

Experimentation evaluation toolkit

How to choose metrics and tools to evaluate living labs and experiments in public space.

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A TOOLKIT FOR EXPERIMENTS

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- Urban metrics

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- Introduction to 20 metrics and how to use them

Case: Ylä-Malmi

- Presenting the analysis from the case study

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Introduction

How to evaluate placemaking experiments in public space

There is an increasing amount of quick experiments happening in the city space. Experiments are used in working together with residents, companies and other stakeholders.

Learning plays an important role in experimenting, and in order to capture new insights and evaluate the impact of experimenting, the experiments should be tracked in different ways.

What kind of data to gather depends on the objectives of the experiment. The word *data* is often interpreted as inherently digital or numerical, but data can also be qualitative. Often the best insights can be achieved by combining quantitative and qualitative data.

The aim of this toolkit

The aim of this toolkit is to help people, who conduct experiments in urban environments, to choose which metrics to track and which tools to use for gathering data.

In this toolkit you will find description of the general method of gathering user information in experiments conducted in urban environments. The toolkit does not provide step by step instructions for experiment facilitators, but presents different types of evaluation metrics for experiments and tools to track them with.

How this toolkit has been created

Forum Virium Helsinki has ordered this toolkit to support the development of better understanding of the effects of placemaking experiments in city space.

The toolkit is applicable to different experiments. It has been created based on background research of SPIN Unit and tested in a Placemaking experiment in Ylä-Malmi square in Helsinki.

As a part of fine tuning this toolkit Milton has conducted interviews with people who work with experiments in different roles. Thank you all interviewees for sharing your knowledge and experiences!

This report is divided into three sections

- Methodology
- Toolkit
- Analysis from Ylä-Malmi case study

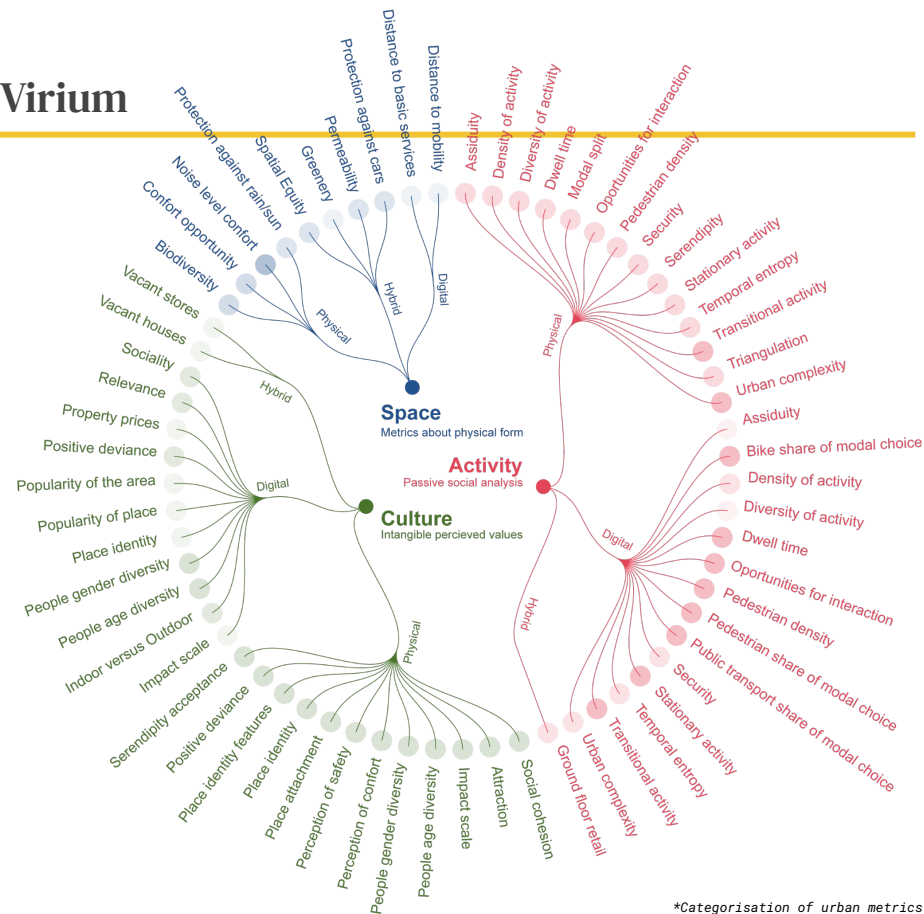
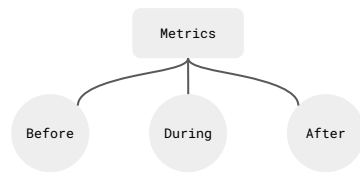
Methodology

Urban metrics

Selecting relevant metrics for Forum Virium

From an initial list of over 100 metrics, we have pre-selected 48 metrics that are meaningful to evaluate an experiment in public space. For the aims of this project, this list will be narrowed down to the 25 metrics, of which 15 will be tested in Ylä-Malmi

Ideally, each metric is measured before, during and after the deployment of urban experiments to evaluate the changed on the scape, the human activity patterns and the local cultures.



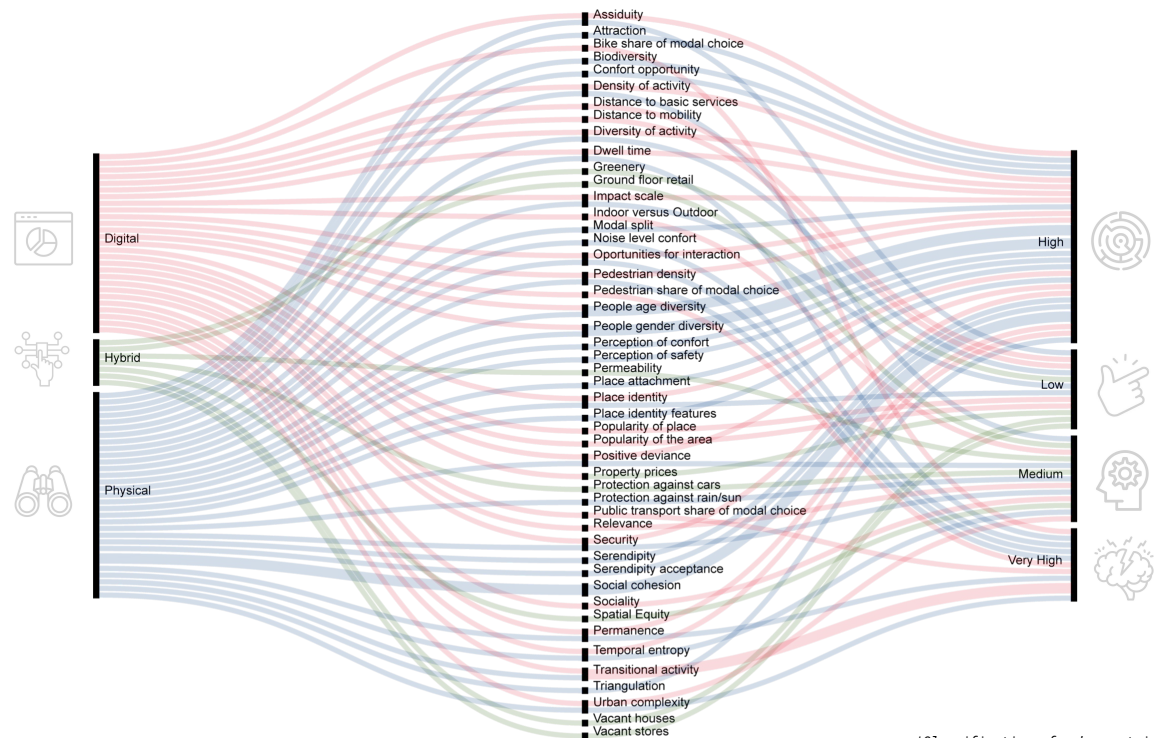
*Categorisation of urban metrics

Feasibility

Categorising metrics based on their analytic space and feasibility

The possibility of deploying each metric relies on data, resources, time and workforce availability. Depending on those variables, each metric can be deployed using digital analysis of available data, on-site surveys, or combining the two into a hybrid investigation.

To help with the metrics selection process, we have characterized each one based on the efforts typically required to deploy them. Based on our previous experiences, we have grouped them into *low*, *medium*, *high* and *very high* efforts necessary to accomplish the task.



*Classification of urban metrics

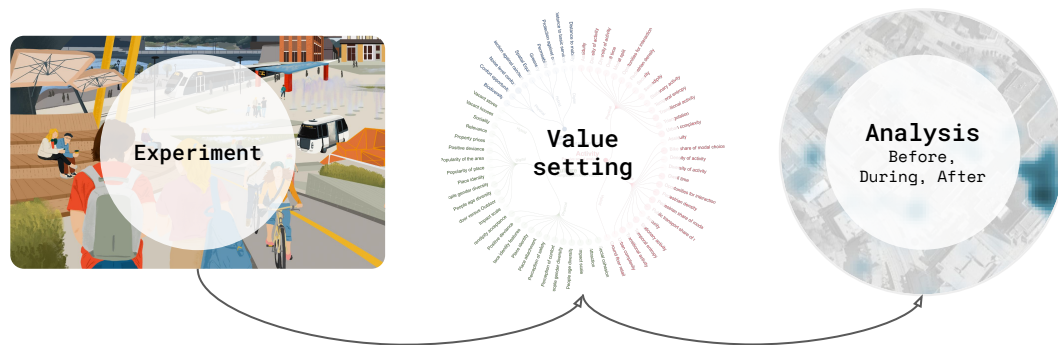
Experimentation toolkit

A general implementation process

The Experimentation toolkit is an instrument to evaluate the impact of experiments in public space in affinity with the broader city strategy.

Before the experiment begins, a Value Setting workshop is hosted to select the metrics that best track the city strategy and the potential impact of the experiment through time.

After the metrics are selected, a team can be established to conduct the analysis in 3 stages: before, during and after the experiments. After those 3 data points are gathered, the team will evaluate the quantitative and qualitative trends for each of the metrics. Eventually, they can assess the extension of the impact of the experiment and qualify the type of change it generated.



