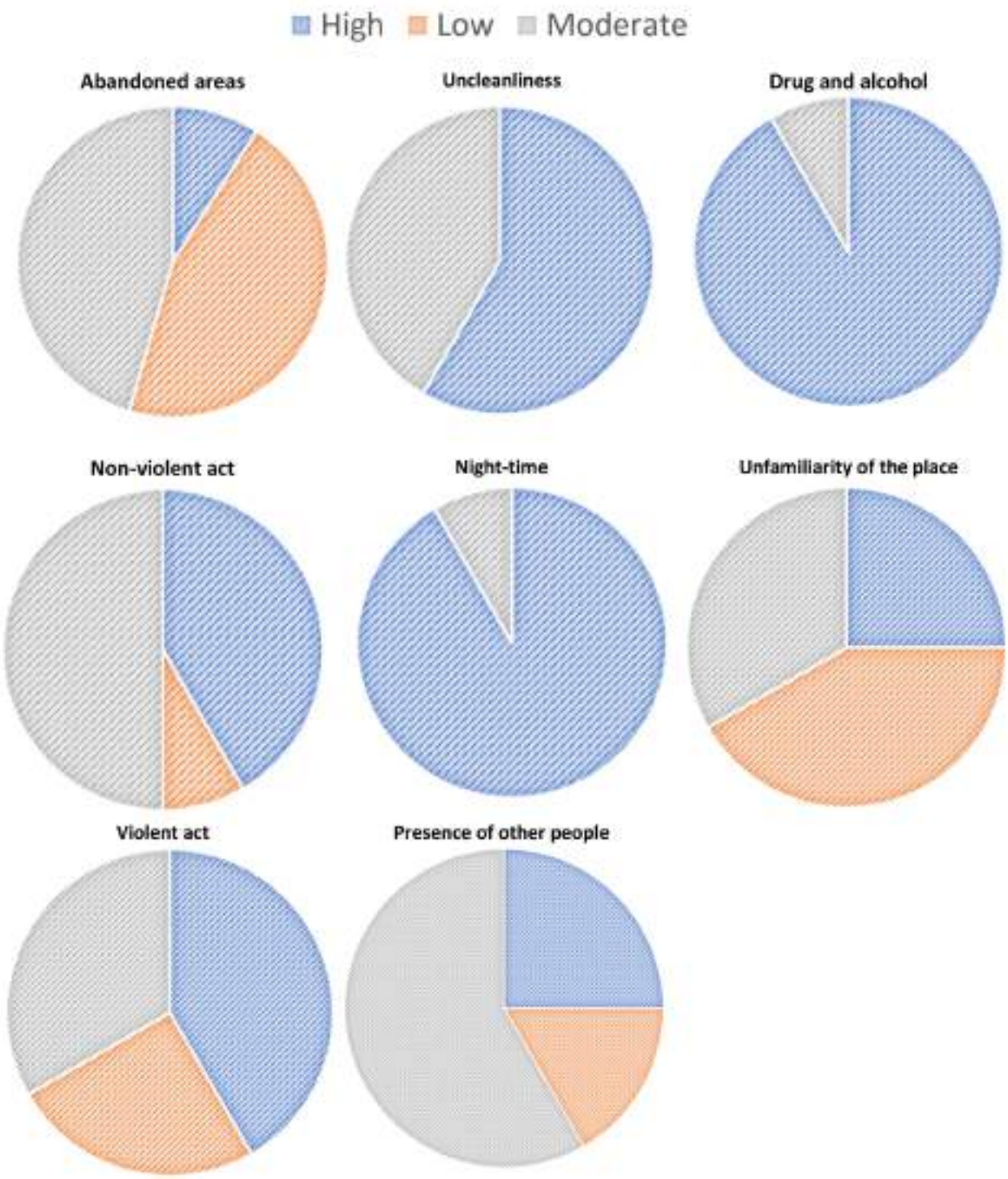


Table 15. Factors that increase the sense of insecurity in Vapaudenkatu Area. Source: Popal and Keya, 2020.

4.9. HANSA SQUARE AREA

The Hansa Square area was selected by 5 respondents amongst 139 respondents in total. The derived charts show that the major factor that affects the sense of insecurity in this place is drug-alcohol, night-time, non-violent act, violent act, uncleanliness, presence of other people, abandoned areas, and unfamiliarity of the place. The factors that affect the sense of security to moderate level are the presence of other people, uncleanliness, non-violent act, violent acts, the unfamiliarity of the place, and abandoned areas.

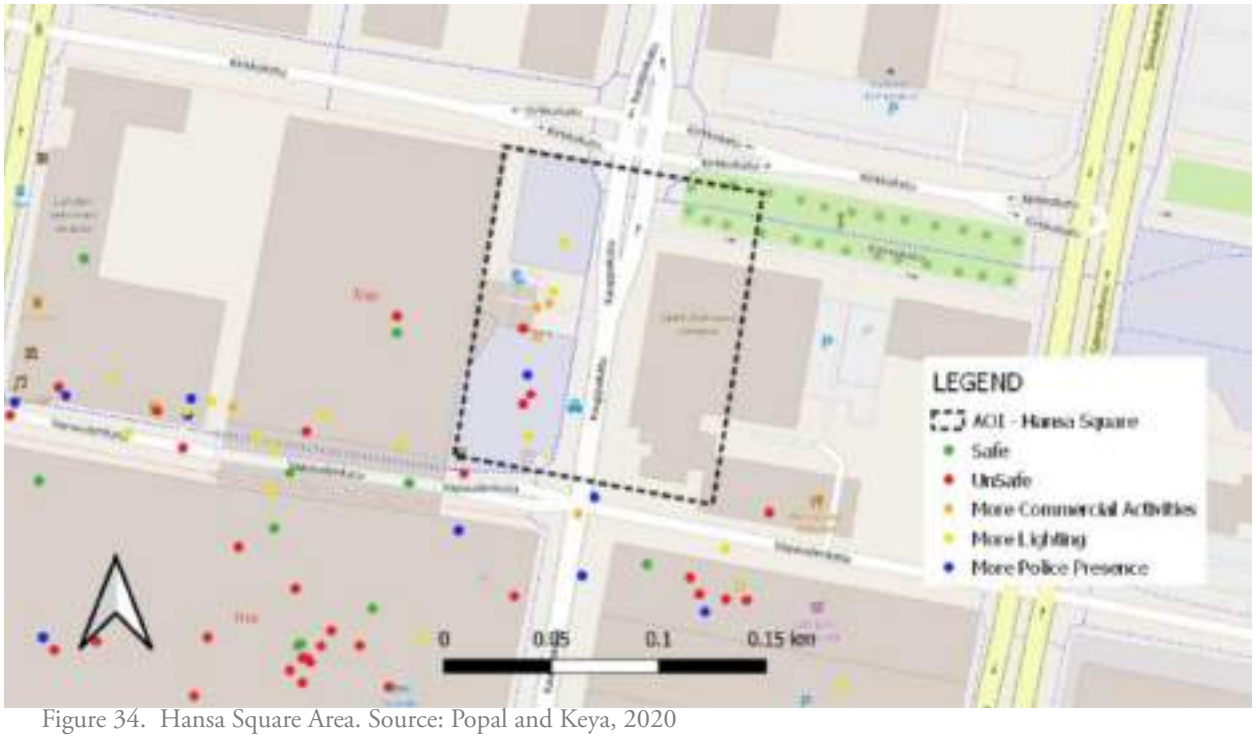


Figure 34. Hansa Square Area. Source: Popal and Keya, 2020

ANALYSIS OF DATA DERIVED FROM QUESTIONNAIRE

OVERALL UNSAFETY SCORE: 1 — **4.2** — 5

Low — High

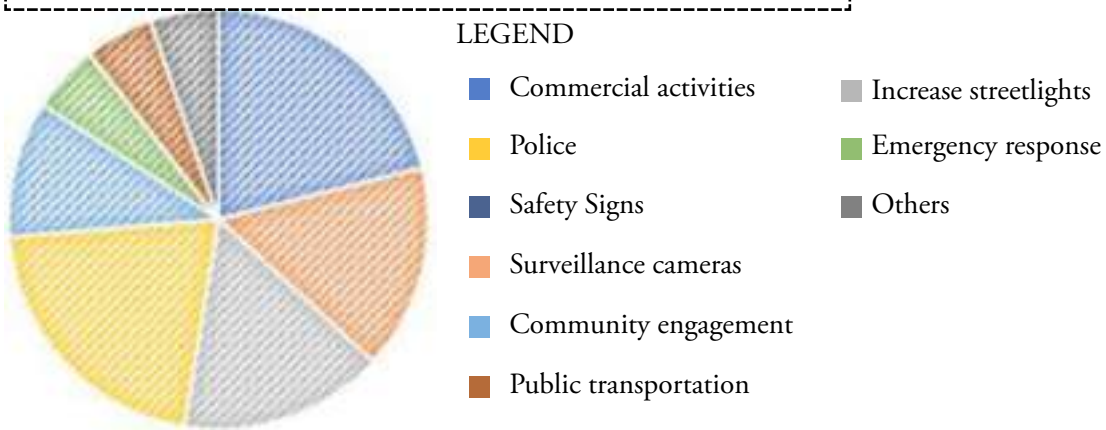


Figure 35. Less present factors in Hansa Square Area. Source: Popal and Keya, 2020.

The analysis shows that in the Hansa Square area, the respondents marked the absence of surveillance cameras, police presence, commercial activities, safety signs as major factors for feeling unsafe.

4.9.1. Factors contribution to sense of insecurity in this place:

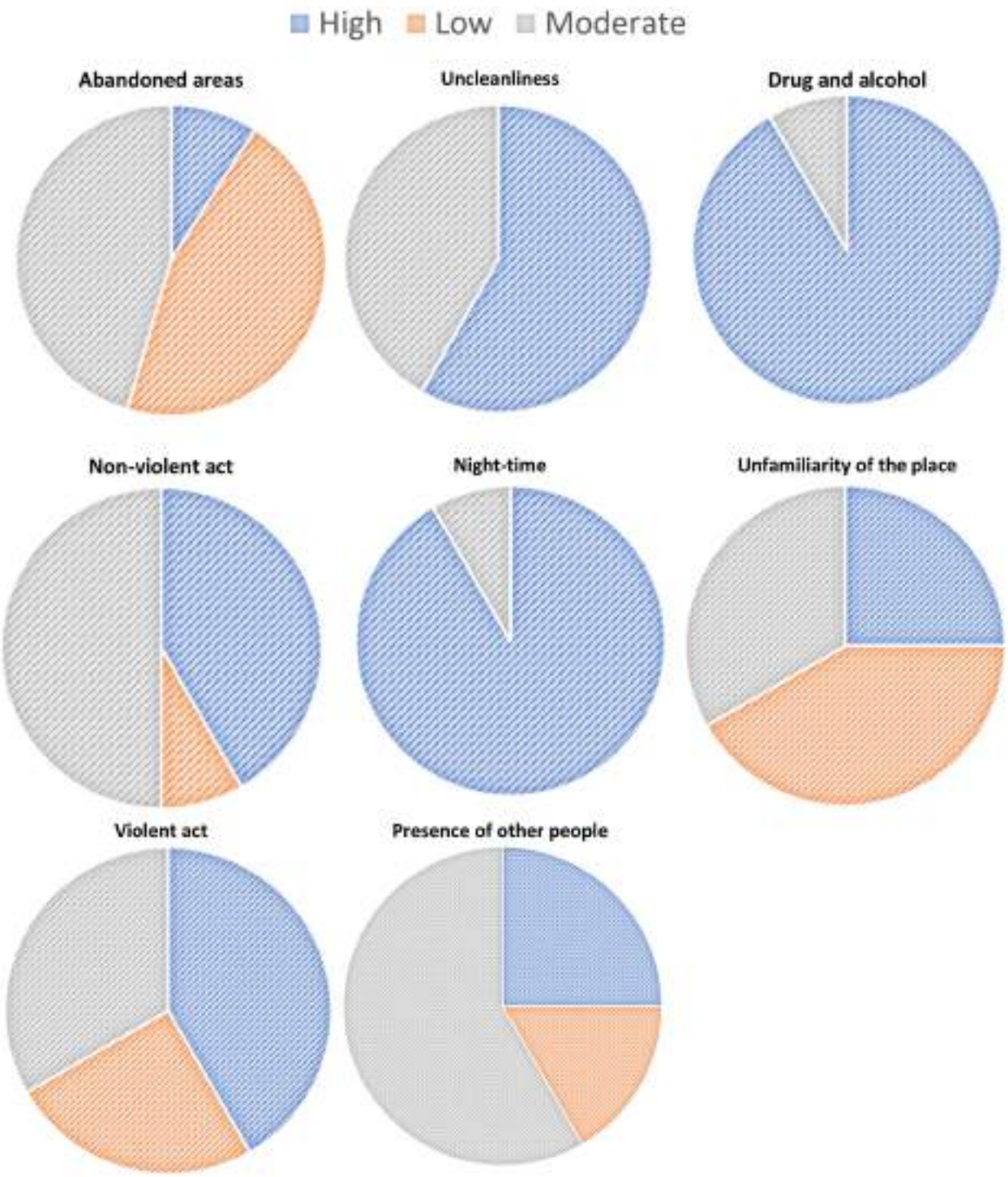
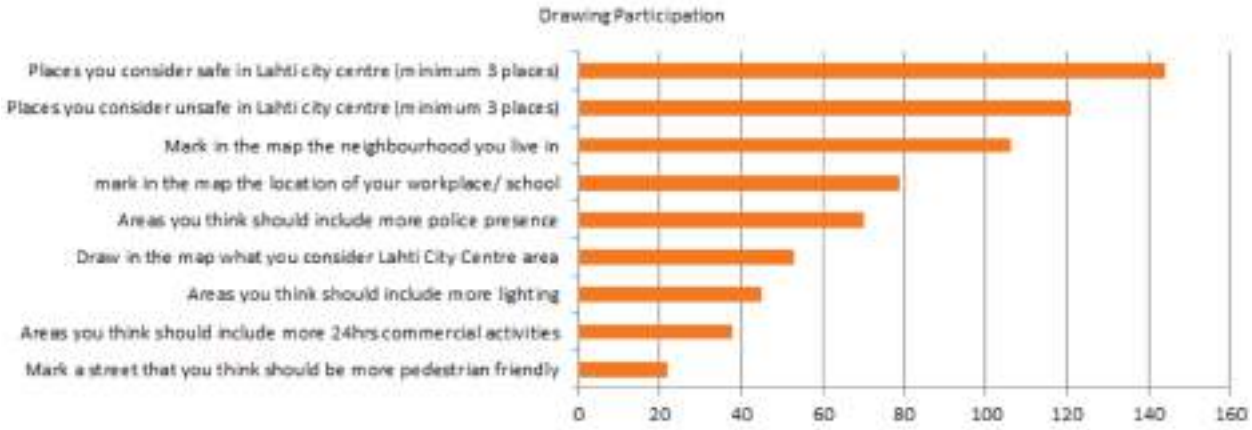


Figure 36. Factors that increase the sense of insecurity in Hansa Square Area. Source: Popal and Keya, 2020.

4.10. IMPROVEMENTS TO THE QUESTIONNAIRE:

Although the questionnaire provided enough data for analysis within a short time frame, assessment of the raw data provided opportunities to improve it further in the future. The below figure shows the drawing participation of the respondents. The type of feature to draw made a difference, as users found inputting points much easier than drawing lines and polygons. There is also a significant difference in the users that drew a safe spot compared to an unsafe spot and this could be due to the design of the questionnaire, as unsafe was located under the safe one. Having them on different pages might have triggered more involvement. Evidently making a question optional led to fewer responses. Information about the user such as the neighborhood they lived in and where they worked performed well when compared to drawing the Lahti city center and this could be because it's more difficult to draw polygons than points.



Graph 14. Numbers of respondents participating in drawing, Source: Popal and Keya, 2020.

The metadata also provided a field that indicated if the questionnaire was filled completely. The below table summarizes the count of respondents that did not fully complete the questionnaire by age group. Most of the respondents that did not complete the questionnaire fell under the group of professionals which includes the ages from 25 to 54 years old. The average time taken shows that the respondents did not allocate enough time in taking the questionnaire for age groups professional (4.1 minutes) and young adults (1.63 minutes). Although the senior citizens spent enough time on the questionnaire, it seems it might have been too confusing, or the layout was not user friendly for that age group. It would be interesting to investigate what caused the confusion for senior citizens in order to make a more robust questionnaire in the future. The young adults only spent 1.63 minutes on average doing the questionnaire, affirming that the questionnaire did not really motivate them. Introducing reward incentives or designing the questionnaire to be more appealing to the young might be worth consideration in the future.

Age Group	Count	Percent	Average Time (min)
Professionals	47	55.95%	4.10
Senior Citizens	19	22.62%	10.12
Young Adults	18	21.43%	1.63

Table 16. Minimum time spent for questionnaire by different user group. Source: Popal and Keya, 2020

The following table shows the age group of the respondents that fully completed the questionnaire. The count shows that the professionals and young adults did well to complete the questionnaire whereas the senior citizens are not well represented. The average time indicated that if the respondents spent on average over 12 minutes on the questionnaire, they are more likely to complete the questionnaire for all age groups. This could also mean that some respondents in the age group of professionals and young adults might have lost interest after a few minutes of taking the questionnaire and quit. All in all, for the questionnaire to be more efficient in the future, it should have an easy structural design flow for senior citizens who are usually technically less proficient to progress systematically while also being appealing to the youth, with more questions designed to arouse their interest and to have a reward scheme for participation.

Education	Count	Percent	Average Time (min)
Professionals	30	54.55%	13.30944
Senior Citizens	5	9.09%	12.10333
Young Adults	20	36.36%	12.16417

Table 17. Average time spent for completing the questionnaire. Source: Popal and Keya, 2020.


Bar & Bistro

CHAPTER 5: ANALYSIS AND PROPOSALS FOR LAHTI CITY CENTRE

Figure 37. Regular activities in Lahti City Centre. Source: European commission, n.d.

5.1. ALATORIN TOIMINTAPUISTO & MASCOTTI CORNER

The area is located next to the Market Square, in the heart of Lahti City Centre. The Alatori Park was remodelled in 2016, with a playground area, sports area, artistic interventions. It also includes an underground parking lot, hence the existing trees where removed. The park is open 24 hours.

In front of Alatori's west corner, there is an "S-market". It is identified as an unsafe place in the new and previous surveys. Its exterior present different problems which deteriorate the zone.

Nowadays, the area is underused; nevertheless, it has significant potential considering the fluctuation of the public.

Figure 38. Time line of Alatori Area. Source: Keya and Saloma, 2020; Adapted from Google Earth, n.d.

Figure 39. Alatori aerial view. Source: Pro Aerial Photography, 2020.

5.1.1. Field Survey

Method

The survey field method considered the review of two topics. On the one hand, the built environment, which is a relevant fact for the feeling of safety in public spaces. The analysis considers the condition and characteristics of the following items: urban furniture, surveillance cameras and street lights.

On the other hand, human activities and dynamics which are essential indicators for the public space analysis. By understanding the users, it is possible to identify areas that require improvements to gain more visitors. It is also to review the existing amount of activities because the theory of "Power of 10 +" of Placemaking (Project for Public Spaces, 2012) mentions that more than ten events show if a public space is successful or not. Considering the Coronavirus situation, this analysis was limited. Either way, it gives a base for understanding the area.

The survey was applied during the day and night on the same day, April 6th, 2020. The weather that day was cold and foggy with an average temperature of 4°C. The survey data sheet is attached in the Apendix .

Figure 40. Panoramic view from the north-west corner of Alatori Park. Source: Saloma, 2020.

CONNECTIVITY

Two secondary streets cross the area: Vapaudenkatu and Aleksanterinkatu. Both have bus stops and parking lots along with them. There are also two tertiary streets; these are Rauhankatu and Marolankatu, the later one has a reduce traffic and a taxi stop. The only transit observed in Marolankatu was by the taxi-drivers. Pedestrians generally walk through the secondary streets and cross Alatory Park, most of them enter the S-market. Cyclists also cross the area (there are prohibition signs for cyclists inside Alatori), there are multiple bicycle racks. There is underground parking in Alatori and another next to the south office building.

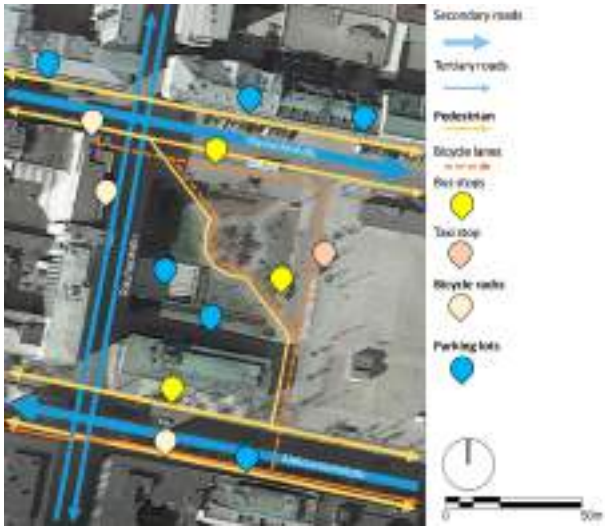


Figure 42. Connectivity analysis, Alatori. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

PEOPLE AND ACTIVITIES DURING DAY

There was the presence of people at the bus stops and taxi stop (drivers). In Alatori there was a combined public specially located in the south area which has a playground and benches. S-market has a constant presence of teenagers and young adults in the façade in front of Alatori, which are very noisy. However, no elderly public stayed. The observed activities are playing, such as jumping, and other common activities like watching, chatting, sitting, walking, and running. The north, east and west side of the park and S-market's facade in Vapaudenkatu street are the most relevant areas without activities.

Figure 43. People and activities during day, Alatori. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

PEOPLE AND ACTIVITIES DURING NIGHT

Nighttime has a reduced amount of people; the area is mostly a transit zone. The park was empty as well as the S-market exterior. S-market presented public influx because its closure time is until midnight. There was just the presence of adults on the bus stops and some taxi drivers (less than during day). Observed activities are sitting, walking, and standing.

Figure 41. People and activities during night. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

URBAN FURNITURE

Aside from a bus top incorporated in the park, there was no other sitting facility with shadow or wind cutters. Eight benches were detected in the park. There was a fair amount of trash bins, but where not for recycling, the ones next to S-market are in bad conditions.

The playground in the south area of Alatori has diverse types of games. The trampolines in the east corner were closed, the sports area is in good condition, and there were no trees detected in the park, just dead weed and flowers. The park has a perimeter fence of 1.2 meters.

Figure 44. Urban Furniture, Alatori. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

SURVEILLANCE CAMERAS

The presence of surveillance cameras is limited; just two were identified. The existing ones do not present signage that indicates their presence. One is located on the top of the office building and the other in Marolankatu street. The north side (Alatori and S-market) does not have surveillance cameras, or at least they are not visible. Additionally, there are no police or security guards in the place.

Figure 45. Surveillance Cameras, Alatori. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

STREETLIGHTS

The area presents good light during the nighttime. On the one hand, there was a proper amount of streetlights (light posts and pendant lighting elements over the streets). On the other hand, the façade's illumination of the surrounding buildings, specially S-market presented a bright profile during this time. So, the light efficiency here is a combination of private and public light-elements.

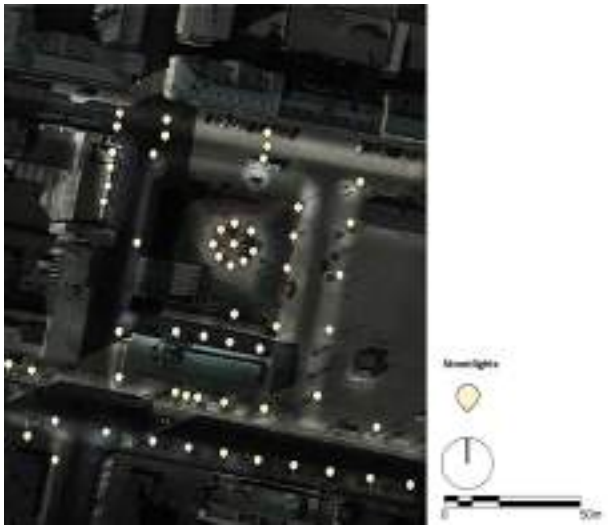


Figure 46. Streetlights, Alatori. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

5.1.2. Analysis Using Google Maps Data

The field survey had limitation considering the existing pandemic situation, so, it was essential to find another source of information for understanding the typical scenario in Lahti and general impressions of the places. Google Maps was applied as a complementary source for the site analysis. The accessibility of this source allows the user to participate in the information collection, but also to find a compilation of comments, scores and activities in different places.

TYPICAL TRAFFIC

The traffic in the area varies during day and time. During weekdays (Friday), the traffic during the morning (8:00) is low in Rauhankatu and medium-low in the secondary streets. At 14:00, all the roads have homogeneous medium-low traffic. At 21:00, Vapaudenkatu presents low traffic, while the other streets have medium-low traffic. During weekends (Saturday), in the morning, all the streets present low traffic, while in the afternoon it increases to medium-low. Finally, at night the secondary roads remain in medium-low, while Rauhankatu shows low traffic.

Notice that Marolankatu is not shown in Google Maps data, because of its reduced presence of cars. Also, the secondary roads have a vital presence of vehicles because of their commercial use.

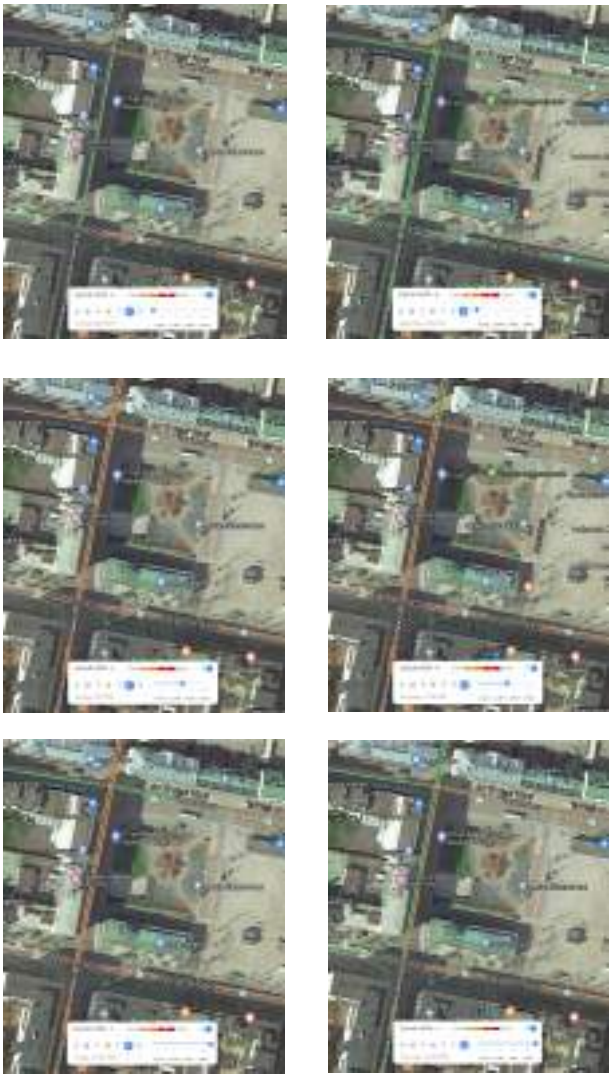


Figure 47. Typical traffic in Alatori. Source: Google Maps, n.d.

COMMERCIAL ACTIVITIES AND OPENING – CLOSURE HOURS

The area presents mostly commercial use. Most of the buildings have commercial activities also in their street-level. According to Google Maps, S-market has the most extended opening hours (6:00 to 24:00) amongst the other stores. It is also observed that Alatori is open 24 hours, as well as P-tori Parking (underground parking lot).

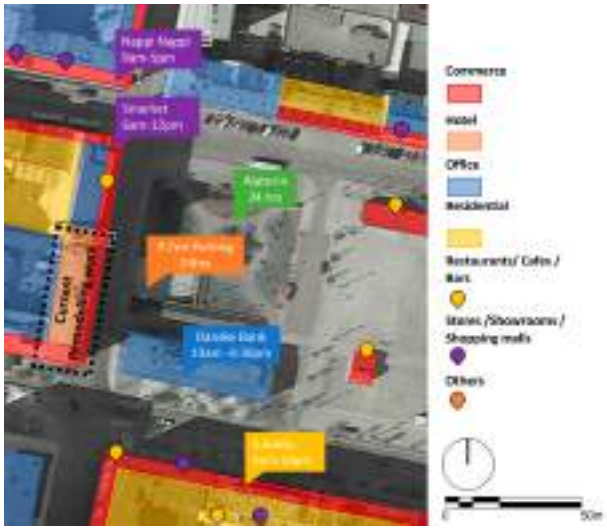


Figure 48. Commercial activities and opening-closure hours in Alatori. Source: Keya and Saloma, 2020; Adapted from Google Maps, n.d.

USERS SATISFACTION

According to Google Maps users, the area has a generally positive score in terms of satisfaction. Alatori Park itself presents 4.5/5, while S-market 4/5. Nevertheless, Danske Bank, which is the building in front of Alatori Park, shows the lowest score of 3.5/5. In the visit, this building presented poor maintenance.

The comments in Google Maps also refer to negative observations of the site, which were confirmed during the field survey.

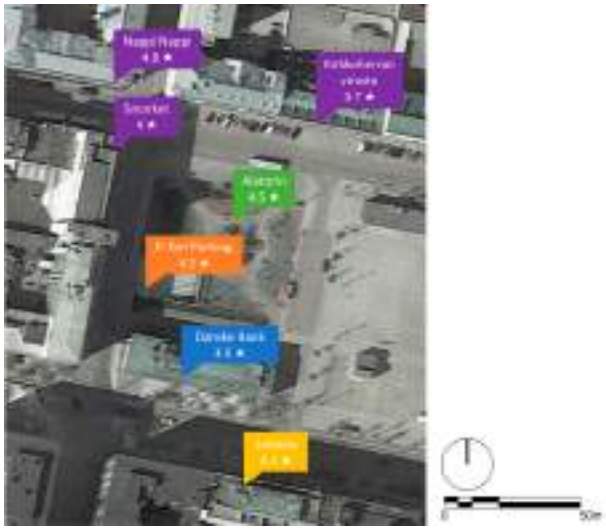


Figure 49. Users Satisfaction. Source: Keya and Saloma, 2020; Adapted from Google Maps, n.d.

Figure 50. Vapaudenkatu Street. Source: Saloma, 2020.

COMMENTS OF USERS

About Alatorin Toimintapuisto

"In the day, a nice children's playground, in the evening, a gathering place for the stray-people"
Päivällä lasten kiva leikkipuisto,iltaisin parrakkaiden sotalasten kokoontumispaikka. (Google, 2019)
Sami Martikainen / 3* / 2019

About S-market Mascot

"Downtown's only nighttime shopping destination"
Keskustan ainoa yön ostospaikka (Google, 2019)
Pasi Liukkonen / 1* / 2019

5.1.3. Photographic Report

Figure 51. Office building in the south area of Alatori Park. Source: Saloma, 2020.

The building divides the Alatori Park with the Aleksanterinkatu street. It also presents a parking lot facing the playground. Is it necessary to have two parking lots next to each other?

Figure 54. Underground Parking Lot. Source: Saloma, 2020.

The new parking lot has a capacity of around 158 cars. The general public feels satisfied with its service and it works 24 hours.

Marolankatu has a minimum activity beside the taxi stop. This street separates the Alatori Park from the Market Square.

Figure 55. Taxi stop in Marolankatu Street. Source: Saloma, 2020.

Figure 52. Users in Alatori Park. Source: Saloma, 2020.

Alatori Park has a diverse public, which are mostly teenagers. The main used area is the south one, where the playground is located.

Figure 53. Lack of maintenance in the Office building. Source: Saloma, 2020.

The building is part of Lahti's modern architecture legacy, but it is in poor conditions. Its façade deteriorates the aspect of the surrounding public space.

Figure 56. Pergola in Alatori Park.
Source: Saloma, 2020.

Bicycle lanes need maintenance since they are already faded. The street has a constant presence of cars and buses.

Figure 58. Bicycle lane in Aleksanterinkatu Street. Source: Saloma, 2020.

S-market is the meeting point for young people. They are loud and generate an unsafe feeling in the area. The place, however, gives the users protection for wind and rain which provides additional comfort.

Figure 57. Users in S-market exterior. Source: Saloma, 2020.

S-market's trash bins are in bad conditions which presents a dirty aspect. Also, there is plenty of vandalism activities like graffiti. The façade is completely closed in the street level, generating a "blind wall" for the pedestrians.

Figure 59. Exterior of S-market. Source: Saloma, 2020.

Alatori has eight benches without wind or sun protection. The furniture is unattractive. The "green areas" remain dead during most part of the year.

Figure 61. Benches in the north side of Alatori. Source: Saloma, 2020.

The existing signag in Alatori Park is unattractive. The right signage is about the park's history but nobody stops to read it.The languages used here are Finnish and Swedish, and the letters are small.

Figure 60. Signage in Alatori. Source: Saloma, 2020.

5.1.4. SWOT Analysis

Strengths	Weaknesses
General • Central location. • Plenty of commercial activities around. • Outstanding connectivity with public transportation and bicycle lanes. • Good illumination. Alatori • Successful south area (playground). • Passersby prefer to cross this area than going around it. • Opened 24 hrs. S-market Corner • Great amount of public (100 per 30 min) • Extended Opening/Closure time	General • Underused spaces (backstreet in S-market, Marolankatu, Parking lots). • No identity of the area (many changes over time). It feels like the "backyard of the Market Square and the Bank Building". • Trash bins with no recycling separation • No police or security guards presence • Limited signals for special-abled people • Reduced amount of benches with wind protection S-market Corner • Presence of vandalism (graffiti) • Trash bins in bad condition • Dirty floor • Presence of young people staying outside the store, perception of insecurity. • Old look of the building Alatori • Northside with reduced activities. In total the park presents less than 10 activities (Place making theory). • Presence of stray-people during nighttime. • No high trees. • Greenery areas just are alive during spring-summer.
Opportunities	**Threats**
• Fluent amount of passersby (possible public) • Possible empty spaces for improving the area. • Existence of a bus stop next to S-market • Lahti "European Green Capital 2021"	• Weather • Perception of "security" in the citizens. • Presence of unwanted activities. • Is the S-market Corner a "public" or "semipublic" space?

Table 18. SWOT analysis in Alatorin Toimintapuisto & Mascotti Corner. Source: Keya and Saloma, 2020.

5.1.5. Main findings

In the field survey, it was possible to identify underused and problematic areas: the north and east side of the park, the north facade in S-market. They do not present enough activities and do not follow the "Power of 10 +" recommendations (Project for Public Spaces, 2012).

Also, there are potential areas for re-develop, which have a strategic location and limited use, such as the office building's parking lot and the Marolankatu street.

The area needs activities during the day, but mostly during the night. Users have pointed out in Google Maps and un the Mapptionier survey that what makes this place unsafe is the presence of people, vandalism, the absence of polices, dirtiness. Users also demand more lighting, police presence and commercial activities.

5.1.6. Proposal

The proposal includes the development of six zones to generate a thriving public space. Following the suggestions of the Placemaking process (Project for Public Spaces, 2012), it is required to cover four aspects: Sociability, Uses / activities, Access/linkages and Comfort /image. Alatori is a well-connected point in the city, so, it needs to improve the other three topics.

The following table shows how each proposal decision is directly related to a detected problem. The project is proposed in different phases in terms of priorities. Each intervention is thought for having a "chain reaction" with another area.

FIRST PHASE

The first phase of the project establishes the development of the north side of Alatori Park. It incorporates commercial activities with attractive stalls, comfortable benches with wind cutters mixed with additional greenery of native species. Also, it will give a new value to the park by embrazing its history with more information panels. The objective is to attract more people into this side. The bus stop will remain; hence, the place will be visible and at the same time will attract more people.

Having more activities will generate the presence of more people, which immediately will impact positively in the S-market corner.

Figure 62. Proposed Master Plan for Alatori. Source: Keya and Saloma, 2020.

SECOND PHASE

The second phase is focused on the S-market exterior on two sides. First, remodelling the corner area. Taking into account the online survey, it will also have the presence of security guards and surveillance cameras. Then, the remodelling of the north façade, with commercial activation. This will make the street more vibrant and transform the existing backstreet.

This phase requires the cooperation of the private and public sector. The City Council can apply rewards (i.e. tax benefits) to encourage the work. The project will also benefit S-market, improving its reputation and even gaining more clients.

THIRD PHASE

The last phase consists of improving the immediate surroundings of the area. First, transforming Marolankatu Street into a pedestrian street to have a better connection with Market Square. Also, it will allow to extend Alatori Park, increase its greenery and implement attractive urban furniture. Additionally, the office building is proposed to become a community infrastructure (i.e. museum). The aesthetic of the building would be maintained for its historical relevance. Finally, the parking lot would be closed to become a pedestrian street with temporal interventions.

The actions will make the area more vivid, empower the community and encourage them to visit the area.