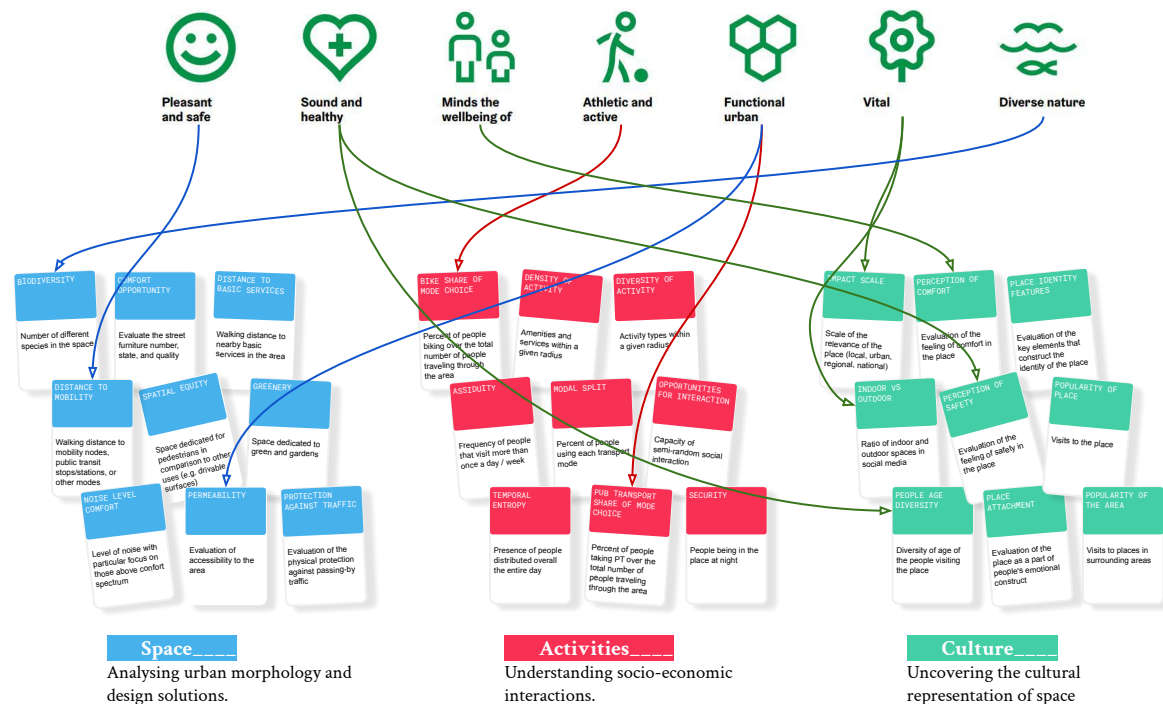
Value Setting

Selecting metrics based on the City's value statement (Helsinki city strategy)

Gather stakeholders and specialists in a workshop session to select the most meaningful metrics so that urban analysts and ethnographers can investigate later. Participants are invited to review the metrics available and choose the directly relevant ones to track the strategy.

After the first group of metrics is selected, a project specialist can choose only those metrics based on the available data, resources and time.

This session is about answering the questions: What values does the city want to promote to achieve its strategic development goals? What are the strategically relevant metrics to assess the experiment?





Experimentation toolkit

Dear experiment facilitators,

Welcome to the toolkit for gathering user information from experiments!

Background

This toolkit is for everyone involved in facilitating experiments in urban space and gathering user information from them.

In order to evaluate the impact of experiments, it is good to decide on the most relevant metrics and track them before, during and after the experiment.

Different metrics can be chosen based on the aims of the experiment in question. Different tools can be used to monitor the chosen metrics.

In this toolkit you can find general description of different relevant metrics and tools to track them with.

How to read the toolkit

Each metric is presented in this toolkit through two different lenses.

- ◆ Introduction to the metric (toolkit cards).
 - What the metric is about.
 - How can that information be used.
 - Why it should be used.
- ◆ Tools to measure it with (deployment).
 - What kind of digital & physical tools can be used.
 - What kind of information can be gathered with the tools.
 - Practical consideration related to choosing and using the tools.

A more specific way to put the tools of the toolkit into use has to be planned case by case.

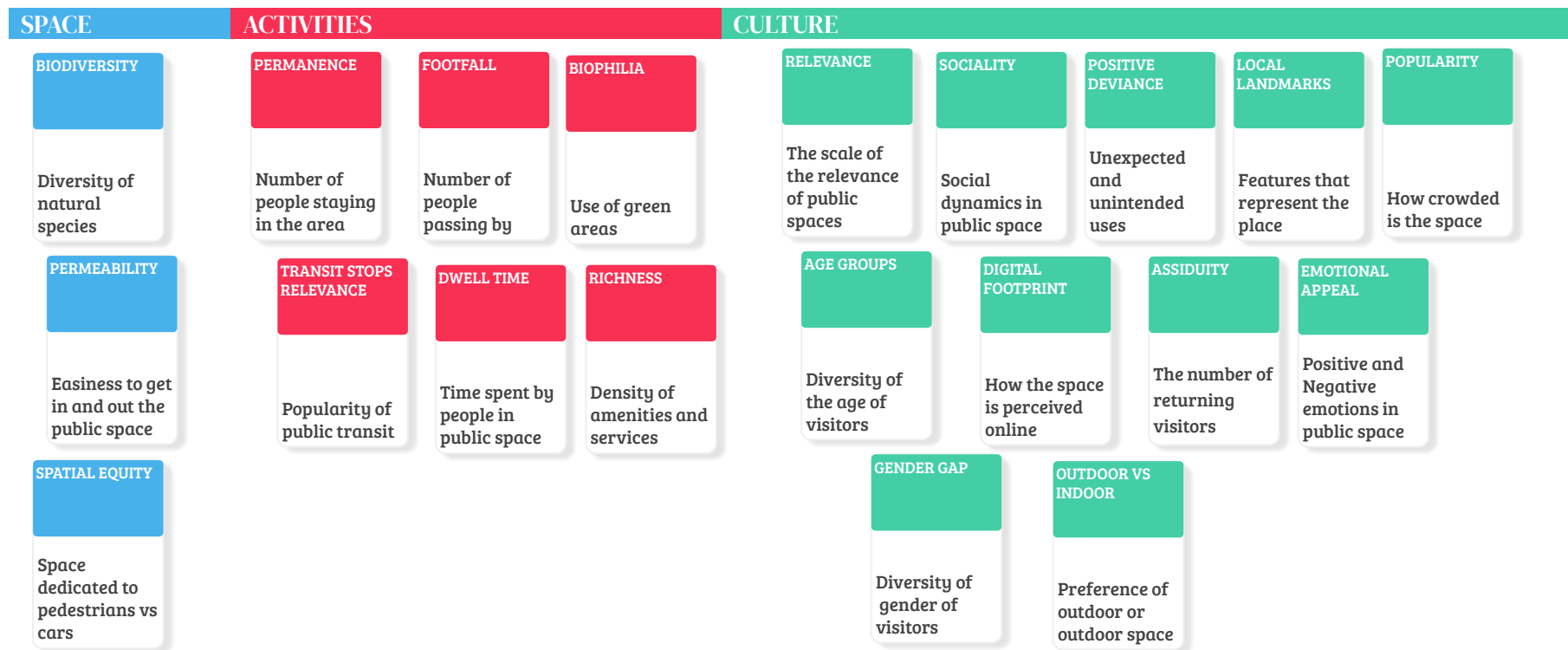
Best time to use this toolkit (choose the metrics and tools)

The right time to use this toolkit is when you are planning on, what type of information you wish to gather from the experiment and wondering how to do it.

The duration, nature and location of the experiment affect the length of time needed for data gathering, but a good ballpark is one month before, during and after. This way you will be able to identify weekly trends as well as day/night trends.

If the experiment is permanent or semi-permanent, the data gathering should be repeated on different seasons in order to cover different types of weather.

20 SELECTED METRICS



20 SELECTED METRICS

PERMANENCE

The number of people that are dwelling in a specific area in a time interval.

DIGITAL ANALYSIS



ON SITE



POSITIVE DEVIANCE

Recognising unexpected or unintended uses that contribute to the livelihood of a public space.

DIGITAL ANALYSIS



ON SITE



FOOTFALL

The number of people entering a street or an area in a time interval.

DIGITAL ANALYSIS



ON SITE



LOCAL LANDMARKS

Evaluating the social use of local landmarks.

DIGITAL ANALYSIS



ON SITE



DWELL TIME

The average time spent by people within an area or near an amenity or landmark.

DIGITAL ANALYSIS



ON SITE



DIGITAL FOOTPRINT

Analysing the sense of place of public space on social media.

DIGITAL ANALYSIS



RICHNESS

The number of amenities and services within an area or along a street.

DIGITAL ANALYSIS



ON SITE



ASSIDUITY

The number of returning visitors in a public space.

DIGITAL ANALYSIS



ON SITE



SOCIALITY

Surveying interpersonal dynamics and socialisation among people.

DIGITAL ANALYSIS



ON SITE



POPULARITY

Measuring how popular is the public space, amenity or living lab experiment.

DIGITAL ANALYSIS



ON SITE



20 SELECTED METRICS

EMOTIONAL APPEAL

Measuring how popular is the public space, amenity or living lab experiment.

DIGITAL ANALYSIS



ON SITE



BIODIVERSITY

Mapping the presence and measuring diversity of natural species in the area.

DIGITAL ANALYSIS



ON SITE



GENDER GAP

Measuring gender gaps in public space.

DIGITAL ANALYSIS



ON SITE



SPATIAL EQUITY

Measuring the space reserved for pedestrians compared to the space reserved for vehicles.

DIGITAL ANALYSIS



ON SITE



AGE GROUPS

Measuring the age diversity of people in public space or who are actively using the living lab experiment.

DIGITAL ANALYSIS



ON SITE



PERMEABILITY

Mapping the accessibility of public spaces and easiness of movement throughout the space.

DIGITAL ANALYSIS



ON SITE



INDOOR VS OUTDOOR

Mapping people's preference for outdoor or indoor spaces.

DIGITAL ANALYSIS



ON SITE



TRANSIT STOPS RELEVANCE

Measuring the use and popularity of transit stops near the living lab experiment.

DIGITAL ANALYSIS



ON SITE



RELEVANCE

Ranking the social relevance of places in the city.

DIGITAL ANALYSIS



ON SITE



BIOPHILIA

The number of people and the time they spend in green areas.

DIGITAL ANALYSIS



ON SITE



20 SELECTED METRICS - *Difficulty (Efforts+Expertise+Workload)*



How to utilise the toolkit cards

The type of information displayed on the slide

Metric category

ACTIVITY



Metric name

PERMANENCE

The number of people that are dwelling in a specific area in a time interval.

Metric description



City goals tracked by the metric

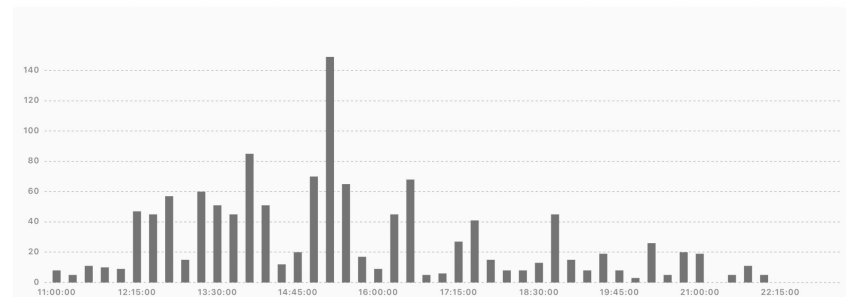
FEATURES

This is measured by counting how many people are stationary in the area in a given time interval.

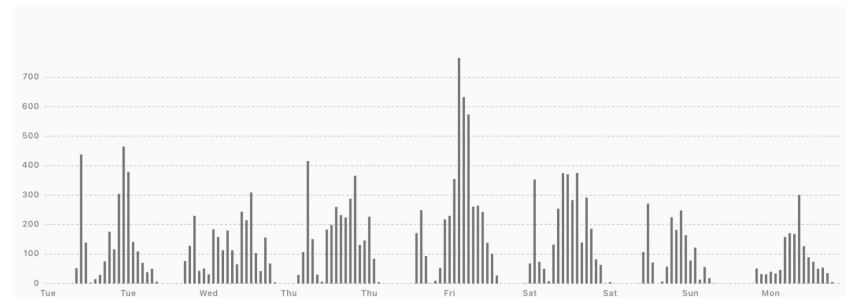
How to use this metric

This metric is useful to determine when interventions increased both the attractiveness and the comfort of the space.

Why to use this metric



A typical data collection output for this metric (hourly)



A typical data collection output for this metric (daily)

PERMANENCE

Deployment

Digital

Install AI-enabled tracking cameras (eg. FYMA) to count the number of people in the area in intervals of 15 minutes or 1 hour. Collect data for at least 4 weeks.

How to implement the metric through data collection and analysis.

REQUIREMENTS

- A stable electricity connection for each mobile camera.
- Also existing IoT surveillance cameras can be used.

Requirements for the minimal deployment of this metric

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

On Site

TYPE 1 Survey permanence in an area for intervals of 15 mins. Carry out site observations at least during the morning and evening peak hours. Repeat during weekdays and weekends.

How to implement the metric through on-site data collection and analysis

TYPE 2 Survey permanence in an area for intervals of 15 minutes. Observe what activities people are performing. Later it will be possible to determine the most permanent activities in the area.

REQUIREMENTS

- A customized worksheet to count people.
- At least one surveyor per area.

Requirements for the minimal deployment of this metric

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●



DIGITAL

Footfall is best measured with digital means because it allows gathering data 24/7 and acquiring data across times of the day and week. The pros of using automated data collection and digital analysis tool to evaluate the intervention.

ON SITE

On Site analysis is beneficial in the case there is interesting behaviour. The pros of using on site analysis to collection qualitative and quantitative data by a surveyors.

HYBRID

Combining the two would allow to accurately analyse trends but also to observe what are the type of activities people perform in public space. The advantages of combining both approaches.

20 SELECTED METRICS

PERMANENCE

Method

ACTIVITY



PERMANENCE

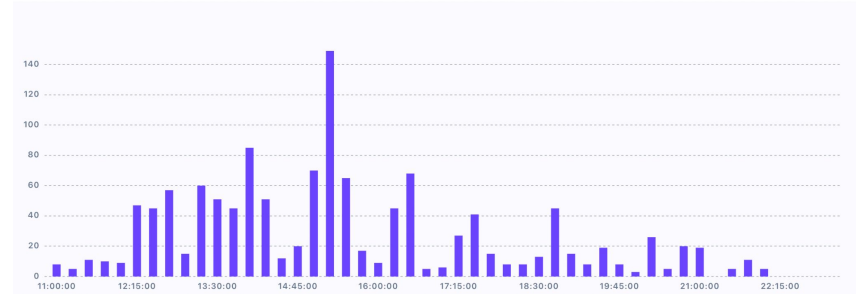
The number of people that are dwelling in a specific area in a time interval.



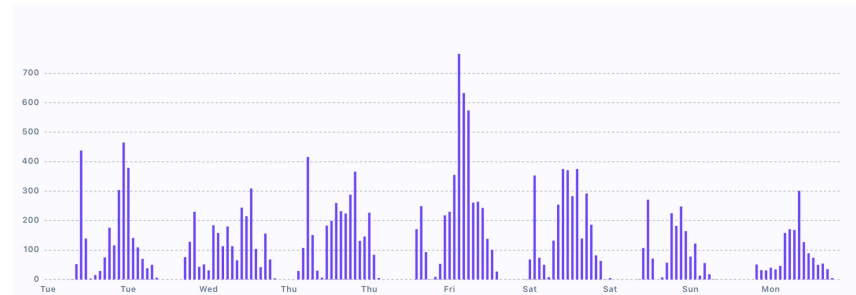
FEATURES

This is measured by counting how many people are stationary in the area in a given time interval.

Useful to determine when interventions increased both the attractiveness and the comfort of the space.



A typical data collection output for this metric (hourly)



A typical data collection output for this metric (daily)

PERMANENCE

Deployment

Digital

Install AI-enabled tracking cameras (eg. FYMA) to count the number of people in the area in intervals of 15 minutes or 1 hour. Collect data for at least 4 weeks.

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

REQUIREMENTS

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Software to visualize the data is recommended (eg. Tableau)

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

On Site

TYPE 1 Survey permanence in an area for intervals of 15 mins. Carry out site observations at least during the morning and evening peak hours. Repeat during weekdays and weekends.

TYPE 2 Survey the permanence in a given area for intervals of 15mins and record what type of activities people are performing. Later it will be possible to determine the most permanent activities in the area.

REQUIREMENTS

- A customized worksheet to count people.
- At least one surveyor per area.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Permanence is best measured with digital means because it allows gathering data 24/7 and acquiring detailed hourly trends across times of the day and days of the week.

ON SITE

On Site analysis is beneficial in the case there is interest to collective qualitative behavioural data.

HYBRID

Combining the two would allow to accurately analyse trends but also to observe what are the type of activities that people perform in public space.

FOOTFALL

Method

ACTIVITY



FOOTFALL

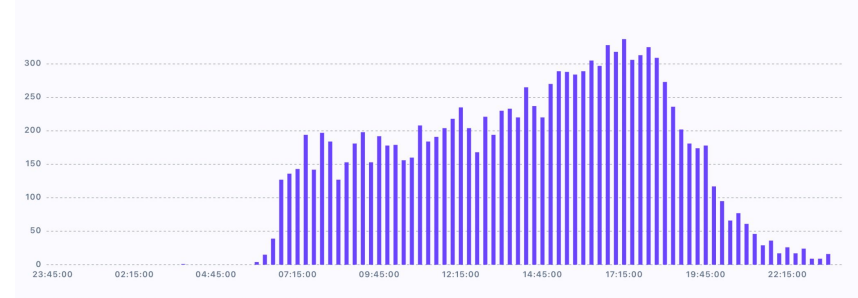
The number of people entering a street or an area in a time interval.



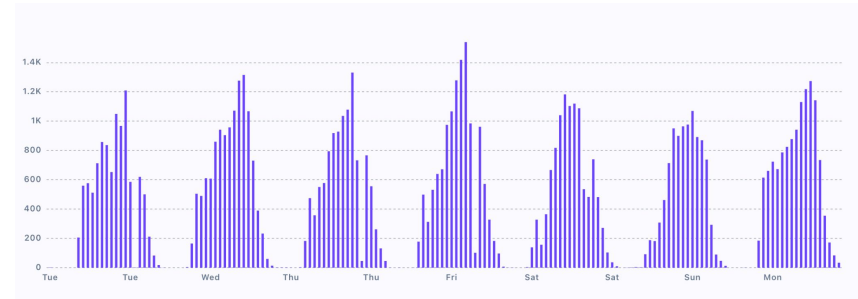
ABOUT

Footfall measures the volume of pedestrian traffic generated by venues, amenities and services in the area. The number of pedestrians and cyclists passing by a given area or a street directly shows the vitality of urban spaces.

Footfall is useful to determine if the intervention favoured or hinder the number of people passing by the area.



A typical data collection output for this metric (hourly)



A typical data collection output for this metric (daily)

FOOTFALL

Deployment

Digital

Install AI-enabled tracking cameras to count the number of people and their mobility mode passing by a street, segment of street or area.

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

REQUIREMENTS

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

On Site

Design and use a worksheet to count the number of people crossing in imaginary or physical line/area in a 15 min interval. Use a categorical columns to record their mobility mode. Carry out site observations at least during the morning and evening peak hours. Repeat during weekdays and weekends.

If there is enough workforce available, it is possible to record also the demographics of the passers by.

REQUIREMENTS

- A customized worksheet to count people.
- At several surveyors per street / area. The more traffic, the more surveyors are needed.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Footfall is best measured with digital means because it allows gathering data 24/7 and acquiring detailed hourly trends across times of the day and days of the week. This method also allow to measure the mobility mode and the speed of transit.

ON SITE

On site analysis are no favourable in busy transit areas because the more pedestrians and cyclists will pass by the more surveyors will be required to record the tally. However, surveyors can also keep the tally by demographic.

HYBRID

Combining the two would not be necessary if a digital survey is possible.

DWELL TIME

Method

ACTIVITY



DWELL TIME

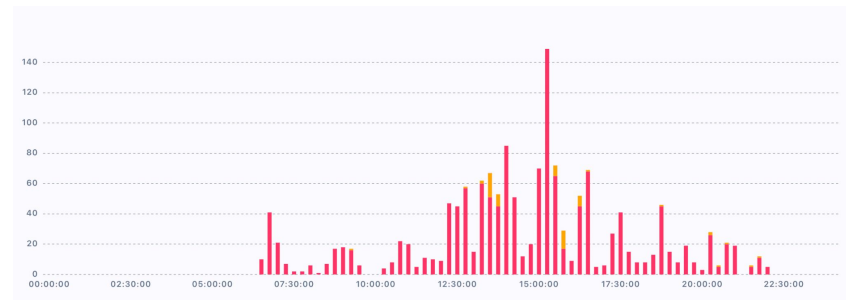
The average time spent by people within an area or near an amenity or landmark.



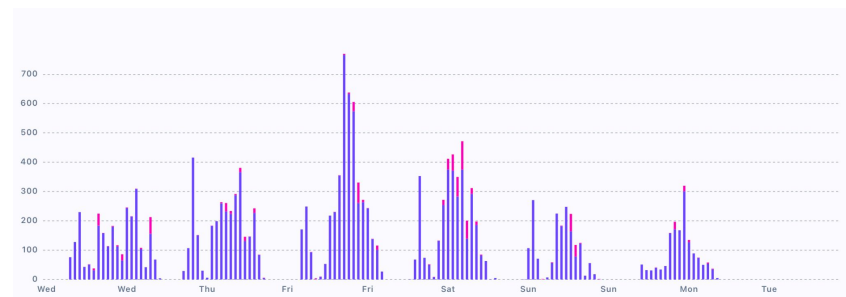
ABOUT

This is measured by counting pedestrian flow volume: number of people, and length of stay.

Useful to determine if the intervention has improved the general comfort of the area of a given amenity. The better environmental and urban design, the longer time people spend alone or in groups. It is crucial to analyse this metric in different time of the years and days of the week, as permanence is influenced by the weather, work-life rhythms and the presence of events or temporary uses.



A typical data collection output for this metric (hourly)



A typical data collection output for this metric (daily)

DWELL TIME

Deployment

Digital

Install AI-enabled tracking cameras to measure the average time spent by people in public space or in a determined area around a living lab experiment.