	Area	Problems detected	Proposal
FIRST PHASE	**A** North Side of Alatori	• No activities detected. • The space has a reduce amount of urban furniture. • No wind protection elements. • No tall greenery elements. • The park remains underused.	• Add complementary activities in the north side: Commerce, cafe, tables, etc. • Benches with wind protection. • Include more greenery, specifically trees and native species. • Implement braille signs and scale models. • Improve information panels, embrace the story of the place.
SECOND PHASE	**B** S-market corner	• Presence of vandalism. • Unclean area. • Hidden spot. • Private/public space	• The improvement of Alatori will affect positively this corner – chain reaction. • Presence of a security guard / police. • Remodel the façade of the building. • Remodel the corner area
	C S-market north side	• This side does not present activities, just a bus stop. • Vandalism problems.	• Remodel the façade of the building. Addition of small commercial activities (coffee, ice cream shop, etc.) or open new doors to enter S – Market.
THIRD PHASE	**D** Marolankatu Street	• Underused street (just taxis) • Cuts the connection between Market square and Alatori	• Close a section of this street • Relocate the taxi stop
	E Office building	• Obstructs the connection between Aleksanterinkatu and Alatori. • Lack of maintenance. • Limited uses (offices).	• Restore the building • Apply a public use to it, like a museum, library or other community service.
	F Parking lot (Office building)	• Why a parking lot next to a parking lot? • Lightly dark at night.	• Create an agreement with the underground parking lot, so this place can be redefined. • Use the area for public space to create a connection between Alatori and the new community building. • Art installations and sitting spaces.
	Others	• Bicycle lanes in the surroundings are deteriorated. • The area shows reduce inclusive interventions. • All waste bins are general waste.	• Improve maintenance in bicycle lanes. • Implement inclusive playgrounds, infrastructure and signage (braille) • Change all the waste bins for recycling bins (also in S-market). • Implement security cameras.

Table 19. Explanation of Proposed Master Plan for Alatori. Source: Keya and Saloma, 2020.

FIRST PHASE

Figure 63. Scale model for reinforcing tourism. Source: Saloma, 2019.

Figure 64. Mokša, Urban furniture as a shelter in Lahti. Source: Designboom, 2017.

Figure 65. Commerce Stalls in public spaces. Source: Helene in between, 2019.

SECOND PHASE

Figure 66. Store with good pedestrians scale. Source: Real Commercial, n.d.

Figure 67. Commercial building. Source: ADT, n.d.

Figure 68. Recycling bin. Source: Mapletree, n.d.

Figure 69. Conceptual visualization of Alatori Area. Source: Keya and Valdez, 2020.

THIRD PHASE

Figure 70. Flexible public space with green area. Source: Cohab, n.d.

Figure 71. Expositions in public spaces.Source: Arthus-Bertrand, 2010

Figure 72. Vivid area next to a museum Source: Ishigami, 2017.

Figure 73. Rail Station Tunnel. Source: Saloma, 2020.

5.2. RAIL STATION AND SURROUNDINGS

"The station was designed by architect Thure Hellström from the VR Group and built on 1935." (Wikipedia, 2014.) The station was renovated in 2006 to make it more efficient for the direct connection to Helsinki.

The Rail Station is a daily stop for many citizens for reaching their workspace outside Lahti. It also has a bus station since 2016. The access to the train gates is under a tunnel. It serves as a crossing spot without any additional activity.

5.2.1. Field Survey

Method

The survey method here was done following the same pattern as the previous case of Alatori. The primary factor that made this place very differently was the active vehicle roads and the characteristics of the built environment. Also, the existing activities mainly included passerby and cyclists.

Figure 74. Time line of Rail Station and Surroundings. Source: Keya and Saloma, 2020; Adapted from Google Earth Pro, n.d.

Figure 75. Alatori aerial view. Source: Pro Aerial Photography, 2020.

The survey date and time was the same as Alatori area (April 6th, 2020). Due to the COVID19 condition, there were not many people outside. Despite that, there was an average amount of cars crossing the under street.

CONNECTIVITY

Two arterial roads cross the area. The first one is Mannerheiminkatu, it is the location of the rail station, bus station (national rides), and taxi stop, it also has the presence of heavy transport. Vesijarvenkatu (Uudenmaankatu), on the other hand, comes from the city centre and crosses a tunnel. Both have local bus stations. The area has plenty of parking lots, as well as bicycle racks. People presence is directly related to the activity of the bus and train stations; most people just cross the area, especially in the tunnel.

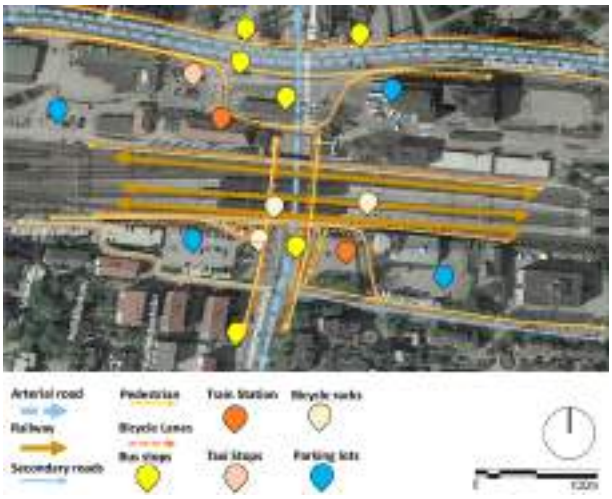


Figure 76. Connectivity analysis, Lahti Rail Station and Surroundings. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

URBAN FURNITURE

The train station is a shelter with reduced sitting facilities, while the bus station, despite having a big ceiling, is exposed to the cold and wind. There was a fair amount of trash bins, but where not for recycling. The area has small portions of greenery, and there are no parks or playgrounds in the immediate context.

Figure 77. Urban Furniture, Lahti Rail Station and Surroundings. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

SURVEILLANCE CAMERAS

The surveillance cameras in the area are noticeable; most of them have signage that makes them visible. The tunnels also show an adequate amount of cameras.

Figure 78. Surveillance Cameras, Lahti Rail Station and Surroundings.. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

STREETLIGHTS

The main roads of the area have proper lightings, even the tunnel. Nevertheless, some dark spots were detected: a walkable/bicycle path that crosses the tunnel in the south section, parking lots (not used at night), and other areas close to the rail station's main building.

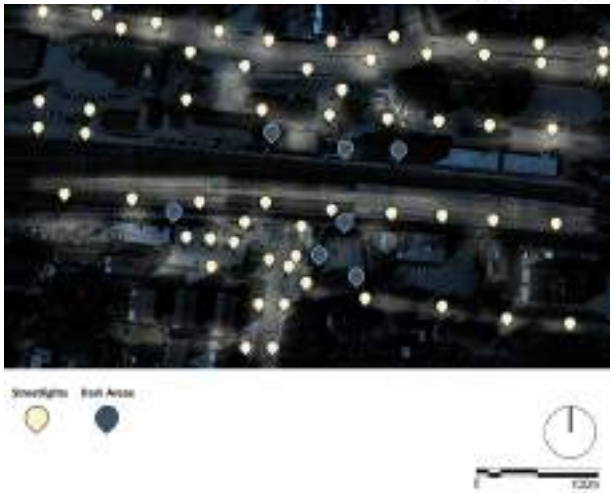


Figure 79. Streetlights, Lahti Rail Station and Surroundings. Source: Keya and Saloma, 2020; Base map from Google Earth, n.d.

PEOPLE AND ACTIVITIES DURING DAY

The main activities of people during the day was crossing through the tunnel and morning walking through the pedestrian ways. Another significant event is the circulation of cyclists. The site mainly works as a circulation route for the people. However, people didn't wait for leisure there since the place doesn't have adequate facilities for placemaking such as benches, commercial activities the pedestrian environment is for crossing.

PEOPLE AND ACTIVITIES DURING NIGHT

During the night, the pedestrian activity was absent. The sitting place in front of the tunnel looked dark and hostile for waiting there. Moreover, the COVID19 condition might add to that factor. The cars were still passing through the road, but less in number.

5.2.2. Analysis using Google Maps Data

TYPICAL TRAFFIC

The traffic around the Rail Station varies according to the time, day and street. During weekdays (Friday), the traffic in the area during the morning (8:00) is mainly low except for Rautatienkatu, which comes from the city centre, and the entrance to the rail station which are medium-low. At 14:00 most of the streets present medium-low traffic, except for Mannerheiminkatu which has sections with low traffic. At night, Rautatienkatu has medium traffic, some areas of Mannerheiminkatu are medium-low, and the rest becomes low traffic.

During weekends (Saturday), the trend is similar. In the morning, most of the streets present low traffic. At 14:00, the traffic is mixed, mostly medium-low, with some low traffic areas and a medium sector in Rautatienkatu. At night (21:00), the traffic becomes quiet again. In comparison with the core area of the city centre, this sector shows a higher transit of vehicles.

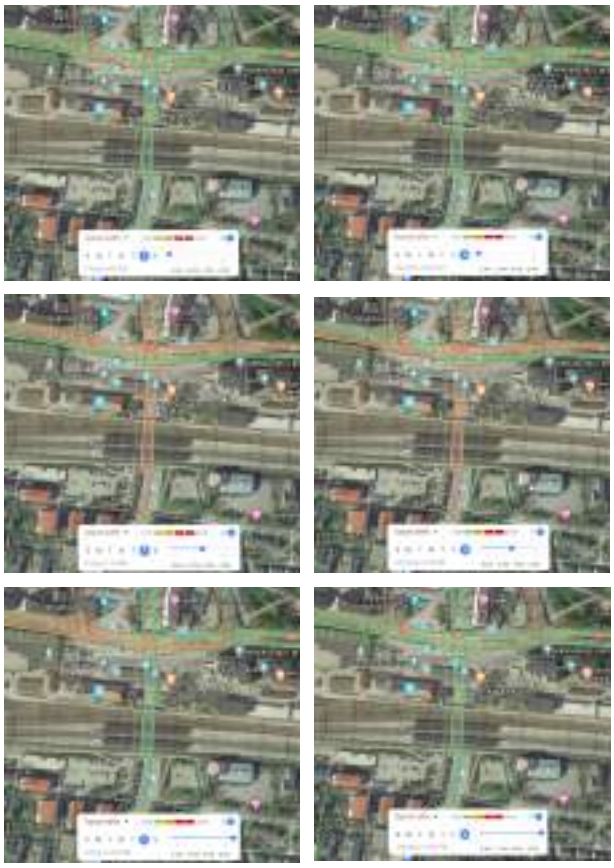


Figure 80. Typical traffic in Lahti Rail Station and Surroundings. Source: Google Maps, n.d.

COMMERCIAL ACTIVITIES AND OPENING – CLOSURE HOURS

The area is mainly residential and with office use. Commerce has a higher presence around the train station's main building. The train station opening hours are 5:00 to 23:00, which matches the train's timetable. Nevertheless, the regional/national scale bus station has trips during the closure time of the train station. This factor limits the use of the main building and exposes the bus users to the cold and unsafety. The latest closure hour in the area is 23:00.

Figure 81. Commercial activities and opening-closure hours. Source: Keya and Saloma, 2020; Adapted from Google Maps, n.d.

USERS SATISFACTION

The overview of the area shows a medium satisfaction with its commerce and services. The train station has 3.5/5. According to comments, its low score relates to the lack of information, confusion in the tunnel area, and open bus station (cold). Additionally, its internal commerce varies from 2.6/5 to 4/5.

Figure 82. Users Satisfaction. Source: Keya and Saloma, 2020; Adapted from Google Maps, n.d.

COMMENTS OF USERS

About Train Station

"Who calls this a travel centre. No services. Narrow strip on poles? No rain protection. You think those millions are creating something. (19 million I remember) The old train station offers toilet and kiosk services. A private entrepreneur makes coffee and good snacks at the station manager's house. I don't understand where the/tax millions went. Bus drivers are agonizing over the situation. Needless to spin around!! "

Kuka kumma kutsuu tätä matkakeskukseksi. Ei mitään palveluja. Kapea kaistale tolppien varassa? Eipä tuo sateensuojaa. Oispa luullu niillä miljoonilla syntyvän jotain. (19 milj. muistaakseni) Vanha rautatieasema tarjoaa wc:n ja kioskipalvelut. Yksityinen yrittäjä valmistaa asemapäällikön talossa kahvit ja hyvää purtavaa. En ymmärrä mihin veromiljoonat menivät. Bussikuskit tuskailevat tilannetta. Turhaa kieppumista ympärämpär!! (Google, 2019.)

Pirkko Päivinen / 1* / 2019

About Train Station and Bus Station

"This is just a bus stop. Open canopy. No services. You can stay in the train station but can't see when the bus arrives. In cold weather, you should have enough clothes and carry a bag in case you are going to the airport or somewhere where you won't need them."

Tämä on vain pelkkä bussipysäkki. Avonainen katos. Ei mitään palveluja. Voi tosin kävellä rautatieasemalle mutta ei näe milloin bussi tulee. Kylmällä säällä varattava tarpeeksi vaatteita ja niitä varten pitää olla laukku jos olet menossa esim. lentoasemalle ja johonkin missä niitä ei tarvita. *(Google, 2019.)*

Kari Pohja / 1* / 2019

Figure 83. Bus Station infront of Lahti Rail Station. Source: Saloma, 2020.

5.2.3. Photographic Report

In the survey, people detected this area as not pedestrian-friendly. Mannerheiminkatu has two pedestrian crossing options, a zebra crossing either in Rautatietinkatu or by the tunnel. Some pedestrians risk their lives and cross in the middle of the street.

Figure 84. Pedestrian crossing on Mannerheiminkatu. Source: Saloma, 2020.

The national scale bus stop has a modern design since it was built in 2016. It has sitting facilities, lighting, and some maps. It has an open design, so travellers are exposed to climate conditions (cold, wind, rain, snow).

Figure 88. Bus station. Source: Saloma, 2020.

The tunnel has a pedestrian path with very good lighting. It has connections to the train gates (stairs and elevators). There are no security guards, and the amount of people is reduced, which make it feel unsafe.

Figure 85. Pedestrian path inside the tunnel. Source: Saloma, 2020.

The tunnel south entrance has two parking lots. There are no additional activities; hence, this is just a crossing point for pedestrians and cyclists.

Figure 86. The view towards tunnel. Source: Saloma, 2020.

The rail station has indoor sitting facilities and also outdoors (with some wind protection). The rail station remains closed from 11:00 to 17:00, but during this time there are still bus trips.

Figure 87. Sitting facilities behind Bus stop. Source: Saloma, 2020.

There is a big section in the tunnel which occupies the bicycle racks. The space, besides being well lightened, can also give the impression of danger because it is hidden from the main tunnel's path.

Figure 89. Cycle parking inside the tunnel. Source: Saloma, 2020.

The Rail Station's building is separated from the platforms.

Figure 90. 1st floor of the Rail Station. Source: Saloma, 2020.

The tunnel does not present commercial or cultural activities. Additionally, there are no English translations in the signage.

Figure 92. Interior view of the tunnel. Source: Saloma, 2020.

The tunnel presents graffiti in diverse spots. This situation shows vandalism in the area.

Figure 94. Vandalism in the rail station staircase. Source: Saloma, 2020.

There are some surveillance cameras, but no police offices nor security guards.

Figure 93. Surveliance cameras. Source: Saloma, 2020.

This path is crossed by a limited amount of users (pedestrians and cyclists). It would be possible to improve the area with more greenery and additional activities.

Figure 91. Vibrance of pedestrian ways. Source: Saloma, 2020.

At night the place looks empty, which makes it feel unsafe. This section also has artistic interventions.

Figure 95. Night-time view. Source: Saloma, 2020.

5.2.4. SWOT Analysis

Strengths	Weaknesses
General • Strong traffic connection. • Residential zone in close-proximity. • Large possible areas to transform into parks. Tunnel • Good lighting. • Mostly used by passerby from both sides. Pathway • Used by lot of public for walk. Bus Stop & Train Station • Connects lots of routes and people altogether. • Trigger commercial activities.	General • Less visual connection. • Not adequate signage in English and braille. • Lack of public facilities. • Lack of commercial activities. • Presence of vandalism. • Vandalism. • Excessive parking lots. • Lack of activities at night. • Dark spots. • Wind cutter not adequate. • Not 24/7/ open for waiting . • Sitting places without wind cutter. • Edgy environment for gathering.
Opportunities	**Threats**
• Strong commercial activity generation. • Possible empty spaces for improving the area. • Green park space development. • Generate more public activities in order to make a safer place. • Attract more people willing to live in the residential area.	• Hostile weather. • Unexpected situation leading to absence of people in the public areas (example- corona virus epidemic 2020). • Perception of 'security' amongst people.

Table 20. SWOT analysis of Alatori. Source: Keya and Saloma, 2020.

5.2.5. Main Findings

The site has strong connectivity since it is a significant transition point. It has large areas to be converted into possible places for people activities. However, despite being a transaction point, the site has a less visual connection on each side since the tunnel works as a visual barrier. The staircase towards the first floor also is not easily detectable. Therefore the place can be a bit confusing for first-timers. Moreover, the site has excellent potential for commercial activities since it works as a passing road for many users. The rail station could be made more vibrant with more people activities and more security.

Figure 96. Lahti Rail Station and Bus Stop aerial view. Source: Vesa Toivanen, 2016.

Figure 97. Lahti Rail Station, Bus Stop and Tunnel aerial view. Source: Vesa Toivanen, 2016.

5.2.6. Development Phases of the Rail Station

The potential hotspots were first detected in terms of unsafety, uncleanliness, less urban connectivity, less commercial activities, less lighting, etc. Then relevant improvement suggestions were made. The proposal for development of the site includes three phases.

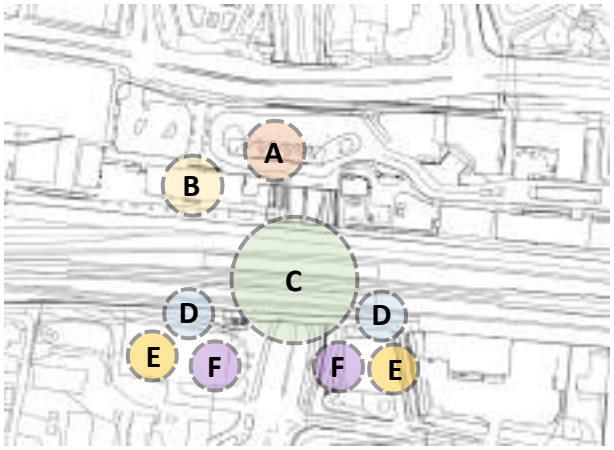


Figure 98. Areas to improve in Rail Station and surroundings. Source: Keya and Saloma, 2020.

FIRST PHASE

The bus stop needs to be developed with wind cutter so that people waiting for the bus after evening time will feel comfortable. In addition to that, the train station will be accessible 24/7 for the people so that they can feel safer while waiting for midnight transportation. The sitting places surrounding this place will be improved with wind cutters.

More security guards will be enforced in a place to increase the feeling of safety.

SECOND PHASE

In this phase, food stalls will be introduced on the first floor of the tunnel. There will be more commercial activities to encourage people visiting the place. Introduction of atrium spaces could be used to allow more visibility between different floors. More signage could be used in international language (English) so that foreigners will find it easier to understand the directions.

Figure 99. Areas to improve in Rail Station and surroundings. Source: Keya and Saloma, 2020.

THIRD PHASE

At this stage, the occupied large areas for car parking will be reduced to 50 percent. The other 50 percent for car parking will include two stories parking lifts to maintain the same amount of car places. This will create room for green park development on both sides of the tunnel. Then the green park will be used for children playground and leisure time sitting area.