EXPERTISE ● ○ ○ ○ ○
WORKLOAD ● ○ ○ ○ ○
REQUIREMENTS ● ● ○ ○ ○

REQUIREMENTS

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ● ○ ○ ○ ○
WORKLOAD ● ● ○ ○ ○
REQUIREMENTS ● ● ○ ○ ○

On Site

Design and use a worksheet to survey permanence in a given area for a number of people. Carry out site observations through the day. Repeat during weekdays and weekends. Use a chronometer to mark the duration of their stay. Additionally, it is also recommended to include the type of activity that they are performing.

REQUIREMENTS

- A customized worksheet to count people and time.
- At least one surveyor per area.
- At least one survey during the day, nighttime, weekdays, and weekends.

Carry out at least one on-site survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Dwell time is best measured with digital means because allows to gather data 24/7 and gain detailed hourly trends across times of the day and days of the week.

ON SITE

On Site analysis is beneficial in the case there is interest to collective qualitative behavioural data.

HYBRID

Combining the two would allow to accurately analyse trends but also to observe what are the type of activities that people perform in public space.

RICHNESS

Method

ACTIVITY



RICHNESS

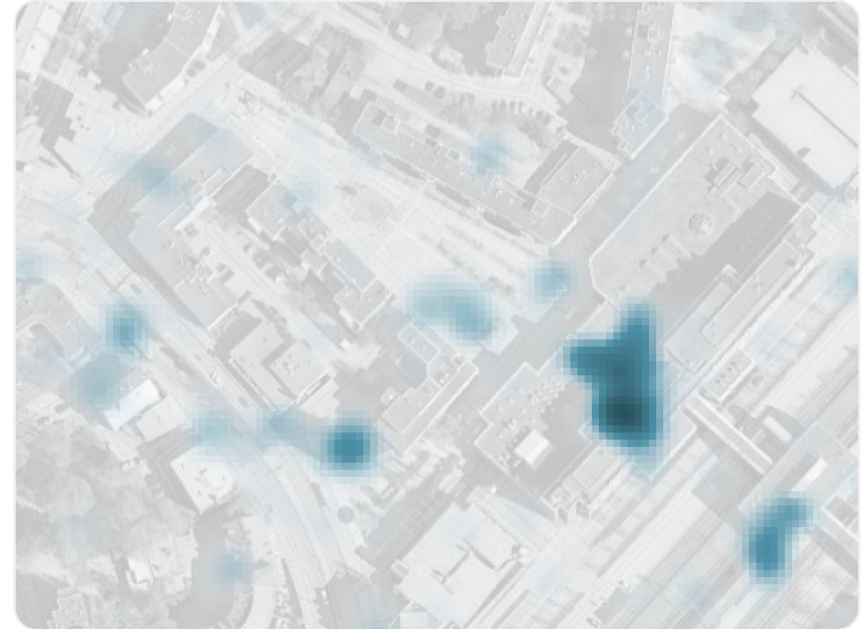
The number of amenities and services within an area or along a street.



ABOUT

This is measured by counting the density of amenities and services (shops, restaurants, cafés, etc.) in a given area.

Richness directly measures the offer in a public space. Generally, the higher is the offer of amenities and services, the more vibrant and active is the place.



A typical data collection output for this metric (density map)

RICHNESS

Deployment

Digital

Obtain a dataset of urban amenities, services, and economic activities of the area. Possible data sources include OpenStreetMap, Foursquare or the local building or business registry.

- Aggregate the number of points (count) by unit of area on a grid layer to ensure equal area sizes.
- Calculate the density of amenities within a given area or in within the cells of a regular grid.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to social media accounts.
- GIS software to perform calculations and visualizations of the output.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

On Site

Create a worksheet based on a map of the area. Divide the area using a grid of equal cells. Visit the area and carefully mark down the location of the amenities that are accessible. Pair special attention to business that are in the upper stories of buildings.

Alternatively, instead of mapping and counting amenities by gridcell, it is possible to do it by street segment.

REQUIREMENTS

- A totally customized worksheet to mark the location of places.
- At least one surveyor per area.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Richness is best measured with digital means because allows to gather data faster, and gain detailed knowledge of location and types of activity, as well as additional metadata such as opening times, user ratings.

ON SITE

On Site analysis can be biased by the surveyor's access to the places, as some amenities can be not visible from public space. On the other hand, on-site observations can be beneficial for additional data, such as the size and capacity of the places, or the prices of goods and services.

HYBRID

Combining the two would produce accurate insights about the richness of the place.

SOCIALITY

Method

CULTURE



SOCIALITY

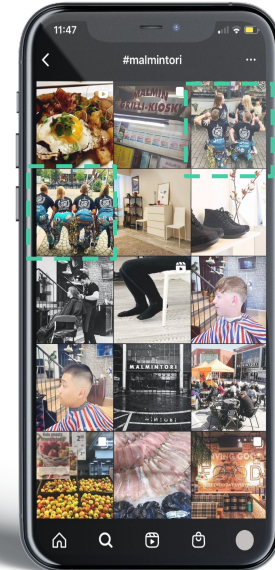
Surveying interpersonal dynamics
and socialisation among people



ABOUT

Sociality is a phenomenon related to social cohesion that drives people to participate in social and cultural events in the area.

Evidences of social interaction (e.g. on pictures shared publicly on social media) is understood as intention to represent social and cultural events and therefore, a positive indicator of social cohesion from an individual identity perspective.



An example of data formats to detect sociality in Social Networks.

SOCIALITY

Deployment

Digital

Survey pictures from social networks considering potential locations and hashtags that represent the place. Instagram and Facebook are recommended.

Look for images where small or large groups of people are doing things together, also in the case the activity is not the subject of the photo but it is visible in the background.

Gather the observation in an excel table to analyse trend and visualise the data.

On Site

Create a worksheet to count the number of social events happening in the area, such as groups of people hanging out and talking to each other. Take note of the number of people and the activity that they perform.

All those metrics should be collected at least during day time, nighttime, on a weekday and during weekend.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to social media accounts
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- A customized worksheet to mark the number of social interactions, and the number of people involved in each of them.
- At least one surveyor per area.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

The advantage of using social media to study sociality is that often people leave a commentary or use hashtag that provide more insights on the activities they are performing. This con of using social media is that images represent only one moment in time and not the duration or evolution of certain activities cannot be observed.

ON SITE

Observing social behaviours on site is favourable because surveyors can observe the evolution of social activities through time and better understand how people interact with public space or the living lab experiment.

HYBRID

There is no particular advantage of combining the two method, however, on social media people may share activities that otherwise may be remain hidden if a public or a surveyor was present.

POSITIVE DEVIANCE

Method

CULTURE



POSITIVE DEVIANCE

Recognising unexpected or unintended uses that contribute to the livelihood of a public space.



ABOUT

Positive deviance maps spontaneous appropriations of public space (such as play, sports, dancing, etc.). If those behaviors encourage social curiosity and cohesion, they make small public space thrive and can maximise community values over market values..

Positive deviance finds emerging behaviors and activities that contribute to the livelihood of public spaces. Those can be used to support new initiatives or inspire new temporary or permanent uses, eventually building a sense of community among city residents.



An example of data formats to detect sociality in Social Networks.

POSITIVE DEVIANCE

Deployment

Digital

Survey pictures from social networks considering potential locations and hashtags that represent the place. Instagram and Facebook are recommended for this purpose. Browse the images to find unintended uses and activities that encourage social curiosity and cohesion.

Gather the observation in an excel table to analyse trend and visualise the data.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to social media accounts.

On Site

Survey the public space to find unintended uses and activities that encourage social curiosity and cohesion. Gather the type of activities such as sport, art, temporary use etc. and keep a tally of the number of people it attracted.

For example if a few people gather to dance in public space, count the number of people that stopped to look at the dancing in a time interval of 5 or 15 minutes - depending on the type of activity.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- A customized worksheet to mark the positive deviances, their duration, the number of people attracted and the length of their stay.
- At least one surveyor per area.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Positive deviance is best analysed on a district scale because a large number of places and images are needed to find a significant amount of cases.

ON SITE

On Site analysis are the best choice for positive deviance because spontaneous behaviours are not always documented and shared on social media - unless they attract a large number of people or a meaningful for certain individuals.

However this requires a major effort in surveying public space for extensive periods of time.

HYBRID

An hybrid approach may work best because if an emergent activity or use is worth sharing it will be present on social media and on-site observations help integrating more cases of undocumented positive deviance.

LOCAL LANDMARKS

Method

CULTURE



LOCAL LANDMARKS

Evaluating the social use of local landmarks.



ABOUT

Local landmarks highlight objects that gather special attention and create a sense of place identity at local scale.. These local landmarks can be sculptures, pieces of street furniture, trees, etc.

The analysis of local landmarks help to evaluate how people use and interact with experiments in comparison to the social use of existing landmarks nearby.



An example of data formats to detect local landmarks in Social Networks.

LOCAL LANDMARKS

Deployment

Digital

Survey pictures from social networks considering potential locations and hashtags that represent the place. Instagram and Facebook are recommended for this purpose. Browse the images to record on a spreadsheet:

- Nr. of group photos
- Nr. of selfies
- Nr. of photos during the day VS during the night

Gather the observation in an excel table to analyse trend and visualise the data.

On Site

Survey several local landmarks and the experiment to set a level of comparison. In each place record on a custom sheet or excel table the following tallies in 15min intervals:

- Nr. of visitors
- Nr. of

Carry out at least a survey during the day, nighttime, weekdays, and weekends.

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

REQUIREMENTS

- Access to social media accounts.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

REQUIREMENTS

- A customized worksheet to mark how many people visit the landmark, how long they stay and if they do so alone or in groups.
- At least one surveyor per landmark.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Browsing images online is advantageous as informal landmarks become visible as many users photographs objects and activities happening in the same place. However it is not possible to capture the nature of the activities nor to gather a broader understanding on what may attract people to a certain spot in the city.

ON SITE

Carrying out investigation on-site may be difficult because only obvious landmark can be visible during the usually short period of a survey. However it allows to better understand the nature of attraction and attachment to certain spaces and it is also possible to document activities and interview people.

HYBRID

The best approach is to first look for formal and informal landmarks on social media and then carry out on-site investigation to learn why a certain place attracts certain kind of activities.

DIGITAL FOOTPRINT

Method

CULTURE



DIGITAL FOOTPRINT

Analysing the sense of place of public space on social media.



ABOUT

The analysis of the digital footprint of public space is about finding images and posts on social media to study the social commentary of the place.

Having a clear understanding of the digital footprint of an experiment is useful to discover how the public perceive the space. It is also used to unearth both hidden criticism and potentials to evaluate the type of impact the experiment has made.



An example of data formats to detect sociality in Social Networks.

DIGITAL FOOTPRINT

Deployment

Digital

Survey pictures social commentary on social networks using locations and hashtags to find them on the platform. On Instagram it is possible to analyse both the text and the hashtag attached to a particular place. On other platform such as Facebook or Twitter, the study should focus on finding the negative and the positive notes regarding the experiment.

It is possible to analyse to rebuild the digital footprint of a place with knowledge management software such as Obsidian or Roam Research.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to social media accounts.
- Knowledge management software (Eg. Obsidian, Roam Research)
- A expert digital anthropologist



DIGITAL

This is the only mean of mapping the digital footprint of cities.

On Site

EXPERTISE ○○○○○
WORKLOAD ○○○○○
REQUIREMENTS ○○○○○

REQUIREMENTS

ASSIDUITY

Method

CULTURE



ASSIDUITY

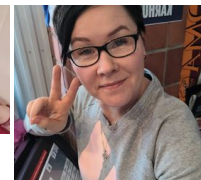
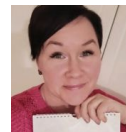
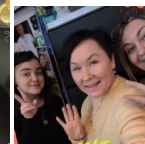
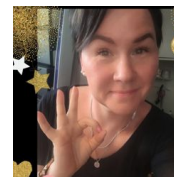
The number of returning visitors in a public space.



ABOUT

Assiduity measures how many people return to a public place or make it active on social media by sharing their activities. The most active people are the “ambassadors” of a place and can greatly influence the attractiveness of the space.

Mapping how many people often return to a place and analysing the activities they carry out, it is useful to find potentials for community development and discover community values.



An example of data formats to detect sociality in Social Networks.

ASSIDUITY

Deployment

Digital

Survey pictures from social networks using representative hashtags and locations. Instagram and Facebook are recommended. Browse the images to record on a spreadsheet:

- Nr. of returning visitors
- Nr. of photos taken by one visitor
- Type of activities performed

Gather the observation in an excel table to analyse trend and visualise the data.

If there are time and resources available, it is also favourable to learn more about the “place ambassador” as they are the local influencers that in many cases have a strong influence on the local community.

On Site

This analysis is mostly carried out with social media, however it is possible to carry out local interview to find “place ambassadors” and gain a local perspective on how the experiment has been perceived.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to social media accounts.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one surveyor per area.



DIGITAL

Analysing social media images can be relatively fast if compared to interviews and canvassing, that can always be done later on by contacting place ambassadors online.

ON SITE

The advantage of doing interviews on site is to grasp people's perception of place and better understand the reasons why they often return to the area - and thus how the experiment may have changed their routine.

HYBRID

The advantage of carrying out both is that with local interview is also possible to begin to establish a network-relationships with the local community. When local surveys and interviews are conducted by a representative of the public sector, local communities can develop a sense of kinship with the city.

POPULARITY

Method

CULTURE



POPULARITY

Measuring how popular is the public space, amenity or living lab experiment.



ABOUT

Popularity measures the number of people visiting, staying, or passing by an area. It is about understanding how central a place is for a local community, dwellers and visitors of the city.

Measuring the popularity of space is helpful in understanding how central it is to the life of a neighbourhood as well as how central it is compared to the social and functional life of the city at large.



tissibaariofficial

Ohjelmaravintola Malmintori

#

#malmintori

822 posts



malmintorinparturi

Malmintorin parturi



tissibaarimalmi

ohjelmaravintola malmintori



Ohjelmaravintola Malmintori

Viljatie 4, Helsinki

#

#malmintorilla

13 posts

An example of data formats to detect sociality in Social Networks.

POPULARITY

Deployment

Digital

TYPE 1 Make a cumulative count of photos shared on Instagram and visits/check-in visible on Foursquare and Facebook.

TYPE 2 Install AI-enabled tracking cameras to count the number of people passing by and staying in a given area in intervals of 15 minutes or 1 hour. This correspond to the sum of the two metrics previously described as Footfall (the number of passers by) and Permanence (the number of people staying). Collect data for at least 4 weeks.

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

REQUIREMENTS

TYPE 1

- Access to social media accounts.

TYPE 2

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

On Site

Sum the tally recorded by the Footfall and Permanence metrics, previously described in this document.

REQUIREMENTS

- A customized worksheet to mark how many people visit the landmark, how long they stay and if they do so alone or in groups.
- At least one surveyor per landmark.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Popularity is best recorded and analysed using AI-Enabled tracking cameras. It is the only methodology that allows collecting and analysing Footfall and Permanence 24/7 and preparing precise reports on the movement and popularity of the area before, during and after experiments. Cameras can also detect the mobility mode of people moving in the area.

ON SITE

The advantage of surveying popularity on site is that other qualitative observations can be done. However, this requires a team of dedicated surveyors spending a considerably long time on site, and increasingly more time will be required to process and analyse the collected data.

HYBRID

The advantage of both methods of investigation is generating insights into the actual number of people in the area and understanding what type of activities they carry out.

EMOTIONAL APPEAL

Method

CULTURE



EMOTIONAL APPEAL

The share of positive and negative emotions about public space or the living lab experiment.



ABOUT

Mapping the emotional appeal is about analysing the balance between positive and negative emotions in a public space or experiment. The more positive over negative emotions are shared, the better; however is not the sheer amount to be considered but rather how rooted and socially compounded some negative mentions can be.

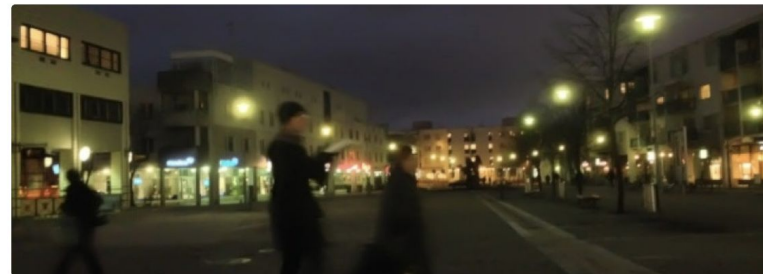
Understanding the emotional appeal can be used to reverse the triggers of negative emotions or provide support for activities and amenities that help kindle positive emotions.



Kai U.

December 31, 2013

A square is a square.



Upvote

Downvote

An example of data formats to detect sociality in Social Networks.

EMOTIONAL APPEAL

Deployment

Digital

Survey pictures from social networks using representative hashtags and locations. Instagram, Twitter and Facebook are recommended.

Browse the images or just tweets to record on a spreadsheet:

- The number of negative comments
- The number of positive comments
- Categorize both positive and negative comments based on their domain (Eg. emotions about the experiment, about the public space overall, the design etc)

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

TYPE 1

- Access to social media accounts.
- An expert digital anthropologist



DIGITAL

A digital survey of emotions can be superficial and open to interpretation biases. However, it provides a quick overview of the sense of place of a public space or experiment.

ON SITE

Interviews on site can provide a better understanding of the emotional appeal, however the process is rather laborious and time consuming.

HYBRID

The advantage of combining both approaches is to have a general ideas on the emotional appeal through social media and gain an even more personal perspective through interviews on site.

On Site

Partner with the designer of the experiment or independently carry out interviews with people who have interacted with the experiment or the public space.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one surveyor per space or experiment.
- At least one survey during the day and weekends.

GENDER GAP

Method

CULTURE



GENDER GAP

Measuring gender gaps in public space.



ABOUT

Measuring Diversity is a key consideration in public space assessment. Creating spaces that are welcoming and inclusive of all genders create a sense of community and belonging, and ensures that everyone feels safe and comfortable in them.

Mapping diversity and inclusion is useful to learn if an experiment is favouring one or another, and if yes, make design changes to rebalance gender gaps.



Female

Male

Other, N/A

An example of data formats to detect diversity and inclusion in Social Networks.

GENDER GAP

Deployment

Digital

TYPE 1 Survey pictures from social networks using representative hashtags and locations. Instagram and Facebook are recommended. Browse the images and record on a spreadsheet:

- The number of photos in which male was the dominant
- The number of photos in which female was the dominant gender
- The number of photos that strike a balance between them.

TYPE 2 Using AI-Enabled cameras to measure gender gaps in a given area.

On Site

Record the gender bias of in an area in a short time intervals of 5 minutes in order to cover different spots where people gather around the experiment of in the gathering corners in a public space.

REQUIREMENTS

TYPE 1

- Access to social media accounts.

TYPE 2

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●



DIGITAL

A digital survey of gender gap can be carried out rather swiftly, however not all demographic groups will be represented.

Using AI-Enabled cameras is the most effective way to measure gender gap.

ON SITE

On site survey of gender gap can be rather precise and effective. However not all times of the day and days of the week can easily be covered unless large human resources are deployed.

HYBRID

Combining the two approaches may be beneficial to gather insights on the extent to which gender gaps are present in the area and with on site survey it is possible to characterise the social landscape of the space.

EXPERTISE ● ● ● ● ●
WORKLOAD ● ● ● ● ●
REQUIREMENTS ● ● ● ● ●

REQUIREMENTS

- At least one surveyor per space or experiment.
- At least one survey during the day and weekends.

AGE GROUPS

Method

CULTURE



AGE GROUPS

Measuring the age diversity of people in public space or who are actively using the living lab experiment.



ABOUT

Age-heterogeneous groups are more innovative and creative than age-homogeneous groups, and that they are better able to solve complex problems. Age diversity has been shown to lead to increased levels of social cohesion and trust, as well as better communication and collaboration.

Mapping age diversity is useful to learn if an experiment is accessible and safe for all ages, especially vulnerable age groups such as children or the elderly.



- Child
- Adolescent
- Young adult
- Adult
- Senior

An example of data formats to detect age diversity in Social Networks.

AGE GROUPS

Deployment

Digital

TYPE 1 Survey pictures from social networks using representative hashtags and locations. Instagram and Facebook are recommended. Browse the images and record on a spreadsheet:

- The number of photos in which groups of people may belong the same age group
- The number of photos in which the age of people in groups is diverse

TYPE 2 Using AI-Enabled cameras to measure age groups in a given area.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

TYPE 1

- Access to social media accounts.

TYPE 2

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Software to visualize the data is recommended (Eg. Tableau)

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

On Site

Record the age diversity of in an area in a short time intervals of 5 minutes in order to cover different spots where people gather around the experiment of in the gathering corners in a public space.

REQUIREMENTS

- At least one surveyor per space or experiment.
- At least one survey during the day and weekends.



DIGITAL

A digital survey of age diversity can be carried out rather swiftly, however not all demographic groups will be represented due to the technological bias favoring younger population.

ON SITE

On site survey of age diversity can be rather precise and effective. However not all times of the day and days of the week can easily be covered unless large human resources are deployed.

HYBRID

Combining the two approaches may be beneficial to gather insights on the extent to which age groups are present in the area and with on site survey it is possible to characterise the social landscape of the space.