In this phase, the park will be developed with more public facilities. Adjacent pedestrian road to the park will be widened to allocate food stalls. This will create multiple activities alongside the proposed green park and attract more people in the area. More streetlights will be provided there to encourage people to spend time during the night as well. This will reduce the hostile night time sense of insecurity in that place.

	Area	Problems detected	Proposal
FIRST PHASE	**A** Bus Stop	• Absence of wind cutter in sitting areas in the bus stop and also outside the train station. • Hostile environment during night. • Lack of public activities at night in the surrounding area.	• Wind cutter addition for sitting places in the bus stop and outside the train station. • Generate commercial activities. • Presence of security guards.
	B Train Station	• Closes at 11pm, people that have bus trips after that time cannot use its facilities.	• Keeping the train station waiting zone open 24/7. • Include 24/7 commerce.
SECOND PHASE	**C** Tunnel	• Reduced visual connection with vertical circulation route. • No information booth. • Not adequate signage in English and braille. • Lack of public facilities. • Lack of commercial activities. • Inner chambers that are not visible from street (Bicycle area).	• Increasing visibility from the tunnel towards the upper floor. • Increasing visibility towards the staircase. • Introducing atrium spaces. • Information desk. • More signage and translation in English and braille. • Security guards. • Commercial activities.
	D Pathway	• Presence of vandalism. • Lack of streetlight. • No benches.	• Street stalls alongside the pathway. • More street lights along the ramp. • More urban furniture.
	E Parking lot	• Excessive parking lots. • Lack of human activities during day and night. • Dark spots. • Lack of parks in the neighbourhood.	• Altering the existing car park area with multipurpose activities. • Vertical parking lot proposal. • More street light. • Transformation of 50% of the parking lots into parks (both sides).
THIRD P.	**F** More activities	• Lack of human activities during day and night. • Absence of cultural activities for the neighbourhood.	• Food stalls in the parks. • Cultural and sport activities (recycling workshops, dancing classes, music concerts, movie projections, etc.)
	Others	• Waste bins are not recyclables. • No braille signage.	• Incorporate recyclable bins. • Include inclusive signage.

Table 21. Development strategies in selected locations of rail station.
Source: Keya and Saloma, 2020.

FIRST PHASE

Figure 104. Food court open 24/7 in the bus station and rail station. Source: Flickr, 2017.

Figure 103. Public benches design with wind cutter. Source: Arteide, 2016.

SECOND PHASE

Figure 100. Car parking lift to reduce parking lot area. Source: Indiamart, n.d.

Figure 101. Atrium Space in station. Source: Saloma, 2020.

Figure 102. Transformation of old buses and train wagons into stalls . Source: Nicole Jewell, 2018.

Figure 107. Conceptual visualization of Rail Station Area. Source: Keya and Valdez, 2020.

THIRD PHASE

Figure 105. Introducing colorful playground. Source: LAPPSET,W n.d.

Figure 106. Transformation of open areas into urban park. Source: sub.centro/Las Condes, n.d.

Lack of public art, benches and aesthetic value causes Rautatienkatu unpleasant & unsafe

Figure 108. Rautatienkatu pedestrian street. Source: Begum, 2020.

5.3. RAUTATIENKATU

Rautatienkatu is an approximately 810 meters long road by having Ristinkirkko/Church in the north, Market Square in the west, Trio in the east and Train Station in the south (Google Earth, 2020).

Rautatienkatu's unique feature is that it is divided into Pedestrian and Vehicular section. For detailed study purpose, we have chosen approximately 224 meters long pedestrian section and 222 meters long vehicular section of Rautatienkatu as shown in Fig 109 (Google Earth, 2020). Pedestrian section (Fig 110) is located in between Trio and Market Square. Vehicular section (Fig111) is located near the train station.

We have analyzed the background and existing condition of Rautatienkatu by using field observation, survey results of 2017, 2018, & 2020, and online resources and then proposed an improvement plan to enhance its safety.

Figure 109. Location of Rautatienkatu in Lahti City Centre. Source: Google Earth, 2020

Figure 110. Rautatienkatu Pedestrian Section. Source: Begum, 2020.

Figure 111. Rautatienkatu Vehicular Section. Source: Begum, 2020.

5.3.1. Connectivity

Both sections have good connectivity with rest of the city via bus, car, and/or bicycle (Fig 112). City centre residents can easily reach there on foot. Street pattern are flexible for both pedestrian and car/bus users (Fig 113). Convenient bus stands are avaialable nearby. Several bike racks at random locations close to the both sections. However, vehicular section has many car parking lots on the spot or nearby (Fig 114) whereas pedestrain sections is dedicated to pedestrian purpose mainly.

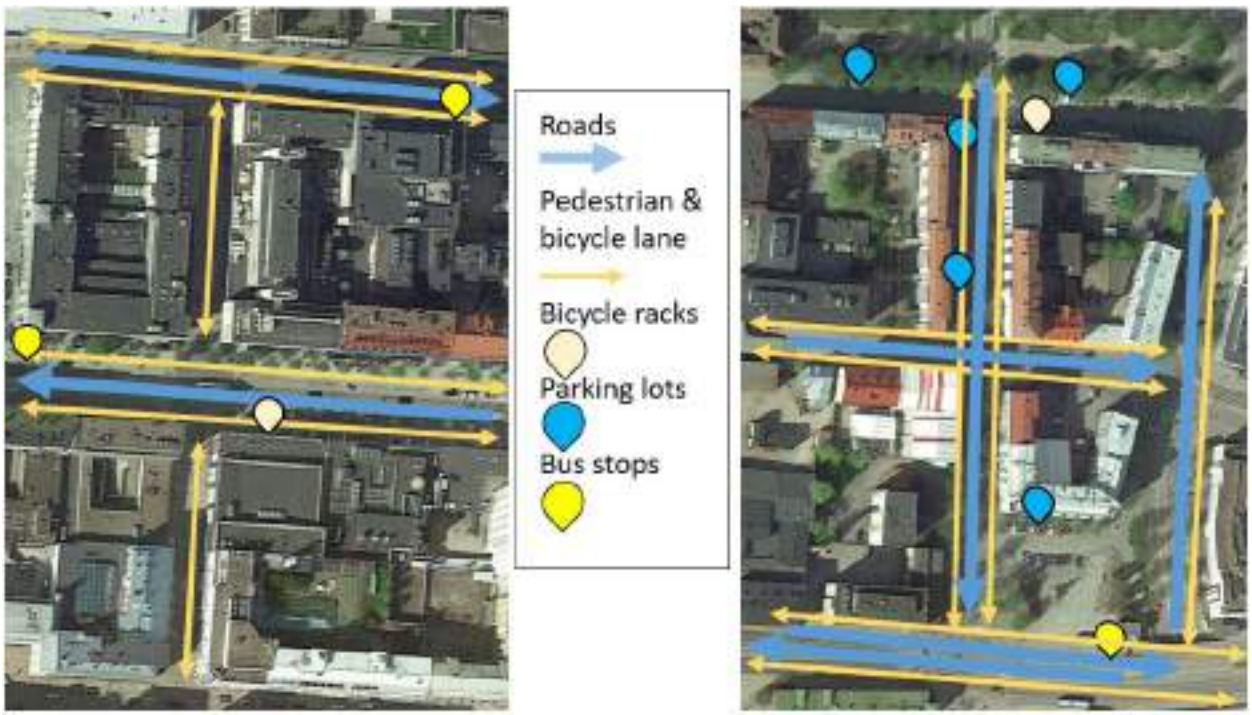


Figure 112. Overview of connectivity at pedestrian (left) and vehicular (right) sections fo Rautatienkatu. Source: Google Maps (satellite view), 2020.

Figure 113. Example of good access to both sections of Rautatienkatu. Source: Begum, 2020.

Figure 114. Car parking lots at Vehicular section of Rautaienkatu. Source: Begum, 2020.

Years	Pedestrian section	Vehicular section
Field Observation 2020		
Google Street view 2011		
Google Street view 2009		

Table 22. Comparison of 2020 field observations with the images from 2009 & 2011 for both pedestrian and vehicular section of Rautatienkatu. Source: Begum, 2020; Google Map street view, 2009; & Google Map street view, 2011

5.3.2. Street View Comparison

In this section, we have compared our field observation especially street images to two earlier years, 2009 & 2011 street images. We have tried to figure out how Rautatienkatu looked like in 2009 and 2011. The aim of this comparison is to identify the changes occured during last 10 years in this street.

In table 22, we have accumulated Google Map street view images of 2009 & 2011 for both pedestrian and vehicular section of Rautatienkatu. From the table, it is obvious that today's pedestrian section looks slighly different than 2011's image. In 2011, there were several round-shaped seating arrangement present on the spot which are missing currently. There are only two permanent benches available on the spot as shown in Fig 115.

On there other hand, vehicular section's street view seems unchanged for last 10 years. Besides, there are some dedicated space for car parking in this portion of Rautatienkatu.

Figure 115. Benches found at Pedestrian section of Rautatienkatu. Source: Begum, 2020

5.3.3. Uses and Activities

Both sections of Rautatienkatu has mixed-use development including commercial, services, and residentials. Commercial activities are prevalent in the pedestrian section (Fig 116) whereas residential use dominate the vehicular section (Fig 117).

Figure 116. Commercial uses at Pedestrian section of Rautatienkatu. Source: Google Map, 2020.

Figure 117. Commercial uses at Vehicular section of Rautatienkatu. Source: Google Map, 2020.

5.3.4. Traffic Condition

Rautatienkatu is located at an active zone of Lahti city center. Thus, it will have regular vehicle rush along or across this road. The typical Friday and Saturday traffic conditions are provided below by using Google Map Traffic.

Figure 118. Friday typical traffic at pedestrian section of Rautatienkatu. Source: Google Map Traffic, 2020.

Figure 119. Saturday typical traffic at pedestrian section of Rautatienkatu. Source Google Map Traffic, 2020.

From Fig 118 to Fig 121, it is evident that none of the sites face heavy traffic on the roads. However, the cars usually don't run fast as there are frequent pedestrian crossing are available. As Saturday is weekend, roads are quite empty and car run fast (as shown in green color). No traffic issues were identified in previous studies too.

Figure 120. Friday typical traffic at vehicular section of Rautatienkatu.Source Google Map Traffic, 2020.

Figure 121. Saturday typical traffic at vehicular section of Rautatienkatu. Source: Google Map Traffic, 2020.

5.3.5. Street lights & Serveillance Camera

From the field observation at night, we have found that there sufficient amount of overhead street lights are available at both sections of Rautatienkatu (Fig 122). However, streets lights at vehicular section are more dispersedly placed than pedestrian section. Moreover, both sections have ample amount of serveillance camera.

Figure 122. Street lights at pedestrian section (top) & vehicular section (bottom). Source: Begum, 2020.

Usually every shop and building entry is secured with surveillance camera which ensures the safety issue at the place (Fig 123).

Figure 123. Surveillance camera. Source: Dagay, 2020.

STRENGTH	WEAKNESS
Rautatienkatu (Pedestrian): • Central location. • Plenty of commercial activities around. • Outstanding connectivity with publictransportation and bicycle lanes. • Free from vehicular interruption **Rautatienkatu (Vehicular):** • Significant number of trees • Mixed use of residential and commercial activities • Defined path for car, bicycle and pedestrian	**Rautatienkatu (pedestrian):** • Limited plants • Limited seating arrangement with wind protection • Lack of amenities and fun activities • Slightly smelly due to alcohol spill **Rautatienkatu (vehicular):** • No benches for pedestrian • Dim overhead streetlights • Car parking is a barrier to the amenities
OPPORTUNITY	**THREAT**
Rautatienkatu (Pedestrian): • Suitable location for both shopping and resting • Can be converted into lively places with symbolic sculpture and fountains • Potential location for public gathering with suitable facilities and by increasing the amenities **Rautatienkatu (Vehicular):** • Centre for nearby neighborhood for daily necessities • More varieties of commercial activities • Potential place for gathering and resting for travelers as it is near to the station and Travel Centre.	**Rautatienkatu (Pedestrian):** • Limited varieties of commercial activities • Has to compete with Trio and Market square in terms of attractiveness **Rautatienkatu (vehicular):** • Sex and chill shops overwhelmed the area which leave limited the scopes for other commercial activities

Table 23. SWOT analysis of Rautatienkatu. Source: Begum, 2020.

5.3.6. SWOT Analysis

By using SWOT analytical too, we have identified the strengths, weaknesses, threats and opportunities of Rautatienkatu in Table 23. This analysis helped us to create the improvement plan by utilizing the strengths, reducing weaknesses and by taking advantages of the opportunities while avoiding the threats.

This analysis is the foundation to propose certain changes in the existing environment in order to enhance the safety & security of Rautatienkatu. Moreover, by following the strategies of placemaking, we have noted down the key factors (in Fig 124) that can make Rautatienkatu more active and vibrant and eventually help to improve its safety.

Figure 124. Focused factors that can create Rautatienkatu more active and secured. Source: Begum, 2020.

Figure 125. Rautatienkatu pedestrian street during night. Source: Begum, 2020

5.3.7. Improvement Scope & Proposal

Rautatienkatu Pedestrian Street

Figure 126. Current view of Rautatienkatu pedestrian street. Source: Begum, 2020.

As explained in chapter three, 2017 survey result pointed out that Ratuatienkatu pedestrian section was marked as a place of lack of seating arrangement, plants & greenery, and public art (Fig 126). In 2018 survey report, this place was found as smelly, ugly, and unpleasant. Furthermore, as mentioned in chapter four, 2020 survey result uncovered that violent and no-violent activities, drug & alcohol use cause this place unsafe. Besides, lack of police presence and dim street lights affect the sense of insecurity in this location. Finally, field study observation added that there are underuse facilities (shape like fountain) and unknown sculpture in this street (Fig127).

Figure 127. Rautatienkatu pedestrian street photos. Source: Dagay, 2020 and Begum, 2020.

All concerns raised for Rautatienkatu pedestrian section can be addressed by following below street design (in Fig 128) where proper sitting arrangement with ample greenery can allow pedestrian to take rest and spend their quality time in this place. As a result, it will convert it into an active location for public gathering.

Rautatienkatu pedestrian section can be an active place as seen in the design plan given in Fig 128. Though building structure cannot be changed but public art can be added to increase its amenities. Ample amount of seating arrangement with proper wind shield will allow people to stay longer on the spot and make it a good public interaction destination. Moreover, adding more greeneries will increase the liveliness of this place. If this street turns into a good public gathering place, it will increase the sense of security in this location. Overall, if the place is meant for pedestrian, then the facilities should be arranged in such a way that gives a vibe of belonginess and ownership to the pedestrian. Examples of some activities are given in Fig 129.

Additionally the sculpture can carry a symbolic meaning of the place narrating its history. The round shaped concrete infrastructure can serve as both fountain and seating arrangement.

Figure 128. Proposed plan for the Rautatienkatu pedestrian street including evergreen trees. Source: Valdez, 2020.

Comfortable sitting

Street performance can make the place vibrant

Unique display of existing facilities to attract people

Facilities for kids

Figure 129. Examples of activities and plan for Rautatienkatu pedestrian street. Source: (1) Landezine, 2018 (2) Gundumane, 2017 (3) Smith, 2005 (4) Houz, n.d.

Rautatienkatu Vehicular Street

This is the closest street to the travel centre and train station. Thus, visitors or tourists usually encounter this locality at first when they arrive at Lahti. However, it does not give any welcome look to the visitors. It is more like a normal street with conventional buildings and some shops (Fig 131). Besides, land use pattern of this locality had been almost the same for last 10years. Besides, road side car parking (though legal) make a invisible boundary between footpath and vehicular path and reduce the aesthetic look of the area. Sex and chill shops dominate the area which reduce the diversity of the commercial activities in this area.

Thus, in order to make this area vibrant and to improve its public interaction as displayed in Fig 130, we have proposed to incorporate more varieties of shops in the groundfloor of each buildings. Besides, there can be variation in terms of opening hours, so that the area is active at both days and nights. For example, as the major use is residentail purpose, a new superstore can be introduced here. Moreover, more cafes and bars will help the travellers to spend their time in a cozy place while they are waiting for their bus or train.

The road side parkings are highly suggested to shift to another location. Then, the available space can be used for café and bars such as introducing bar garden with roadside seating arrangement (examples are in Fig 132).

Overall, our proposed design plan indicates that by increasing the diversity of commercial activities, introducing public art and arranging suitable and sufficient benches on Rautatienkatu, this road can be more lively and thus, can be considered more safe and sound.

Figure 130. Proposed design plan for Rautatienkatu vehicular street and footpath. Source: Rattanakijanant & Valdez, 2020

Figure 131. current view of Rautatienkatu vehicular street. Source: Begum, 2020

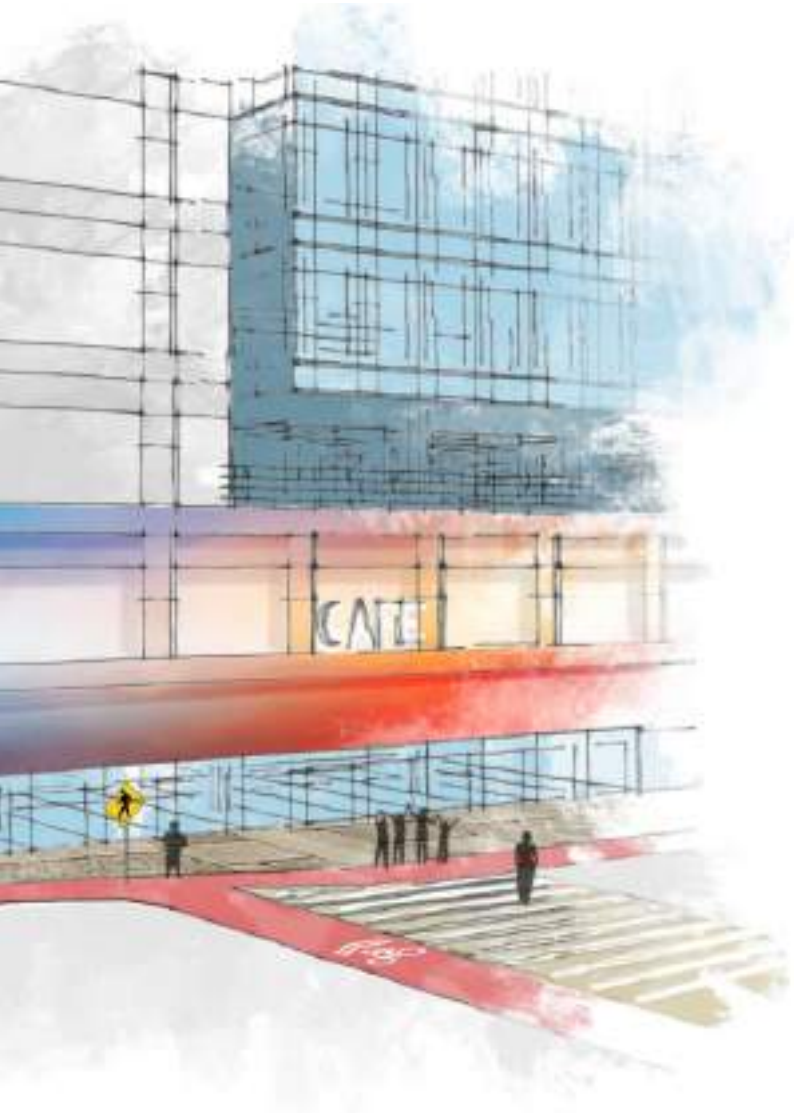


Figure 132. Example of road side benches with sufficient greenery. Source (1) Pinterest, 2012 (2) Wikimedia, 2016.