INDOORS VS OUTDOORS

Method

CULTURE



INDOORS VS OUTDOORS

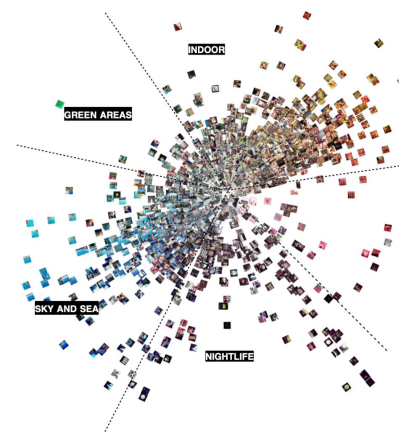
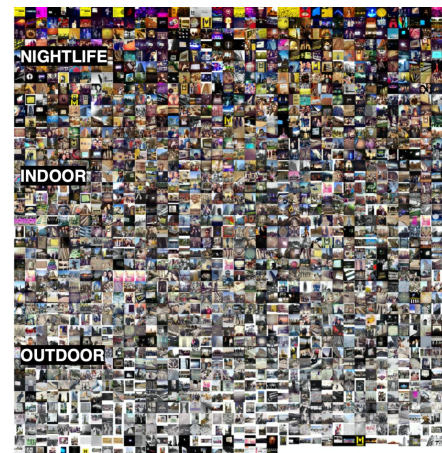
Mapping people's preference for outdoor or indoor spaces.



ABOUT

Outdoor activities are an indicator of high quality public spaces, safety and sociality. While being outdoor or indoor is also influenced by the weather conditions, measuring the ratio between indoor and outdoor activities is a good indicator of the quality of space, the attractiveness of amenities and the availability of a safe and socially meaningful place.

Mapping this indicator is useful to assess if a public space is successful and comfortable to socialize in, relative to indoor alternatives.



An example of data formats to detect indoor and outdoor pictures in Social Networks.

INDOORS VS OUTDOORS

Deployment

Digital

TYPE 1 Survey pictures from social networks using representative hashtags and locations. Instagram and Facebook are recommended. Browse the images and record on a spreadsheet:

- The nr. of photos taken in indoor spaces.
- The nr. of photos taken in outdoor spaces (also day VS night)

TYPE 2 Using computer vision to measure the lightning conditions and dominant colors in a dataset of pictures from social networks. Automatically categorize:

- The number of dominant blue (sky) and green (vegetation).
- The number of dominant warm (interior lights) and purple (nightlife and neon).

On Site

Develop a spreadsheet to count the number of people staying in outdoor spaces, and also the number of people entering (or exiting) social amenities surrounding the experiment area (bars, cafés, restaurants).

REQUIREMENTS

TYPE 1

- Access to social media accounts.

TYPE 2

- Access to social media accounts.
- Image AI-driven image measurement and visualization software. ImageJ and Montage macros are recommended.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one surveyor per space or experiment.
- At least one survey during the day and weekends.



DIGITAL

A digital survey of indoor vs outdoor activities can be carried out rather swiftly, however not all demographic groups will be represented due to the technological bias favoring younger population. It is also to consider the representativeness bias of social media portraying social activities rather than everyday individual habits, both in Types 1 and 2.

ON SITE

On site survey indoor vs outdoor activities can give a general sense of quality of outdoor space. However private indoor spaces would be not covered by the surveyor.

HYBRID

Combining the two approaches may be beneficial to gain insights about the types of activities performed in outdoor spaces, as well as the hours of the day and the social groups that are active.

RELEVANCE

Method

CULTURE



RELEVANCE

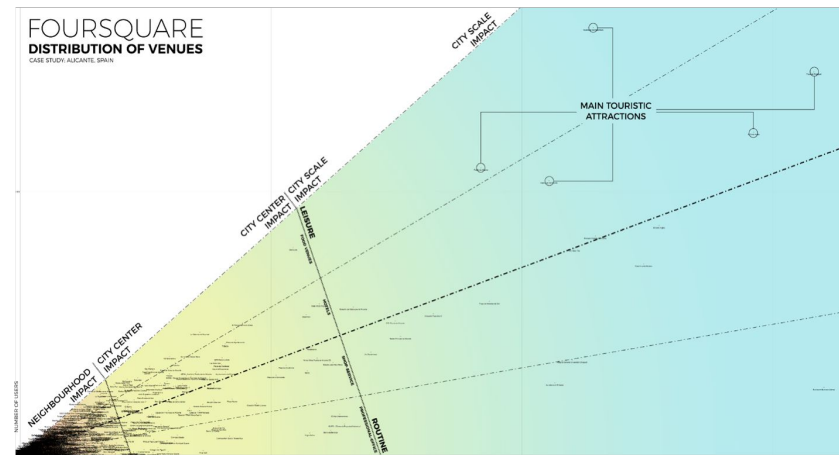
Ranking the social relevance of places in the city.



ABOUT

The scale of relevant is measures how popular is one place in comparison to all other places in the city. Popularity can be interpreted in different way, such as how many visitors a place has, how many positive online reviews there are or how well established it is in the mental image of the city. However counting the number of visitors is the most effective for placemaking experiments..

Mapping relevance is helpful to learn whether an experiment is having an impact at a local level, district level, or urban space, or it is an international landmark.



An example of data showing the scale of relevance of one locations in a city.

RELEVANCE

Deployment

Digital

TYPE 1 In Foursquare, find all the relevant places and amenities in the area and record their visit count regularly (daily or weekly). The resulting table will allow counting the number of visitors in a given period and trends (growth/decline in visits).

Record the same data for venues with a local (such as the local mall) or urban relevance (such as a central station, an important square or a library). Then compare how the living lab is growing or losing visitors compared to those.

TYPE 2 Purchase amenity visit count datasets from Foursquare or Google Maps.

On Site

Develop a questionnaire asking the general public about comparing the experiment location to other similar locations in the city. Additionally, a list of locations of known relevance can be shown to the public, asking them to select which one is more similar to their perception living lab in terms of importance.

After that, interpret the scale of relevance of the similar locations to infer a sense of understanding of the relevance of the living lab.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

TYPE 1

- A Foursquare account.
- Access to data visualization software with basic statistical functions, e.g Tableau.

TYPE 2

- Access to a dataset with users visit data.
- Access to data visualization software with basic statistical functions, e.g Tableau.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one surveyor per space or experiment.
- A critical mass of local population that is engaged with the survey.



DIGITAL

A digital study of the scale of relevance of a location is performed objectively, as it allows comparison to all other places in the city, visited by all kinds of residents and visitors. Scientific research showed that Foursquare and Google Map visit counts can be rather reliable to analyse trends.

ON SITE

An on site survey can help gain qualitative understanding of additional factors, such as how familiar people are with the place, if they like it, or if they don't know it at all.

HYBRID

Combining the two approaches may be beneficial to gain insights about the scale of importance of the living lab, as well as perceptual descriptions of it.

BIODIVERSITY

Method

SPACE



BIODIVERSITY

Mapping the presence and measuring diversity of natural species in the area.



ABOUT

Biodiversity refers to the variety of plants, animals, and other organisms that are present in the area, as well as qualifying the type of ecosystem and its dynamics. Studies carried out in Finland show an association between increased biodiversity and a better immune system in children and young people. Increasing biodiversity in public space can improve the health or residents.

Mapping biodiversity is useful to assess whether more natural species should be introduced in public space.



An example of social media posts showing biodiversity

BIODIVERSITY

Deployment

Digital

Survey pictures from social networks using representative hashtags and locations. Instagram and Facebook are recommended. Browse the images and record on a spreadsheet:

- The number of photos taken in biodiverse area or having biodiversity elements as subject (Eg. urban parks, biodiversity interventions)
- The number of types of plants and animals on each photo.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●



DIGITAL

A digital survey of biodiversity requires a low effort, especially when surveying several areas or large open spaces. However, it cannot ensure the representation of all species, as it is conditioned by the user's perception of preferences for some of them over others. Also when using the digital survey the results is not about mapping the level of biodiversity but understanding how biodiverse area are attractive or not.

ON SITE

On site surveys can grant the presence of a more accurate biodiversity reporting, especially when carried out by experts.

HYBRID

Combining the two approaches may be beneficial to gain insights about the presence of plants and animals, the diversity of species, and people's preferences for them.

On Site

Develop a spreadsheet to count the number species of plants and animals that are present of the living lab. Visit the place and mark them down. Taking these notes on a map is recommended to observe the relationship between different species.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one surveyor per space or experiment.
- Basic knowledge of biology is recommended.

SPATIAL EQUITY

Method

SPACE



SPATIAL EQUITY

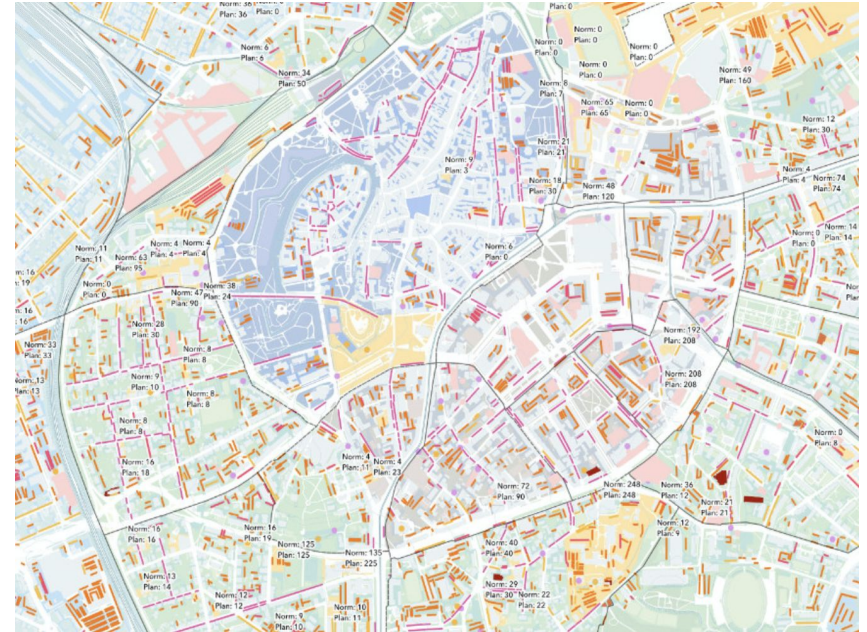
Measuring the space reserved for pedestrians compared to the space reserved for vehicles.



ABOUT

Dedicating street space to pedestrians makes streets more pleasant places to be and encourages people to spend time outside, which has numerous benefits for physical and mental health, as well as perception of safety.

Mapping space dedicated to pedestrians is useful to orient spatial planning policies to establish priorities of regeneration using land-use.



An example of a GIS analysis of spatial equity.

SPATIAL EQUITY

Deployment

Digital

Download a GIS-based dataset of polygons with information about the main land uses, and visualize them using a dedicated software.

- Download a set of polygons with land use data
- Calculate the area of each polygon
- Aggregate the areas by land use type
- Calculate the relative amounts of areas for each uses.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to land use spatial data.
- GIS software to visualize and perform basic spatial operations.
- Expert GIS analyst



DIGITAL

A digital survey of spatial equity requires a low effort, especially when surveying several areas or large open spaces. It is conditioned by the accuracy and quality of the datasets used.

ON SITE

Offline research, when carried out by locals, can be useful for classifying areas with unassigned land use, or mixed areas. However, it would produce less accurate results, as the shapes of the areas would be simplified.