Figure 133. Vapaudenkatu (Trio). Source: Valdez, 2020.

5.4. HANSA SQUARE AND VAPAUDENKATU

Figure 134. City Center Key Plan. Source: Lahti Kartta, n.d.

Figure 135. Hansa Square and Vapaudenkatu Boundary Map. Source: Lahti Kartta, n.d.

5.4.1. Hansa Square

Hansa Square is an open space along Kauppakatu and is bounded by Kirkkokatu and Vapaudenkatu. Situated in the middle is an underground car park with 540 parking spaces.

With lack of activity, few street furniture, and insufficient landscaping in the area, it is perceived why Hansa Square is in need for improvement.

The mall façade itself made the space uninviting, its balcony is not efficiently used and posters that are blocking the interior may entice violence, crime, and other suspicious activities in its covered walkway because it is not visible by the public.

Figure 136. Hansa Square and Trio Facade. Source: Popal, 2020.

5.4.2. Vapaudenkatu

Figure 137. Vapaudenkatu. Source: Popal, 2020.

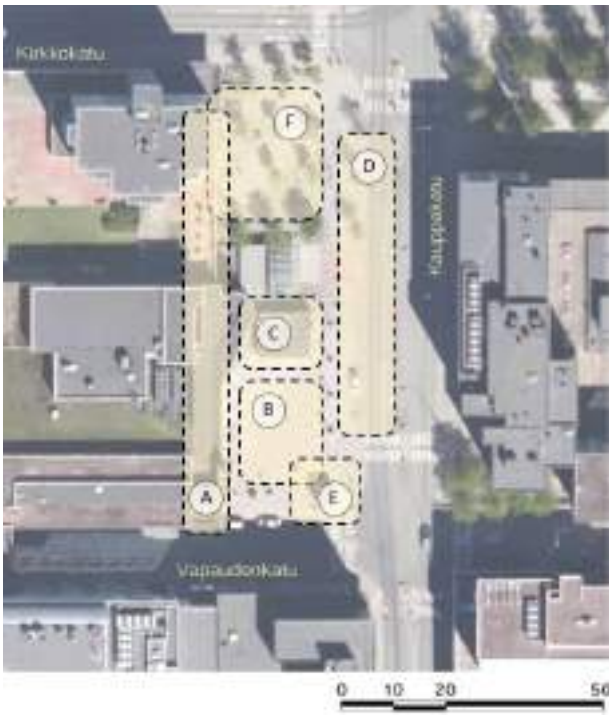
Vapaudenkatu is an 880-meter-long street which is bounded by Lahdenkatu and Saimaankatu. However, the scope of the analysis only focuses on some parts of Vapaudenkatu, particularly between Rautatienkatu and Kauppakatu, which is approximately 350 meters in length.

It is observed that Vapaudenkatu is mostly car-dominated. On daytimes, there is lack of passers-by mainly because of the dullness of the area and people prefer walking on a more pleasant and bright street such as Aleksanterinkatu. And when night comes, the area becomes a hotspot for drunkards due to several pub businesses in the area. Thus, attracts violence and invokes anxiety.

5.4.3. Field Observation in Hansa Square

Lacks social activity, too hardscape dominated, and posters in mall façade may entice suspicious activities in the covered walkway.

Awkward location of a food kiosk since being located in the middle of the square.



Illegal parking in pedestrian walkway regardless of the 'No Parking' sign in the area.

Used to be a food kiosk but currently has no function. Thus, serves as an obstruction.

Disordered arrangement of landscaping, street furniture, and bicycle parking makes the Trio entrance unattractive and unwelcoming.

Figure 139. (left (L) to right (R)) Trio facade; Hansa Squre Key Plan; Illegal parking; Food kiosk as obstruction; Trio entrance. Source: Lahti Kartta, n.d.; Valdez, 2020

Parts of the walkway are not visible from the public which gives opportunity for violent activities.

Figure 140. Trio covered walkway. Source: Valdez, 2020.

Dull and dark walkways that is evident even on daylight. Apparently, sunlight cannot enter under the pedestrian way .

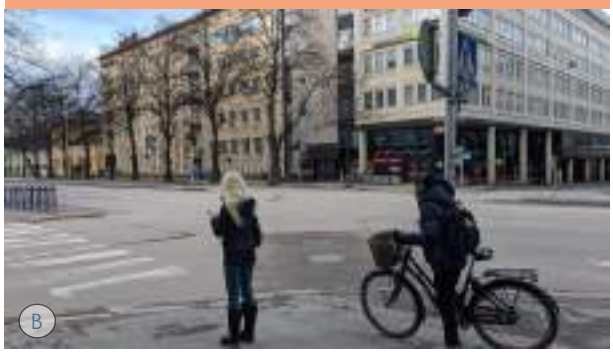
Figure 141. Vapaudenkatu under Trio bridge. Source: Popal, 2020.

5.4.4. Field Observation in Vapaudenkatu

Figure 143. Vapaudenkatu Key Plan. Source: Lahti Kartta, n.d.

The sreet has insufficient landscaping and lacks daytime activities.

Inefficient traffic intersection.



Shattered glass gives the impression of violence in the area.

Area under the tunnel invokes anxiety due to its eerie ambiance especially at night.

Figure 142. (L to R) Vapaudenkatu between Rautatienkatu and Vesijarvenkatu; Vapaudenkatu and Vesijarvenkatu crossing; Shattered glass; Trio tunnel. Source: Valdez, 2020

5.4.5. Site Analysis using ArcGIS

Figure 144. Data reference point at night. Source: Popal, 2020

To do a quantitative analysis of the observations, measurements from eight different reference points were taken (Figure 144). Each reference point was examined twice per visit for a minute within an hour timeframe during both night and day. Two visits were made to the sites, one during weekday on 2nd April 2020 and another in the weekend on 4th April 2020 to amount for variation. Overall four observations were made per site for both day and night, and then averaged for final analysis.

Due to the rare Coronavirus pandemic restrictions put in place, relative observation was used instead, since absolute observation did not represent the true state of the environment. After measurements were taken, they were quantified by comparing against the other reference points. The reference points were evenly distributed across the area of interest and for reference points 1 to 6, observations were made to the left side of the reference point until the corresponding point or edge of the area of interest. For the points regarding Hansa Square, 7 and 8, observations were made looking towards the center of the square.

The data was first collected using sketches and counts as shown in Figures 145 and 146. Apart from the environmental and design aspects, much attention was also given to the number and movement of people and cars and their interaction with space. The observations also included features such as the presence of surveillance cameras, police or security guards, lighting conditions, amenities, urban furniture, commercial shops, connectivity in terms of public transportation, and general traffic patterns. Since each reference point had observations made at four different times, the observation values were averaged first and then classified into five main factors to be evaluated against other reference points.

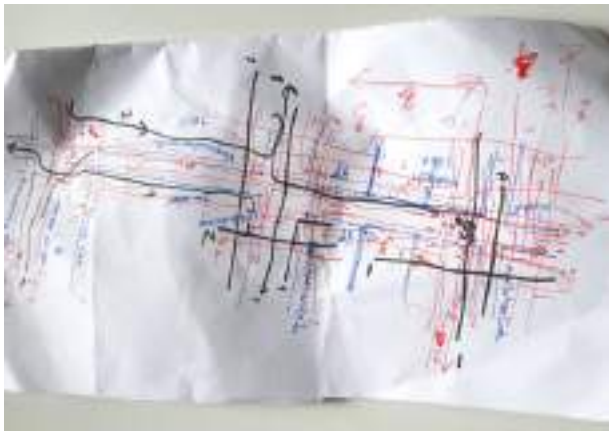


Figure 145. Sketch and counts during site analysis stage. Source: Rattanakijanant, 2020

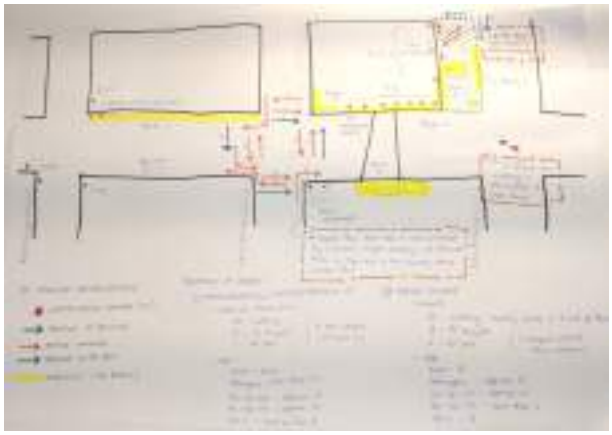


Figure 146. Sketch and counts during site analysis stage. Source: Valdez, 2020

FIVE FACTORS

The field observations were then classified into the following five factors:

Factor	Description	Day Weight	Night Weight
Presence of People	includes not only the number and type of people but also the occurrence of police/security guards	30	25
Light	evaluated differently during day/night conditions, as in night it referred to artificial lighting through streetlights and during the day how exposed the area was to sunlight	10	25
Design/ Field of View	involved the general design in terms of a sense of safety as well as how much exposure a certain location possesses if a crime was to take place (for instance a narrow alley will score low whereas a busy open main street will score high)	20	20
Comfort	incorporated the availability of street furniture, services, and amenities around the reference point	20	15
Connectivity	was the final factor that included the general orientation of the location as well as the proximity to public transportation	20	15

Table 24. Five factors and their weights (day and night). Source: Popal, 2020.

Once the observations were classified into the five factors, they were compared relative to each other. The presence of people and connectivity factors were evaluated mostly based on observation values obtained during fieldwork. The counts and type of people and their respective movements for the presence of people factor and the distance to the closest bus stop and orientation for the connectivity factor. For light, design, and comfort factors, the observations were compared relative to each reference point and given a safety score. The safety score ranged from 1 (lowest) to 10 (highest). The scores were then normalized using the max-min formula to first have all the factors in a common scale in order to properly be compared and to maximize the differences in the observer defined safety ratings for the factors that did not utilize the full range (light, design, and comfort).

The factors contribute differently to a sense of safety during day and night and their weights (out of 100) are shown in Table 24. For example, the presence of people is an important factor in both day and nighttime, but light is far more important at nighttime than in daytime in terms of safety. The weights were averaged from the values specified by all three members of the group.

DAYTIME ANALYSIS

RP	Presence of People (count)					Light (score)		Design/ Field of View (score)		Comfort		Connectivity (proximity to public transportation)	
	P	*PW*	*C*	*O*	*N*	*V*	*N*	*V*	*N*	*V*	*N*	*V*	*N*
1	22	5	60	87	5	0	10	7	10	8	10	10	10
2	15	1	40	56	3	0	10	5	6	5	5	10	10
3	36	6	100	142	10	0	1-	6	8	8	10	8	7
4	4	0	60	64	3	-5	0	2	0	2	0	5	3
5	5	-3	40	42	1	-2	4	3	2	5	5	4	1
6	16	4	60	80	5	-2	4	3	2	5	5	6	4
7	13	-6	20	27	0	0	10	3	2	2	0	5	3
8	34	4	80	118	8	0	10	4	4	3	2	3	0

Table 25. Daytime score for each factor. Source: Popal, 2020

LEGEND:

RP	Reference Point	C	Car
P	People	O	Overall
PW	People Wildcard	V	Value
N	Normalized		

Table 25 shows reference points and their corresponding normalized daytime score for each of the five factors. The readings were then interpolated spatially to assess general patterns. The suitability maps for each factor can be seen in Figure 147. The suitability maps clearly show a pattern that indicates conditions for all factors decreasing when moving down Vapaudenkatu from left to right and towards Hansa Square with some variation in between. The maps helped visualize the observations in space throughout the area for each factor and the results were incorporated in the redevelopment design recommendations.

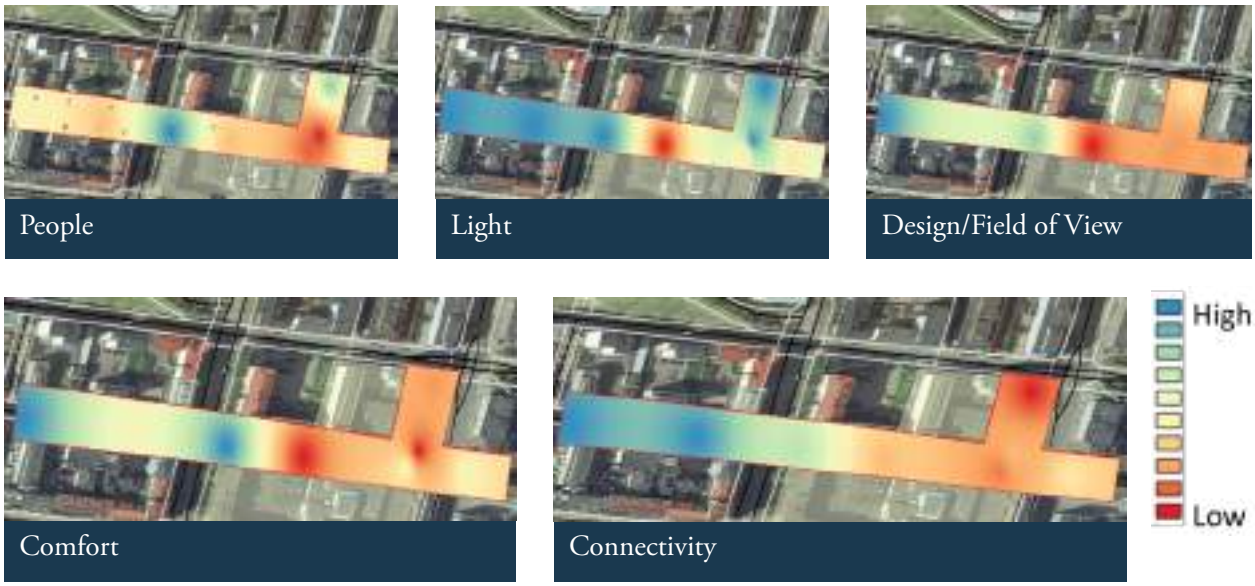


Figure 147. Suitability maps for each factor (daytime) using ArcGIS. Source: Popal, 2020.

NIGHTTIME ANALYSIS

RP	Presence of People (count)					Light (score)		Design/ Field of View (score)		Comfort		Connectivity (proximity to public transportation)	
	P	*PW*	*C*	*O*	*N*	*V*	*N*	*V*	*N*	*V*	*N*	*V*	*N*
1	8	1	7	16	10	8	8	9	10	8	10	10	10
2	3	0	11	14	9	8	8	9	10	7	8	10	10
3	2	-2	2	2	1	3	1	6	6	6	7	9	8
4	0	0	1	1	0	10	10	2	0	2	0	5	0
5	3	0	5	8	5	5	4	5	4	5	5	6	2
6	1	0	2	3	1	3	1	5	4	4	3	6	2
7	2	0	2	4	2	2	0	4	3	3	2	6	2
8	0	0	2	2	1	2	0	4	3	2	0	7	4

Table 26. Nighttime score for each factor. Source: Popal, 2020

LEGEND:

RP	Reference Point	C	Car
P	People	O	Overall
PW	People Wildcard	V	Value
N	Normalized		

Table 26 shows reference points and their corresponding normalized nighttime score for each of the five factors. The suitability maps clearly show a pattern that indicates conditions for all factors similar to daytime conditions, decreasing when moving down Vapaudenkatu from left to right and towards Hansa Square with some variation in between.

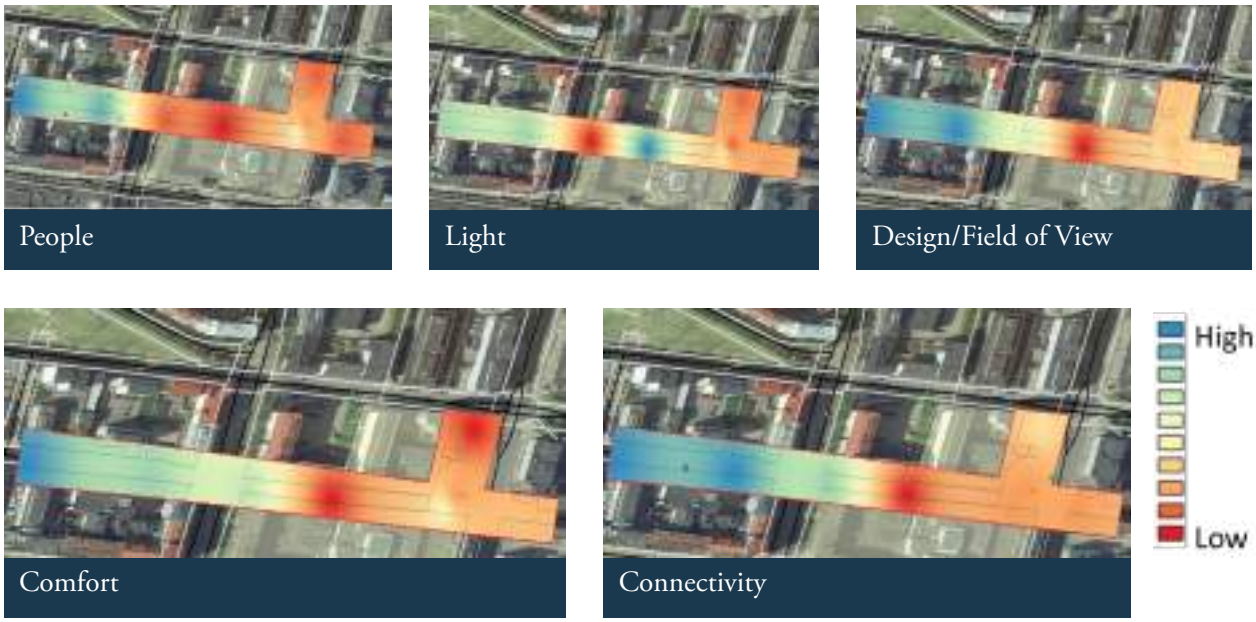


Figure 148. Suitability maps for each factor (nighttime) using ArcGIS. Source: Popal, 2020.

COMBINED SUITABILITY MAP

Figures 149 and 150 show the day and night time suitability map when combining the five factors together using the weights specified in Table 24. Both maps display a pattern that shows safety decreases as you move from left to right along Vapaudenkatu and low overall safety score at Hansa Square. The maps clearly show that the area to the left of the Trio tunnel and Hansa Square require the most urgent measures. The analysis was incorporated in our redevelopment plans as well as the phase plan, targeting the areas suffering from the highest insecurity in our area of study.

DAY

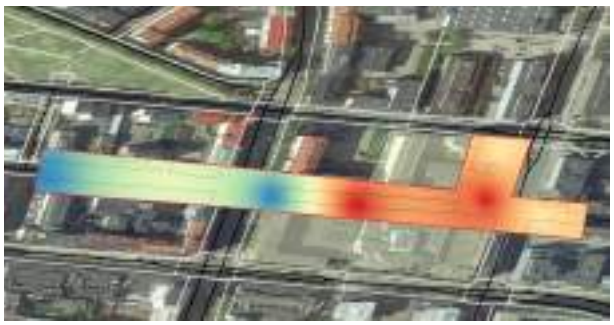


Figure 149. Combined Suitability Map (ArcGIS). Source: Popal, 2020.

NIGHT

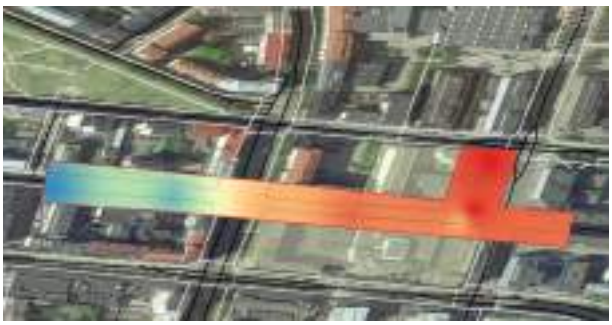


Figure 150. Combined Suitability Map (ArcGIS). Source: Popal, 2020.

5.4.6. SWOT Analysis

STRENGTHS	WEAKNESS
Hansa Square • Central location • Surrounded with big malls and supermarkets • Empty and large pace • Plenty of surveillance cameras **Vapaudenkatu** • Initial town planning offers basic infrastructures (bike lanes, street lights, wide walkways, public transportation, street trees) • Wide street for improvements • Plenty of commercial activities around • Bars attracts activities during night time	**Hansa Square** • Underused spaces and not well maintained • No identity and unattractive design • Underlit at night time • Illegal parking • Public transport disconnection • Dominated by hardscape **Vapaudenkatu** • Presence of vandalism and unwanted behaviors • Limited traffic signals and signs for special-abled people • Dominated by vehicles • Back of house condition, 24hrs underlit, narrow walkway and few passersby beneath Trio's bridge • Most unsafe place by analysis and maptionnaire • Unclear territories for pedestrian, bikes, vehicles • Unwelcoming commercial stores
OPPORTUNITIES	**THREATS**
• Lahti "European Green Capital 2021" • Lahti 'Foreseen Cycling Network in The City Centre 2020' • Seasonal variation offers variation for environmental design and seasonal events • Constant passerby during day time • Adjacent to pedestrian street and market square	• Weather • Perception of "security" in the citizens • Presence of unwanted activities • Seasonal variation (affect greeneries, outdoor activities)

Table 27. SWOT Analysis. Source: Rattanakijanant, 2020, Adated from Project for Public Spaces, 2012.

5.4.7. Other Methods of Site Analysis

TYPICAL TRAFFIC USING GOOGLE MAPS DATA

Friday 6:00 | Friday 14:00 | Friday 22:00

Saturday 6:00 | Saturday 14:15 | Saturday 22:00

Figure 151. Typical traffic during weekdays and weekend. Source: Google Maps, n.d.

The traffic in Kauppakatu, which is the street parallel to Hansa Square, is mostly medium-low during weekdays and weekends (Friday and Saturday). There are some instances that low traffic occurs especially on mornings (starting 6:00) and evenings (starting 22:00).

During the whole day, Vapaudenkatu presents a medium-low traffic during weekdays. While on weekend mornings, there is no traffic in the said street. However, it slowly goes from low to medium-low traffic starting at 14:15 onwards.

COMMERCIAL ACTIVITIES AND OPENING TO CLOSURE HOURS

Figure 152. Commercial activities and opening-closure hours. Source: Rattanakijanant, 2020. Adapted from Google Maps, n.d.

The areas present in Figure 152 are mostly commercial use, most of these buildings have commercial activities also in their street-level. According to Google Maps, Trio and Lidl have the longest opening hours on working days (8:00 to 21:00), while all the bars hours are varied. It is also observed that Scandic Hotel is open 24 hours, however, some amenities were closed during field observation despite indicated otherwise in Google Maps (Lahden Grilli, Finnkino Kuapalats Theater, etc.) This might be due to the rare occasion of Coronavirus situation.

5.4.8. Improvement Strategies

As the human factor is most important concerning safety in town planning, a key point in improving the neighborhood is strengthening the connection between people and space they shared. The strategy for the improvement of Vapaudenkatu and Hansa Square is categorized into four aspects of placemaking (Project for Public Spaces, 2012). Each aspect was then interpreted into physical attributes.

SOCIABILITY

Incorporated presence of people factor, the sociability will target a friendly and diverse atmosphere. Through spatial design, the spaces will be multi-purpose, encourage evening use, and adjustable to seasonal variation. Considering the police presence factor, more eyes on the streets will coincidentally promote natural surveillance, known as the model which provides the opportunity for street activities while keeping unwanted behaviour/insecurity under observation. Such an ability could be incorporated with existing surveillance cameras. It will give an impression of social trust and security that preferable to constant police presence (Figure 153).

USES AND ACTIVITIES

Represented by the people present and commercial activities factor. The strategy aims to motivate local businesses and developer's incorporation, incentives such as tax benefit could be given. Increase commercial activities will also contribute to the sociability aspect by attracting people's presence. In this aspect, nighttime and lighting were also incorporated to ensure safety during evening use (Figure 154).

ACCESSES AND LINKAGES

Includes good visual connectivity, accessibility from target direction, the distinguishable public from private areas, and clearly defined pedestrian from vehicles route with a structure such as sidewalks, softscape, hardscape, and demarcations. To find optimal locations, applied here is connectivity value, i.e., proximity to public transportation and orientation, as well as Lahti 'Foreseen Cycling Network in The City Centre 2020' (Figure 155).

SOCIABILITY

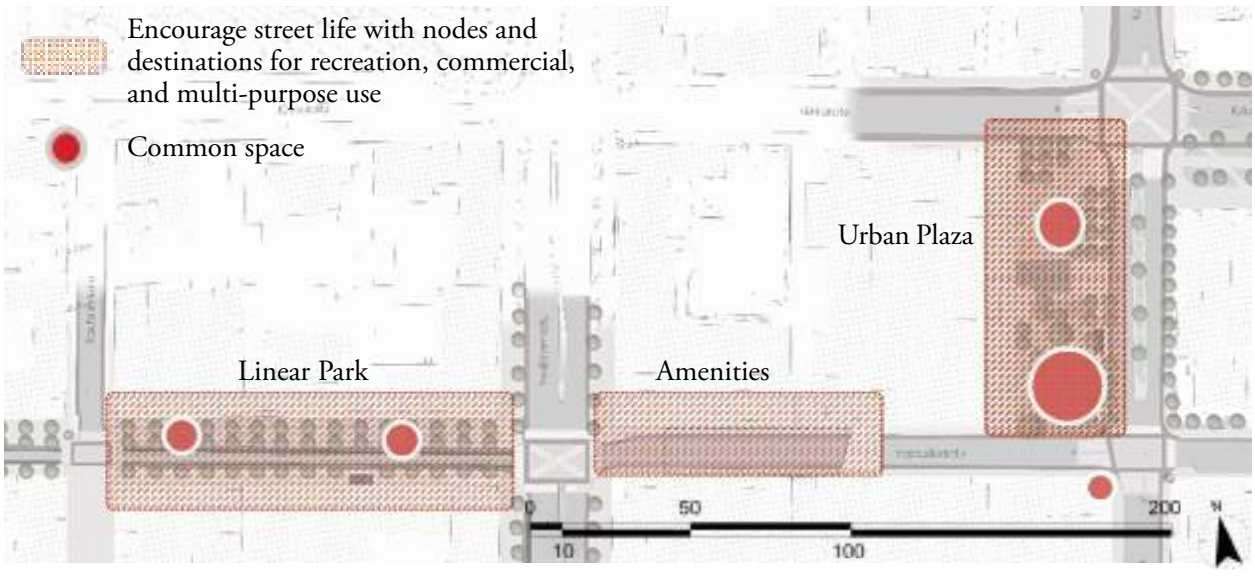


Figure 153. Sociability aspect of Place Making strategy. Source: Rattanakijanant, 2020; Adapted from Lahti Base Map, City of Lahti

USES AND ACTIVITIES

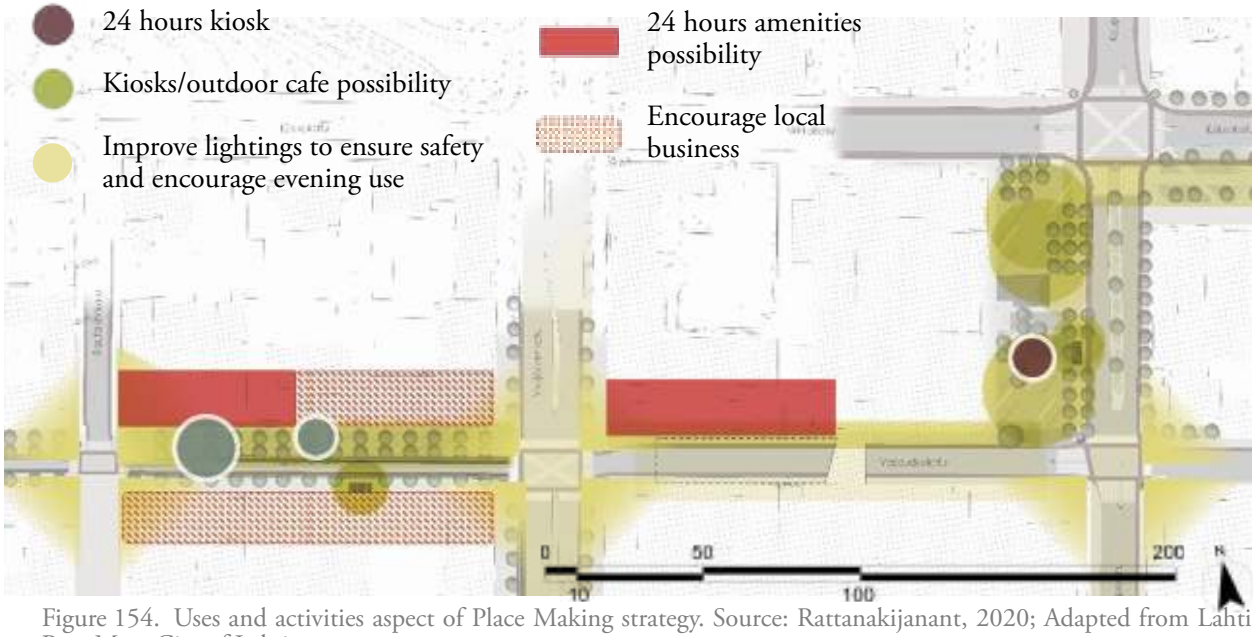


Figure 154. Uses and activities aspect of Place Making strategy. Source: Rattanakijanant, 2020; Adapted from Lahti Base Map, City of Lahti.

ACCESSES AND LINKAGES

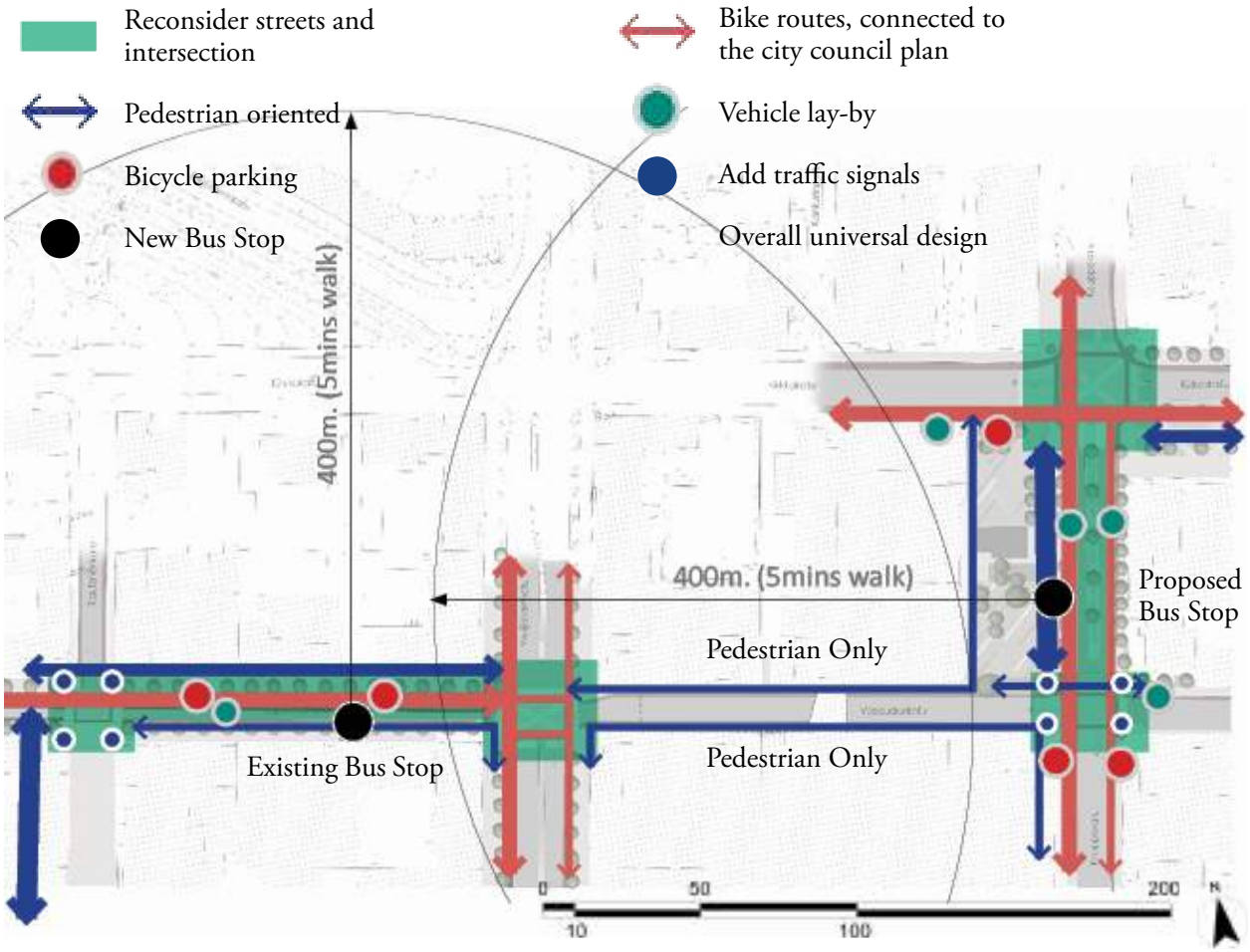


Figure 155. Accesses and linkages aspect of Place Making strategy. Source: Rattanakijanant, 2020; Adapted from Lahti Base Map, City of Lahti

COMFORT AND IMAGE

Comfort and image were incorporated through design and comfort factor which include amenities, furniture, and cleanliness of the areas. The key improvement is an urban renovation that reflects social values, encourages creativity, and a good reputation through design competition or young designers. Routine maintenance is also recommended (Figure 156).

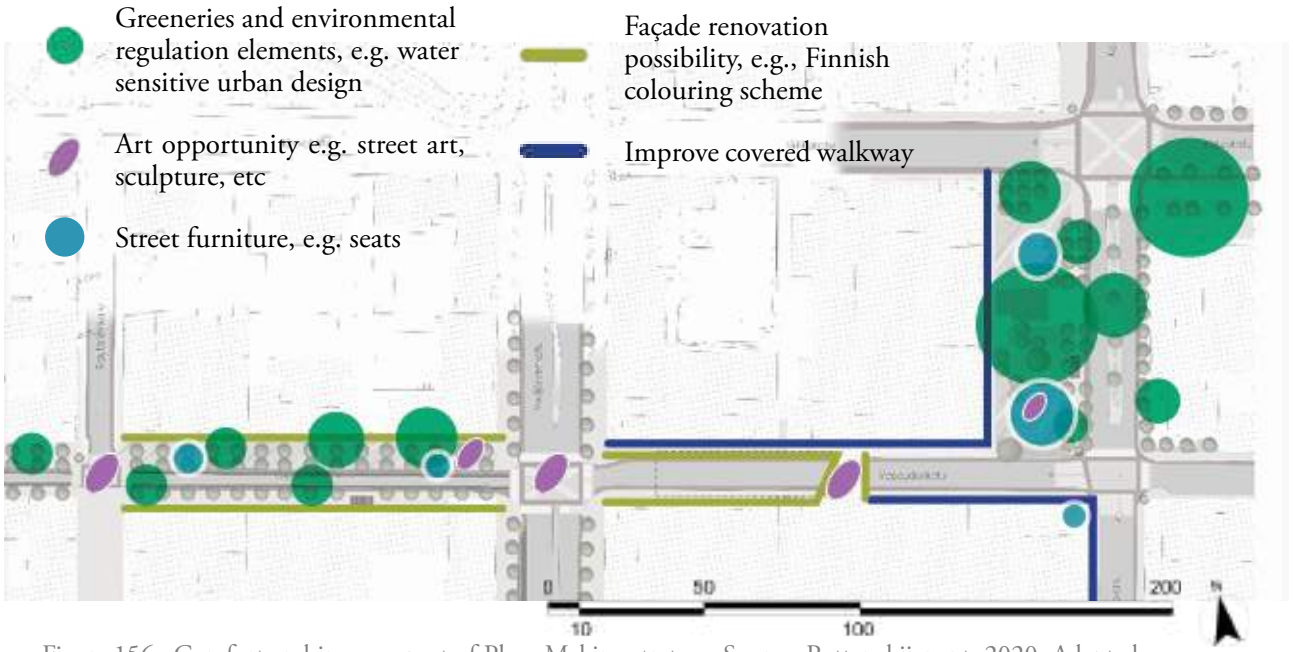


Figure 156. Comfort and image aspect of Place Making strategy. Source: Rattanakijanant, 2020; Adapted from Lahti Base Map, City of Lahti

5.4.9. Concept Layout for the Proposed Improvements

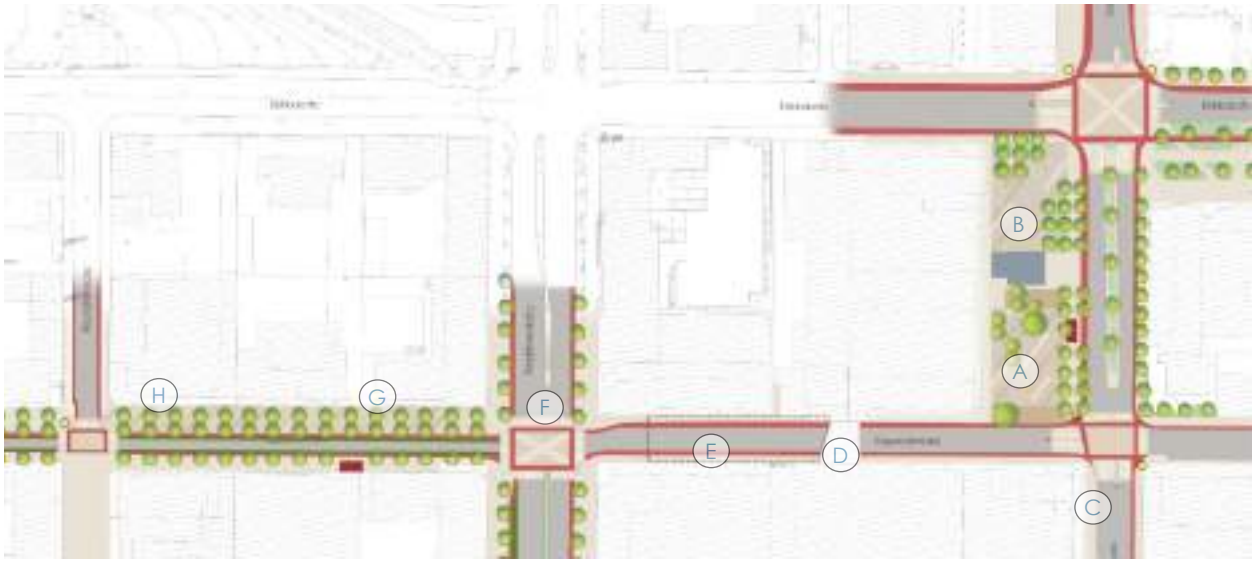


Figure 157. Concept Layout for the Proposed Improvements. Source: Valdez, 2020; Adapted from Lahti Base Map, City of Lahti

A	Hansa Square	E	Vapaudenkatu (Trio)
B	Hansa Square (Mall Entrance)	F	Vapaudenkatu (Intersection crosswalk)
C	Kauppakatu	G	Vapaudenkatu
D	Vapaudenkatu Underpass	H	Vapaudenkatu (Rautatienkatu intersection)

5.4.10. Proposals for Improvement

HANSA SQUARE

Figure 158. (L to R) Hansa Square; unconcealed mall interior; al fresco dining; example of movable furniture; exhibition/event in public space. Source: Valdez, 2020; Zhu, 2019; That's Shanghai, 2019; Zeitoun, 2017; Picture Paste, 2020.