HYBRID

Combining the two approaches would mean an in-depth revision of the GIS information from the perspective of local knowledge. It would reduce the data biases and would provide accurate calculations.

On Site

Create a printed map of the study area. Divide the area using a grid of cells with equal size. Mark the spaces dedicated to car traffic, such as parking lots, roads, crossings. Mark the space dedicated to pedestrians, such as sidewalks, parks, plazas, and playgrounds. Count the number of squares containing each of the two types of land, and compare.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one researcher with basic knowledge of the place.

PERMEABILITY

Method

SPACE



PERMEABILITY

Mapping the accessibility of public spaces and easiness of movement throughout the space.



ABOUT

Learning how permeable is a public space can help improving accessibility and potentially increasing the number of visitors in a public space. A living lab experiment may be used as an opportunity to remove barriers and obstacles in around public spaces. This will offer more opportunities for people to enjoy the living lab.

Mapping permeability is useful assess how the occasion of a living lab experiment can be used to improve accessibility to public space.



An example of a permeable open space

PERMEABILITY

Deployment

Digital

Download a GIS-based dataset of polygons with information about the main land uses, and visualize them using GIS software.

- Download a set of polygons with land use data
- Calculate the perimeter of each polygon
- Filter the polygons to generate a subset of green spaces, including parks, gardens, plazas.
- Use a line to map the walls and fences that limit those spaces.
- Calculate the ratio the length of lines against the complete perimeter of each polygon

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- Access to land use spatial data.
- GIS software to visualize and perform basic spatial operations.



DIGITAL

A digital survey of permeability requires a low effort, especially when surveying several areas or large open spaces. It is conditioned by the accuracy and quality of the datasets used. It is also limiting in terms of establishing which sides have walls and fences, and which sides are open.

ON SITE

Offline research can be more accurate, since the presence of walls and fences is better seen in-place.

On Site

Create a printed map of the study area. Mark the shapes of public spaces such as gardens, parks, and playgrounds. Visit the places and observe which fronts of the areas are accessible, or have fences or walls. Mark these fronts on the map. Utilize a scaled ruler to measure the length of fenced fronts against the perimeter of the public spaces.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

- At least one researcher with basic knowledge of the place, and basic knowledge of geometry.

HYBRID

Combining the two approaches would mean an in-depth revision of the GIS information and also provide accurate calculations.

TRANSIT STOPS RELEVANCE

Method

SPACE



TRANSIT STOPS RELEVANCE

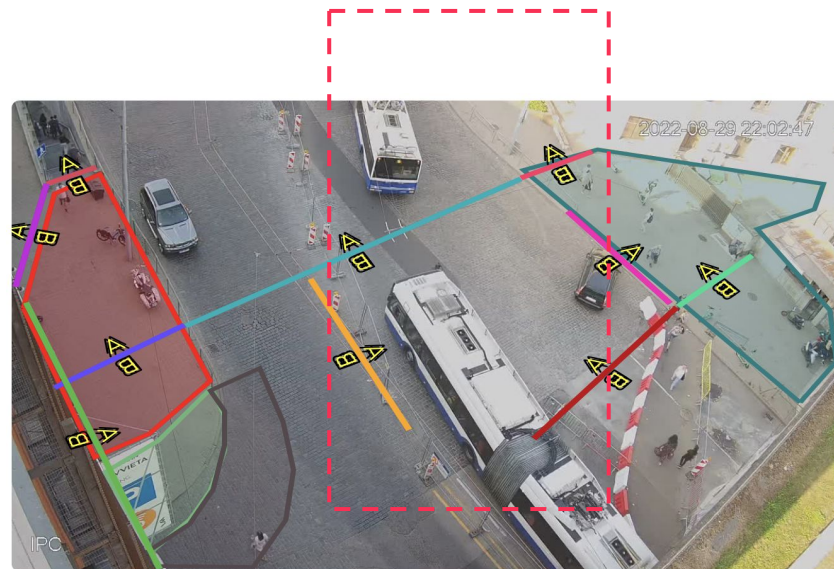
Measuring the use and popularity of public transportation stops near the living lab experiment.



ABOUT

The popularity of public transit stops is an indicator of the type of transport mode people chose to visit the living lab experiment. Ideally, the experiment shouldn't attract more private vehicles in the area but rather increase the usage of public transit stops in its vicinity.

Investigating the use of public transit can be used to determine if the living lab experiment has contributed to the sustainability goal of the city or if instead, has attracted users with private vehicles.



An example of vehicle and person detection software

TRANSIT STOPS RELEVANCE

Development

Digital

TYPE 1 Install AI-enabled tracking cameras to count the number of people and their mobility mode passing by a street, segment of street or area. Specially target bus stops and use the software to count the number of people boarding and disembarking buses, taxis, and trams, and going in and out of subway stations.

Additionally, it is also possible to utilize the software to count the number of vehicles of each type in order to calculate the demand, for those that are visible by the cameras (e.g. buses, shuttles, trams).

TYPE 2 Use a dataset of places with the number of times that they have been visited. Foursquare is recommended. Filter the data to observe only those places related to mobility.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

TYPE 1

- A stable electricity connection for each mobile camera. The number of cameras depends on the size of the public space to cover.
- Also existing IoT surveillance cameras can be used.
- Access to data visualization software

TYPE 2

- A Foursquare account.
- Access to data visualization software

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

On Site

Design and use a worksheet to count the number of people crossing in imaginary or physical line/area in a 15 min interval. Use a categorical columns to record their mobility mode. Carry out site observations at least during the morning and evening peak hours. Repeat during weekdays and weekends. Focus especially on public transport passengers getting in and out buses, trams, or subway stations.

REQUIREMENTS

- A customized worksheet to count people.
- At several surveyors per street / area. The more traffic, the more surveyors are needed.
- At least one survey during the day, nighttime, weekdays, and weekends.



DIGITAL

Relevant public transport access are best measured with digital means because it allows gathering data 24/7 and acquiring detailed hourly trends across times of the day and days of the week. This method also allow to measure the mobility mode and the speed of transit.

ON SITE

On site analysis are no favourable in busy transit areas because the more pedestrians and cyclists will pass by the more surveyors will be required to record the tally. However, surveyors can also keep the tally by demographic.

HYBRID

Combining the two would not be necessary if a digital survey is possible.

BIOPHILIA

Method

SPACE



BIOPHILIA

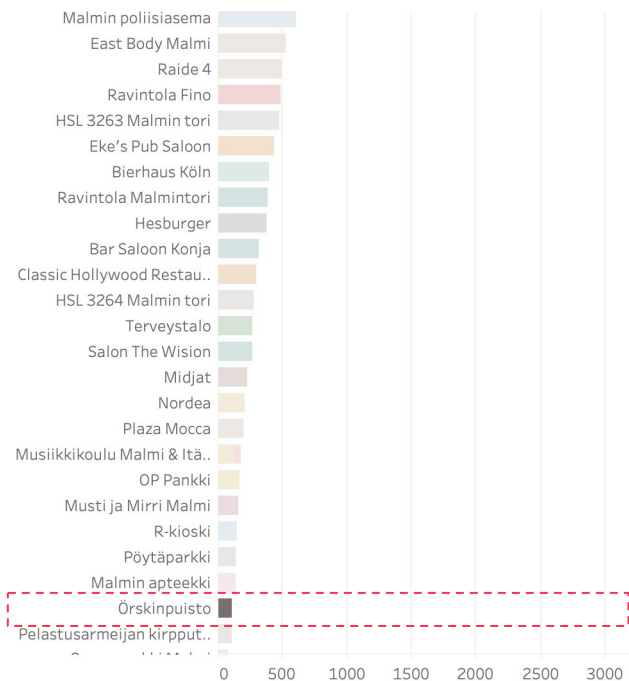
The number of people and the time they spend in green areas.



ABOUT

People living in areas with open green space have better mental and physical health outcomes. However, in many cities, parks are not evenly distributed, privatized, closed, or with poor access.

This metric computes the green spaces around the study area and their popularity, to check if they are being used and assess the latent demand for greenery.



An example of relevance of green spaces.

BIOPHILIA

Development

Digital

TYPE 1 In Foursquare, find all the green spaces such as parks, gardens, and fields, and record their visit count regularly (daily or weekly). The resulting table will allow counting the number of visitors in a given period and trends (growth/decline in visits).

TYPE 2 Purchase amenity visit count datasets from Foursquare or Google Maps, for those land use types containing green spaces.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

REQUIREMENTS

TYPE 1

- A Foursquare account.
- Access to data visualization software with basic statistical functions, e.g Tableau.

TYPE 2

- Access to a dataset with users visit data.
- Access to data visualization software with basic statistical functions, e.g Tableau.

EXPERTISE ●●●●●
WORKLOAD ●●●●●
REQUIREMENTS ●●●●●

On Site

TYPE 1 Count the number of people that spend time in or next to a natural area in comparison to the number of people who don't

TYPE 2 Record the average time that people spend in or next to a natural area in comparison to the time that of people who don't

REQUIREMENTS

- At least one surveyor per space or experiment.



DIGITAL

A digital study of the relevant green spaces around a location is performed objectively, as it allows comparison to all other places in the city, visited by all kinds of residents and visitors. Scientific research showed that Foursquare and Google Map visit counts can be rather reliable to analyse trends.

ON SITE

An on site survey can help understand how much time people spend in green area and how they interact with it.

HYBRID

Combining the two approaches may be beneficial to gain insights about the scale of importance of each green space, as well finding the potential to attract more visitors.

Case: Ylä-Malmi

Introduction to the case Ylä-Malmin tori

Basic information about the case

From April to August in 2022 there has been a placemaking experiment in Helsinki in Ylä-Malmi square.

In the experiment, modular furniture, that anticipate changes of public space the city is planning to make in the area, have been installed on the square. The furniture include wild flowers, which have been cared for by the local kindergarten.

Our team joined the experiment in June and conducted analysed data gathered on-site with Hypercell and conducted digital anthropological research on Foursquare and Instagram platforms.