According to Figures 35 and 36, some respondents believe that the Hansa Square is unsafe and that it needs more police presence. This is due to the fact that the area lacks social activity which deters natural surveillance. It is also observed that the area's level of unsafety is high especially during night because of drugs and alcohol, and violent and non-violent acts such as robbery, physical abuse, vandalism, and graffiti.

For point A and B, one improvement strategy that can be done here is to remove the posters in the curtain wall of Trio mall and display the retails instead. The shopping centre is too concealed and removing the posters will hinder the violent and non-violent act both inside and outside the mall. Another is adding function on the balcony like setting-up café and restaurant with outdoor dining area. These two strategies will also attract potential customers that are just walking by in the area. Cooperation between the city planner and the private sector is required to achieve this.

One reason why the level of drugs and alcohol in Hansa Square is high is because of the numerous pub businesses scattered in the vicinity and Lahen Grilli is one of these (point C). Relocating the said area in a more suitable spot is recommendable.

To transform point D into a lively space, it should be converted into a multi-use square. The area is a suitable spot for seasonal activities and temporary exhibitions/arts/events. And for times that there are no events, the area can be occupied by movable street furniture.

Once these improvements are attained, a bus stop and information signages are necessary to increase accessibility.

HANSA SQUARE (MALL ENTRANCE)

Figure 159. (L to R) Trio entrance; embedded interactive light; street furniture for social gathering; bicycle rack. Source: Valdez, 2020; Lab D+H, n.d; Sweco, n.d; Swerve Rack, 2019.

Although not mentioned in the Maptionnaire 2020, the Trio mall entrance looks uninviting based on the analysis of the group, and this may be the reason why the presence of people is low. One respondent also thinks that a proper lighting is necessary in this area. Revamping the walkway leading to Trio, such as adding embedded interactive lights, outdoor seating area, and more greeneries, is a key feature to make the area more useable to the public.

Currently, the bicycle parking is situated in two separate areas, one beside the parking ramp and another along Kirkkokatu. Locating this in one designated spot (point C) will make it more organized.

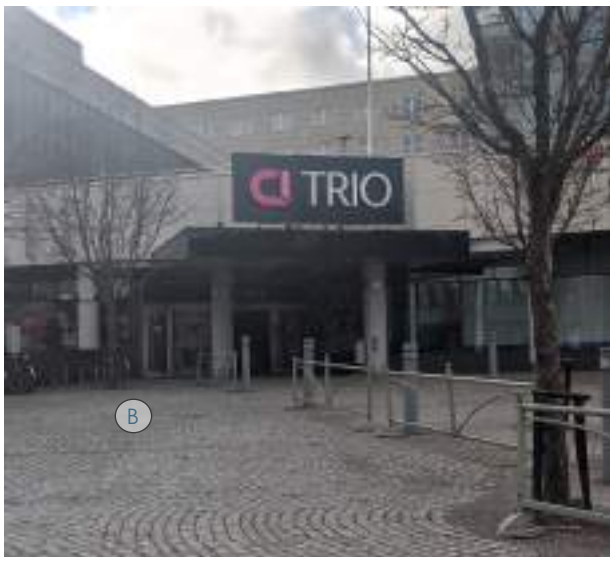


Figure 160. Trio entrance. Source: Valdez, 2020

KAUPPAKATU

The general public feels uncomfortable cycling and walking on Kauppakatu and intersection as they are cars-oriented (point A, B). While the walkway in front of Trio is narrow, it is an unsafe and unsuitable meeting area (point C). Considering the traffic flow, one of the street lanes is reclaimed for a green corridor to reduce bare road surface, add traffic light, re-design the intersection for safer crossing and create a clear entrance to Lidl and Trio. To counter illegal parking, the reclaimed street concept can be incorporated with lay-by design.

Existing

Proposal

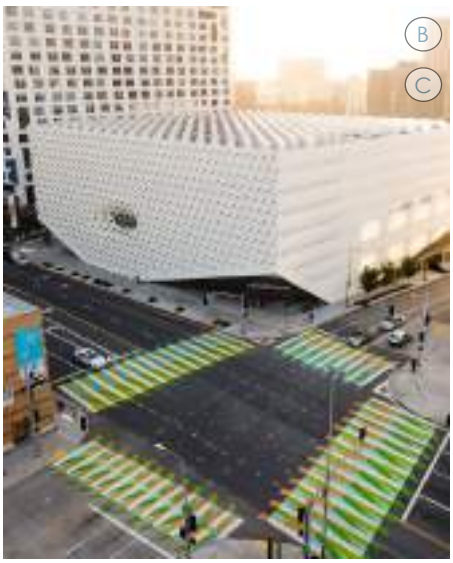


Figure 161. (L to R) Kauppakatu; pedestrian oriented street; traffic island as green corridor; intersection and building entrance reconsideration. Source: Google Map, 2017; Rattanakijanant,2010, Adapted from ZAC des Bayonnes, 2010; Claude Cormier + Associés, 2015, Diller Scofidio + Renfro, 2015.

VAPAUDENKATU UNDERPASS

The underpass area is a cross-circulation of services vehicles and pedestrians (point A). The darkness encourages unwanted behavior (Table 15). The general public (Figure 33) views it as the most unsafe spot in need of illumination. First priority would be incorporating safety measures such as speed bump, crosswalk demarcations, disabled signal against car accident, and also LED lighting.

Figure 162. (L to R) Vapaudenkatu (under Trio's bridge); braille signal; speed bump; lively and covered walkway with LED light. Source: Valdez, 2020; Vabizzuno, n.d; Noe, 2016; Pinterest, 2019.

VAPAUDENKATU (TRIO)

This section of Vaupaudenkatu is the most unpleasant area from analyses (Figure 149 and Figure 150), and referring to general public opinion – it is unsafe, in need of commercial activities, and police presence. The heights, darkness, and narrowness of the street invoke anxiety. And even during daytimes, the area still looks so dark. The covered walkway, however, provides shelter.

The proposal includes a façade renovation that would make good visibility from inside-out and outside-in and to attract more local business. This include covering the exposed service area (point D) with interactive advertisement or climbers (planting). Parking will also be prohibited. The bridge is noticeable from afar, and with Trio cooperation, altering the bridge would be an opportunity to make it into a landmark and at the same time, illuminating the area. The improvements aim to encourage people presence which coincidentally stimulate natural surveillance model.

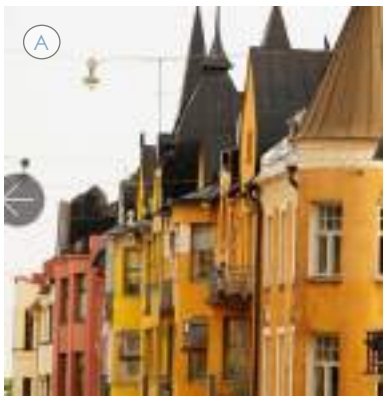


Figure 163. (L to R) Kauppakatu (Trio); iconic Finnish colouring scheme; climber possibility; creative/interactive advertisement possibility; add 24hrs amenities, signage, and atmosphere; bridge as landmark and illumination; lighting under the bridge. Source: Valdez, 2020; Viator, n.d; Plandscape, 2019; Ashmore, 2016; alarmi, 2008; Sheppard Robson, 2017; Robson, 2016

VAPAUDENKATU (INTERSECTION CROSSWALK)

The main crosswalk here has constant passerby. However, it has several inefficiencies such as reaching the diagonal location requires time, ramps are in bad condition, and the street is wide. A new intersection crosswalk is proposed (point A) to allow multi-direction crossing (point A), as well as ramps improvement, enlarge crossing space to accommodate wheelchairs (point A). Vehicles, bikes, and pedestrian routes will be defined by floor demarcation. In addition to existing street lightings, corner buildings (point B) should be emphasized to orient people during the nighttime with elements like façade lighting or unique illuminations.

Figure 164. (L to R) Vapaudenkatu (intersection crosswalk); corners design and distinguishable pedestrian and cycle path; multi-direction crosswalk; corner lighting. Source: Google Map, 2017; Fried, 2008; Clay, 2014; Pinterest, n.d.

VAPAUDENKATU

The Vapuadenkatu in public opinion (Figure 32) is generally safe except for the bus stop area, due to lack of waiting area that could be rectify with a proper bus shelter. The wide and bare street is dominated by cars; however, traffic analysis denoted no congestion. Initial town planning offers basic infrastructures (street lights, wide walkways, public transportation, and street trees). Despite that Vapaudenkatu have not been included in the city's cycle planning, the location shows potential as such. Also, the street has plenty of spaces to implement a linear park. One street lane is reclaimed for pedestrian. Then defined clearly boundaries for vehicles, cycle, pedestrian, ecosystem and water sensitive urban design, multipurpose area, and transitional entrance to stores.

Existing

Proposal

Figure 165. (L to R) Vapaudenkatu; pedestrian oriented model; linear park possibility; art installation in common space, seasonal activities. Source: Rattanakijanant, 2020; Rattanakijanant, 2020, Adapted from ZAC des Bayonnes, 2010; Barcelona., n.d; Pinterest, n.d.; Mortice, n.d.; Davies, 2016.

VAPAUDENKATU (RAUTATIENKATU CROSSWALK)

The main issues are underused space and having uninviting stores due to lack of signs and displays. Existing bars attract evening activities; however, the general public feels the need for police presence. The area is a central location, connected to Rautatienkatu (defined pedestrian street), and leading to the market square, the location has the opportunity to continue the social value as pedestrian-friendly and interactive vibes. Safety could be incorporated by attracting people's presence. Activities such as outdoor café, events, art installation, and decorations are recommended. The existing local business incorporation is significant to promote such an atmosphere.

Existing

Proposal

Figure 166. (L to R) Vapaudenkatu; streetscape as common space; lively outdoor amenities/ al fresco dining; events; pedestrian oriented. Source: Valdez, 2020; Rattanakijanant, 2020, Adapted from ZAC des Bayonnes, 2010 & Xiong, 2012; Urban Habitat., n.d; Pinterest, n.d; Gramazio, 2014.

5.4.11. Concept Sketch for the Proposed Improvements

HANSA SQUARE AND VAPAUDENKATU UNDERPASS

Figure 167. Conceptual sketch of Hansa Square along Kauppakatu. Source: Valdez & Rattanakijanant, 2020, element adapted from DeSimone, 2017.

A	Landmark bridge	D	Visible bicycle lane	G	24 hour kiosk
B	Facade colouring	E	Multi-use public square	H	Bus stop for accessibility
C	24/7 LED lighting	F	Information signage		

TRIO ENTRANCE WALKWAY

Figure 168. Conceptual sketch of Hansa Square along Kauppakatu. Source: Valdez & Rattanakijanant, 2020.

A	Green and walkable traffic island	F	Movable seating area
B	Underground parking beautification	G	Redesigned walkway with embedded light
C	Al Fresco dining	H	Redesigned intersection with strong axis
D	Permanent street furniture	I	Designated bicycle parking area
E	Unconcealed interior of shopping centre	J	Cycle lanes connected to city's main path

VAPAUDENKATU CORNER VESIJARVENKATU

Figure 169. Conceptual sketch of Hansa Square along Kauppakatu. Source: Valdez & Rattanakijanant, 2020.

A	Multi-direction intersection	G	Cycle lanes connected to city's main path
B	Temporary interactive art	H	Corners lighting
C	Covered walkway	I	Linear park
D	Facade recolouring	J	Water sensitive urban design
E	Reclaimed street for pedestrian oriented model	K	Widen and ramping crossing space
F	Smart cycle lane		

5.4.12. Phasing for Improvements

To avoid disruption of everyday life in the city centre, the implementation will have to be prioritized by the safety value from suitability map (Figure 149 and Figure 150) and Maptionnaire 2020 (Figure 32), each hotspots are considered as follows (see Figure 171 for exact locations);

PHASE 1

Vapaudenkatu (Trio):

First priority, as both suitability map (Figure 149 and Figure 150) and Maptionnaire 2020 (Figure 32) identified it the most insecure spot.

Design experiment:

A method to evaluate public satisfaction and design efficiency of the ideas. To solve immediate issues, the design experiments can be implemented in a short time comparing to the full construction in form of

the temporary installation, such as a pop-up playground, street mock-up, Sunday farmer market, etc. (see Figure 170 for example). This could also be included as a feasibility measure method.

Kauppakatu sidewalk:

The street is defined as 'a high-quality cycling path' in Lahti's plan. Said networking plan ensures the development feasibility of the side path and could be kicked-off immediately with the city council plan to ensure the safety for Lahti city centre in general.

PHASE 2

Trial for proposed traffic system:

The designated traffic system (i.e., new crosswalks, bus stop, and traffic signals) will affect the bus schedule and traffic system in general. The efficiency of the proposed system needs to be tested and evaluated by the public. This process will require some period for the public to adjust.

Hansa Square:

Denoted unsafe spot as per the analysis. Hansa Square situation is not as troublesome as Vapaudenkatu (Trio) but should be given priority because its size and location in the center could impact how people perceive Lahti image of the city.

Figure 170. Project Harbour Public Bath, an example for experimental design . Source: Urban Agency, 2014.

PHASE 3: KAUPPAKATU

Seemingly, Kauppakatu received a moderate safety score. But to improve overall safety around Hansa Square section, the street is considered a third priority.

PHASE 4: VAPAUDENKATU

Plenty of people deemed the street a safe area despite the several issues as listed above in the problem section. Immediate attention is not as strong. To be in the last stage, the evaluation from the previous phase can be applied.

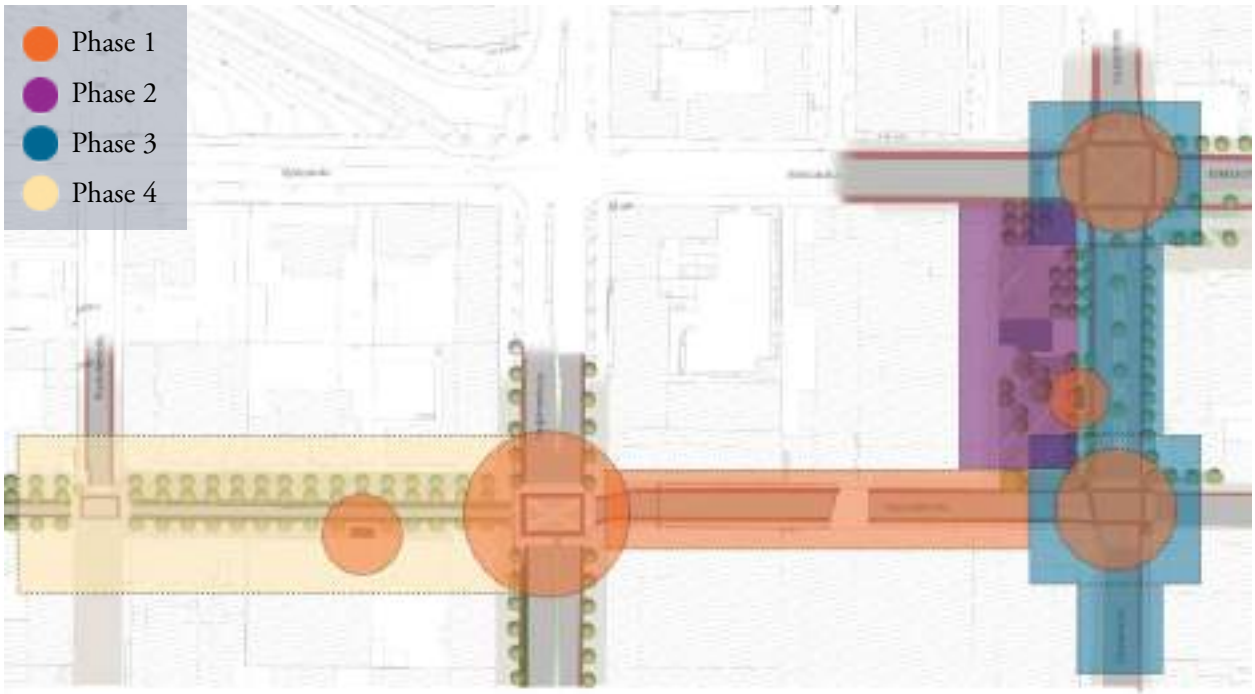


Figure 171. Phasing for improvement. Source: Rattanakijanant, 2020, Adapted from Lahti Base Map, City of Lahti, n.d.

CONCLUSION

Despite the overall Finnish first-ranked security, it still faces safety issues. The perception of safety is relative and subjective, and it will depend on each person. Nevertheless, there are tangible strategies that can improve the safety perception such as quality of built environment and infrastructure, administration and functionality of the place. The objective of these improvements is revitalizing the site by the visiting of the citizens.

To improve safety in a place is vital to have the participation of different stakeholders. Hence, this report took into consideration the involvement of Lahti's citizens, following the track that regularly Lahti City Council takes during the planning and design processes.

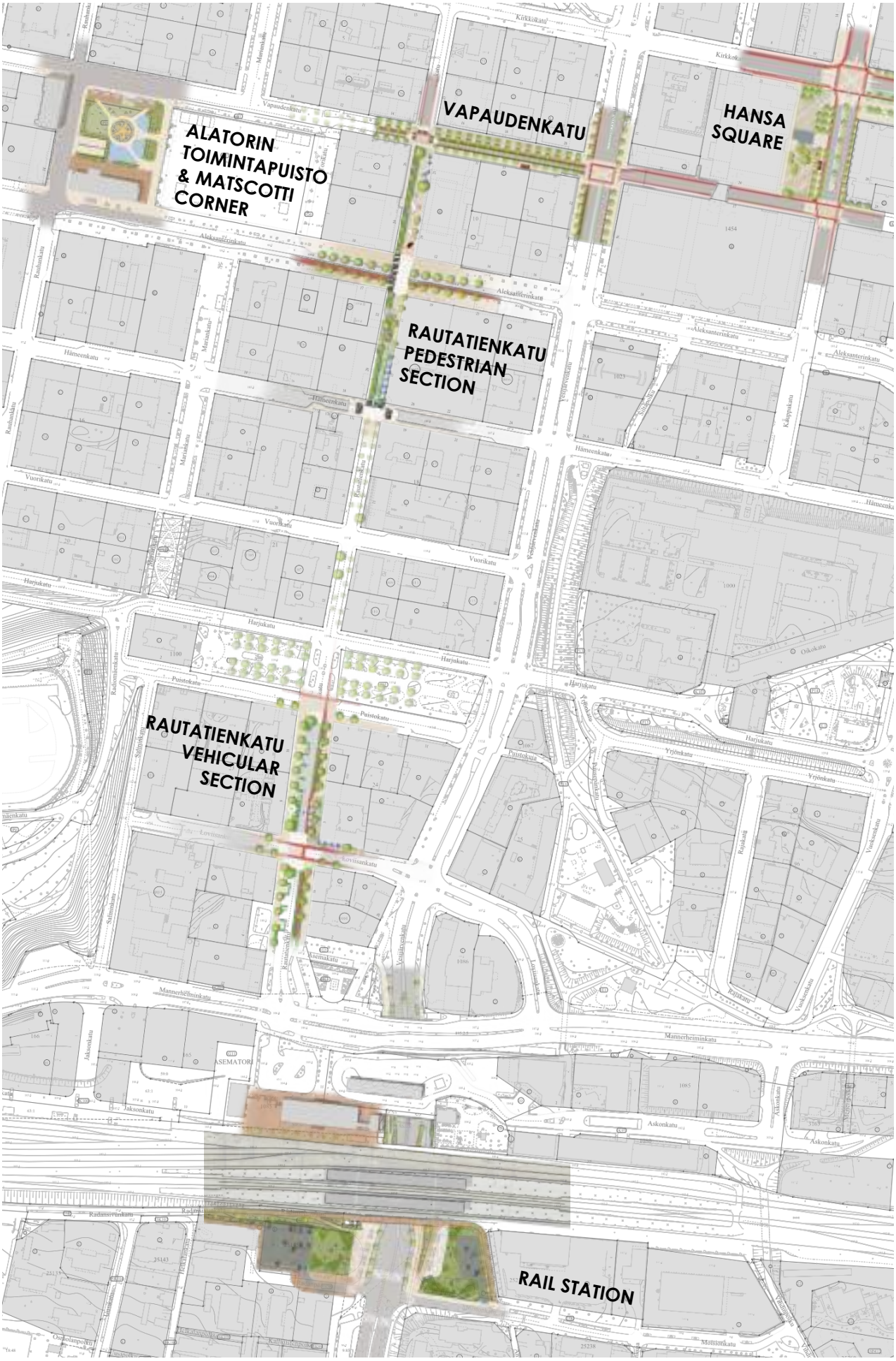
The online survey method was a powerful tool to allow the public to share their safety perception in the city, not only detecting safe and unsafe areas but also to express the reason of why they picked those places. The results are aligned with the initial framework; they showed how activities and the built environment could influence the safety perception of a site.

The survey's outputs were beneficial during the analysis and the proposals. It also shows a different way of applying effective community participation in crisis cases like the current COVID-19. This survey is considered as a pilot study to be used in a more extensive research in the future.

Moreover, the previous and new surveys detected five hotspots of Lahti City Centre. Altori , Rail Station, Rautatienkatu, Vaupadenkatu and Hansa Square were thoroughly analyzed to propose improvement plan to enhance the safety and security of these places. All these locations had different challenges that caused a sense of insecurity. Thus, site-specific detailed area plans were proposed to overcome the difficulties of each site and improve the safety and security there. The improvement plans highlighted more greeneries, more public activities and public art, improved amenities & facade renovation, more street furniture and mixed-used areas.

Finally, this report is proof of how even the most secure city can have improvement opportunities, in this case, in terms of safety. It also shows the high interest of the community in participating *Towards a safer Lahti*.

Figure 172. (pp.138-139)Lahti Landsape. Source: Saloma, 2020.
Figure 173. (right) City Centre Masterplan. Source: Keya, Saloma, Rattanakijanant, & Valdez, 2020.


ALATORIN TOIMINTAPUISTO & MATSCOTTI CORNER
VAPAUDENKATU
HANSA SQUARE
RAUTATIENKATU PEDESTRIAN SECTION
RAUTATIENKATU VEHICULAR SECTION
RAIL STATION
0
50
200
10
100

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MEET THE TEAM

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GeoGeek,
GIS Analyst,
Data Scientist
and
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”

Contributon :

- Chapter 2 : case study of Ottawa
- Chapter 4: creating the maptionnaire survey design and layout, data analysis ,cartographic products
- Chapter 5: data analysis methodology, data interpretation, cartographic products

Aira Valdez

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Aira worked as an architect in the Philippines for four years before taking her master's degree in Europe. She graduated cum laude from the University of Santo Tomas with a bachelor's degree in Architecture in 2015. She believes that there should be a proper balance between built and natural environment to provide a much more livable place without disrupting mother nature and the people's way of living.

Contributon :

- Chapter 2 : case study of Bonifacio
- Chapter 5: Hansa Square and Vapaudenkatu site analysis, improvement strategies, and proposals
- Chapter 5: Proposal sketches and masterplan
- Edition and graphic design for final report.

Mikaela
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Mikaela Lindfors works as a sales and logistic coordinator in a Finnish design company and is currently completing her master's degree in Urban Sustainability. She has a bachelor's degree in Business Administration, focus on fashion and retail, and Hospitality Management. She lives in Helsinki with her boyfriend and two dogs. In her spare time, she wanders at flea markets and designs earrings.

Contributon :
- » Chapter 1: Theoretical framework of safety and security
- » Chapter 2 : case study of Jyväskylä
- » Chapter 5: Background of the studies 2017 and 2018

Milagros
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Milagros is a Peruvian-Mexican architect with 5 years of work experience in different areas like Airport Design, HVAC, and Renewable Energy Projects. Throughout her professional life, she identified the lack of environmental considerations in architecture and urbanism. That is why currently, she is completing her master's degree in Urban Climate and Sustainability (MUrCS).

Contributon :
- » Introduction.
- » Chapter 2 : case study of Mexico City.
- » Chapter 5: Alatorin Toimintapuisto and Rail Station survey, analysis and proposal.
- » Edition and graphic design for the final report.
- » Conclusion

Nichamon
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" I worked as a landscape architect in Bangkok. My 5 years experience mostly focused on integrating aesthetic and ecological design to mixed-use scale projects. I found myself often wonder how to balance the ecosystem and human-oriented design in the urban context. Which driven me to join MUrCS that I hope I could to explore the world along the way!"

Contributon :
- » Chapter 2 : case study of Bangkok and contributed to summarize the case
- » Chapter 5: Hansa Square and Vapaudenkatu site analysis, improvements and proposals
- » Chapter 5: Proposal sketches and masterplan.
- » Edition and graphic design for the final report

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MEET THE TEAM

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Currently studying the second semester of MUrCS program. Completed bachelor in Environmental Science major from Asian University for Women, Chittagong, Bangladesh. Worked as Sustainability Developer (Environment) for 4 years at an international corporate company based in Dhaka, Bangladesh.

Contributon :

- Chapter 2 : case study of Uttara and contributed to summarize the case studies for the report
- Chapter 5: Rautatienkatu area analysis and development proposal
- Conclusion
- Edition and graphic design for final report.

Sara Vilander

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Sara Vilander,
Barchelor of
landscape design
and construction,
Hamk, Finland

”

Contribution :

- Chapter 1: Theoretical framework of safety and security
- Chapter 2 : case study of Porvoo
- Chapter 3 : Backgroud study 2017 & 2018 survey

Shammi Akter
Keya
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An Architect and Lecturer in the Architecture Department, Bangladesh. Keen interest in contextual and sustainable development for more resilient urban development against climate change.

Contribution:

- Edition and graphic design for the final report.
- Chapter 2 : Case study of Gorbals.
- Chapter 4: Survey Method design and layout, Data analysis and Formatting the Maptionnaire based questionnaire.
- Chapter 5 : Alatorin Toimintapuisto and Rail Station survey, analysis, proposal and sketches.

Sonam
Dagay
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Worked in the public sector for environmental conservation and protection for over a decade. Currently on study leave to pursue MURCS.

Contribution :

- Chapter 2 : case study of Singapore
- Chapter 5 : Background study of Rautatienkatu site visit and observation

Teemu
Keitaanpaa
teemu.keitaanpaa@hotmail.com

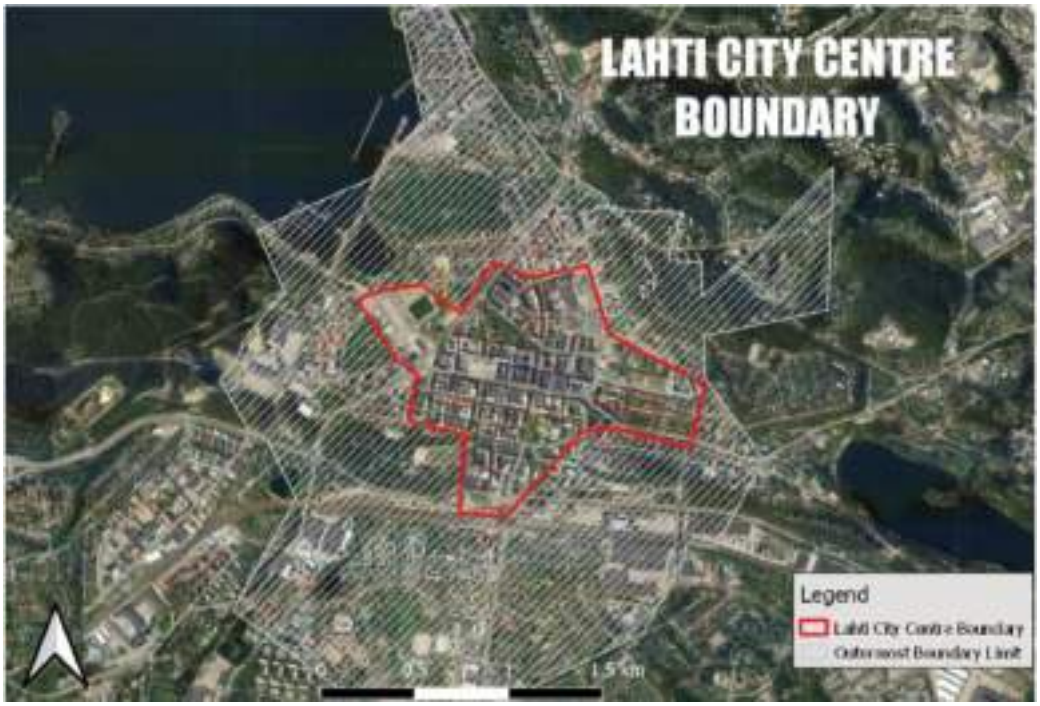
My name is Teemu Keitaanpää and I have worked six years in the field of water management. My job duties have ranged from a surveyor to a project manager. Those years have taught me a lot about climate change preparation, sustainable and far-reaching and practical planning and thinking. My strong desire to learn new things every day and develop into an ever better professional I finally found myself here.

Contribution :

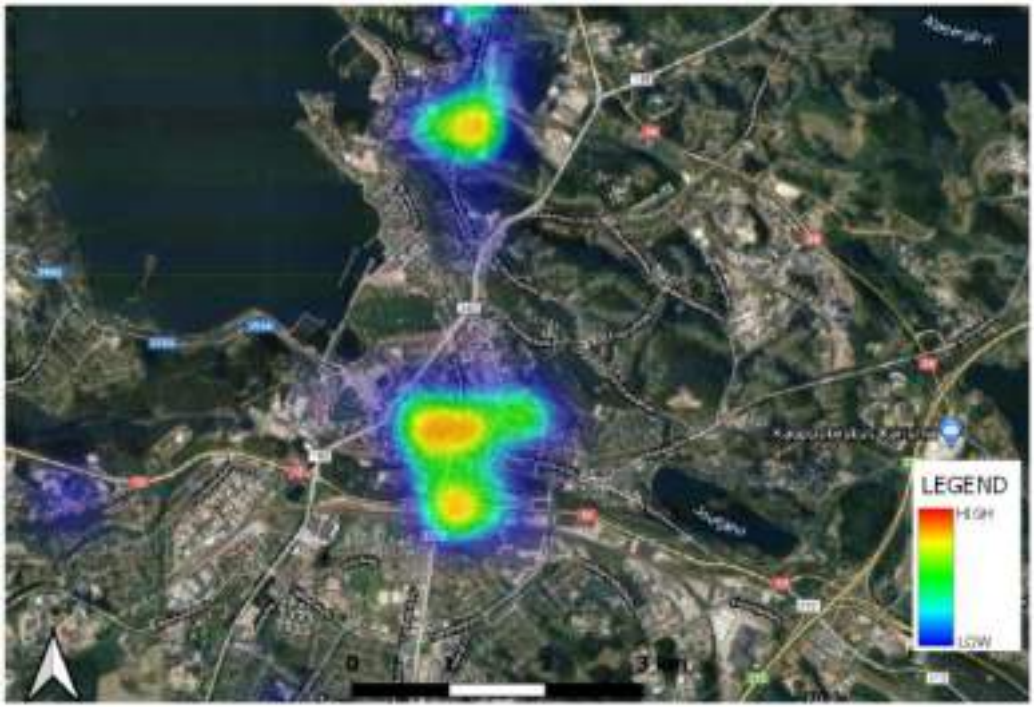
- Chapter 1: Theoretical framework of safety and security
- Chapter 2 : case study of Tikkurila

APPENDIX

Appendix 1: City Center Boundary.

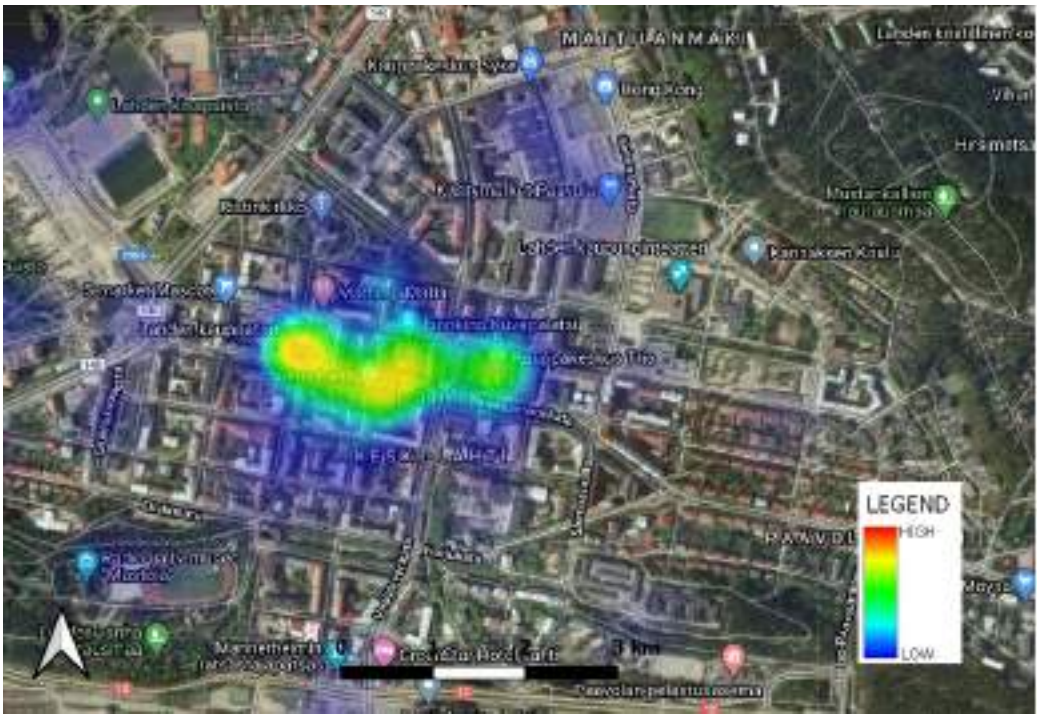


Appendix 2: Workplace of Respondents.



Appendix 3: Residence of Respondents.

Appendix 4: Safe Hotspots



Appendix 5: Unsafe Hotspots

Appendix 6: More lighting Areas

Appendix 7: More Police presence

Appendix 8: Pedestrian Routes

Appendix 9: Data Sheet for field survey

DATA SHEET FOR FIELD WORK
DURATION OF SURVEY- 1 HOUR

Goup N°		**Location**	
Day		**Weather**	
Time		**Temp (C°)**	

Connectivity		Location on Map (Google Maps)
Arterial road		
Secondary roads		
Pedestrian		
Bus stops		
Parking lots		
Bicycle racks		

Urban furniture		Location on Map (Google Maps)
Sitting facilities (shaded)		
Sitting facilities (open)		
Trash bins		
Playground		
Green planters		

Commercial Services		Location on Map (Google Maps)
Total Number of Restaurants, Cafes and Bars		
Total Number of Showrooms, Shopping malls		
Opening Time (Earliest)		
Closing Time (Late)		

Presence of people (observe people during an hour)				Location on Map (Google Maps)
How many?				
Age groups?		Type of visitor		
Children		Alone		
Teenager		With Family		
Adult		With Friends		
Elderly		With Pets		
Gender		Type of visit		
Female		Leisure		
		Work		
Male		Passerby		
How much they stayed? (min)				
0-14		30-44		
15-29		45-60		

Surveillance cameras		Location on Map (Google Maps)
Total Number		
With Signage		
Without Signage		
Broken		

Streetlights		Location on Map (Google Maps)
Total Number		
Types		
Broken		
Dark locations (If any)		

Street signals		Location on Map (Google Maps)
Total Number of Signals in the area		
Total number of signals with sound		

Police or security guards		Location on Map (Google Maps)
Total Number of Police		
Total Number of Security Guards		

Facilities for differently-abled people		Location on Map (Google Maps)
Number of Ramps		
3d Maps for direction		
Braille language signals		