Metrics selection process

Since the project of Ylä-Malmin tori was delivered during the holiday season, our team led the selection process of metrics based on a series of practical criteria:

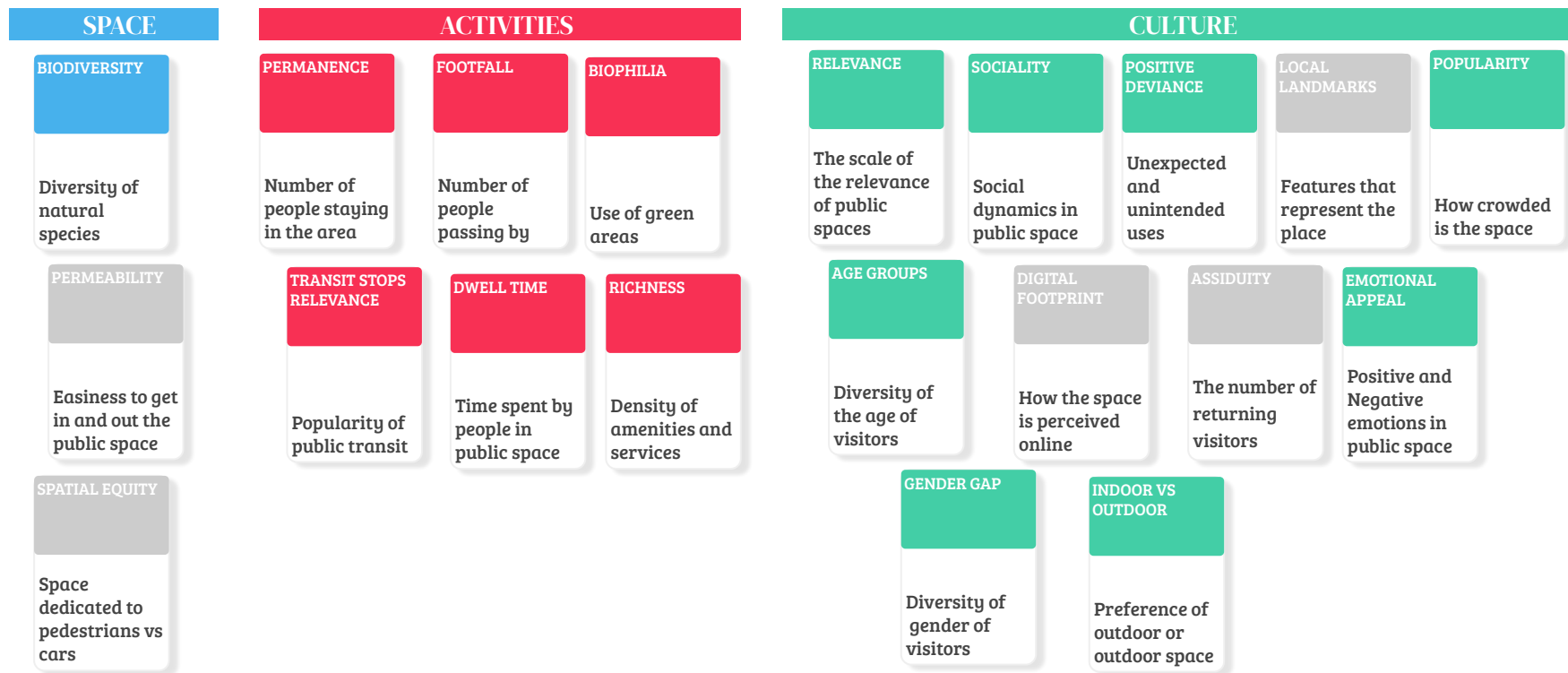
1. The metric can be used to monitor at least one of Helsinki's strategy goals.
2. The metric was simple enough to be potentially be measured during the summer
3. The selection of metrics would lean towards publicly available users' generated data.

A total of 15 metrics were selected based on a preliminary review of the datasets and resources available. The analysis of urban space is limited to 1 metric due to the small size of the experiment and they focus on the elements that it is supposed to improve.

The selection of activity metrics are focused on assessing changes in the users base of the area.

Metrics about the culture of the square were selected with the intent to analyse the potential impact of the experiment on the intangible image of the area.

15 METRICS TESTED IN YLÄ-MALMI



SUMMARY

BIODIVERSITY

Number of different species in the place

Is the main element in (some) pictures

Biodiversity is present in few spots in the square but not enough to have an impact.

FOOTFALL

Number of people passing by

Morning rush

The highest estimated volume of pedestrian traffic is between 9 and 11

RICHNESS

Number of amenities and services

Few activities

The square is not offering a rich variety of activities or amenities, losing visitors that instead lead to the mall even in good weather conditions.

PERMANENCE

Number of people staying in the area

Popular after-work

There are more people staying in Malmi in a given time during the afternoon (14:00 to 16:00)

BIOFILIA

Use of green areas

Not so popular

The nearest park (Örskinpuiisto) had a relatively low number of visits.

SOCIALITY

Social dynamics among people

9% social

Both in public space and in the mall, only 9 in 100 pictures portrayed social activities.

TRANSIT STOPS RELEVANCE

Access points to the place by PT

Popular transit

Public transit stops are among the most popular posts around the square.

DWELL TIME

Time spent by people staying in the area

Morning dwells longer

During the morning (9 to 11) people stay longer in the area. Likely influenced by longer stay of lunch breaks.

POSITIVE DEVIANCE

Unexpected and unintended uses

1 in 100 moments are self-organized

A lack of spontaneous activities and sports despite the open design of the square.

SUMMARY

EMOTIONAL APPEAL

Positive and
Negative
emotions in
the place

Neutral sentiments

Lack of a clear character but
at the same time no strong
negative feelings.

AGE GROUPS

Diversity of
the age of
visitors

Publicness fosters diversity

All age groups together were
found only in 5% of the
sample, however those were
in public space.

POPULARITY

Online
presence of
the place

Steady number of visitors

The presence of the living lab
experiment didn't increase the
popularity of the square.

OUTDOOR VS INDOOR

The
preference for
outdoor space

80% prefer indoor

The shopping mall offers more
activities and opportunities
that are worth taking pictures
of.

GENDER GAP

Diversity of
gender of
visitors

Inclusive across the board

Both indoor and outdoor
spaces are open and inclusive.

RELEVANCE

Scale of the
relevance of
the place for
the city

Ylä-Malmi is a local landmark.

Ylä-Malmin tori is the 5th
most visited place in a 500
meters radius

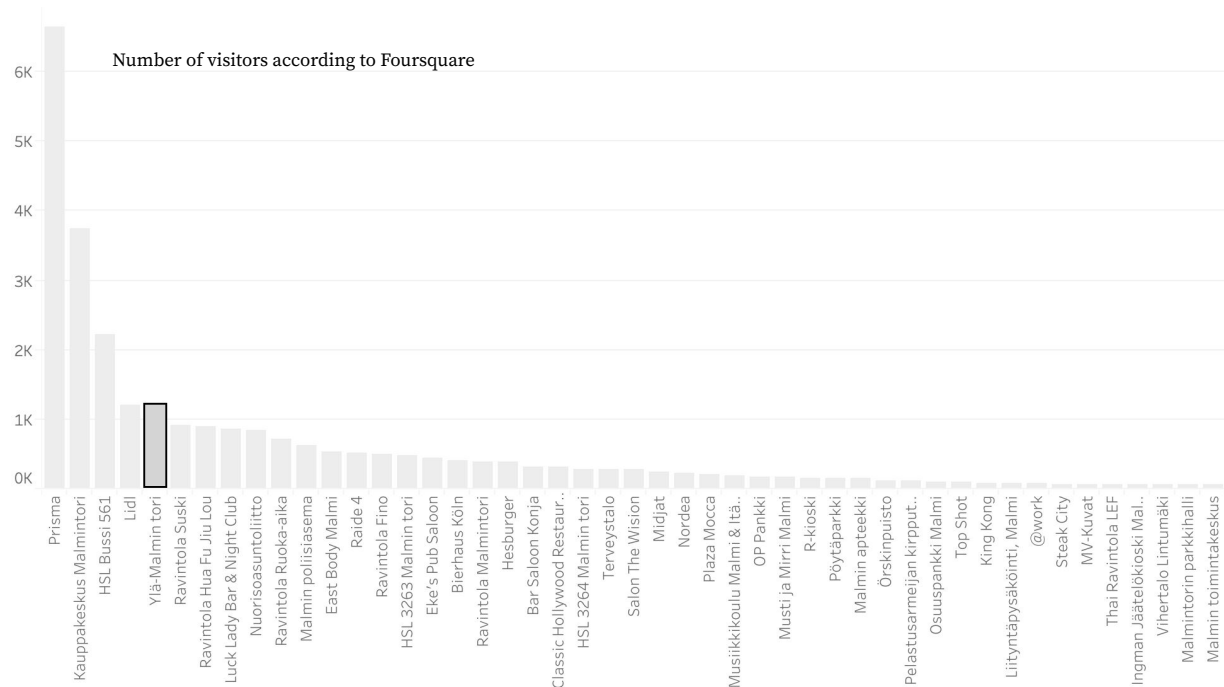
RELEVANCE

Culture

Ylä-Malmi is a local landmark

Ylä-Malmin tori is the 5th most visited place in a 500 meters radius (5min walk), with 1 192 visits. This positions Ylä-Malmin tori as a local landmark and the first of the public spaces. The square has a similar level of relevance in the collective imaginary as the Prisma or Lidl supermarkets, which are part of people's routine and an active part in the construction of their identities.

When observing its position in the city of Helsinki ranking, we find Ylä-Malmin tori at the cluster of local impact, in contrast with large urban-scale impact locations such as the airport (576.675 visits) or Kauppakeskus Kamppi (254 823visits).

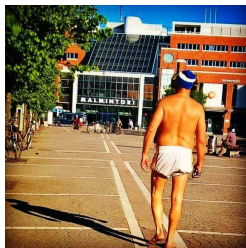


POSITIVE DEVIANCE

Culture

1 in 100 moments were self-organized

In the case of Ylä-Malmin tori on Instagram, only five pictures over one year depicted positive deviance attitudes. We have observed elements of appropriation of public space mostly through art and spontaneous activities. Despite being a large square with a relatively flat surface, only a limited number of skaters and street-sports were observed. Temporary uses and self-organised events or gatherings were also not present in the digital footprint of the square as they usually are in other squares in Helsinki.



POPULARITY

Culture

Steady number of visitors

In the case of the location and hashtags related to Ylä-Malmin tori, only one location presented a visible growth through the period in which this research was conducted. The location presents a growth rate of 0,2% over 14-days increasing from 822 pictures to 825 pictures (Compared to the area of Malmi 35926 to 36094 in the same period).

The popularity tracking over time can be used to observe the impact of specific events, and see how they affect the social fabric of the area. In case of having a street market or a concert, it is possible to track the growth rate over specific period.

malmintori

-  **tissibaariofficial**
Ohjelmaravintola Malmintori
-  **#malmintori**
822 posts
-  **malmintorinparturi**
Malmintorin parturi
-  **tissibaarimalmi**
ohjelmaravintola malmintori
-  **Ohjelmaravintola Malmintori**
Viljatie 4, Helsinki
-  **#malmintorilla**
13 posts

malmintori

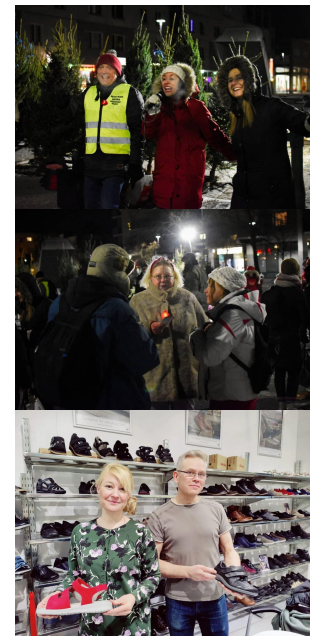
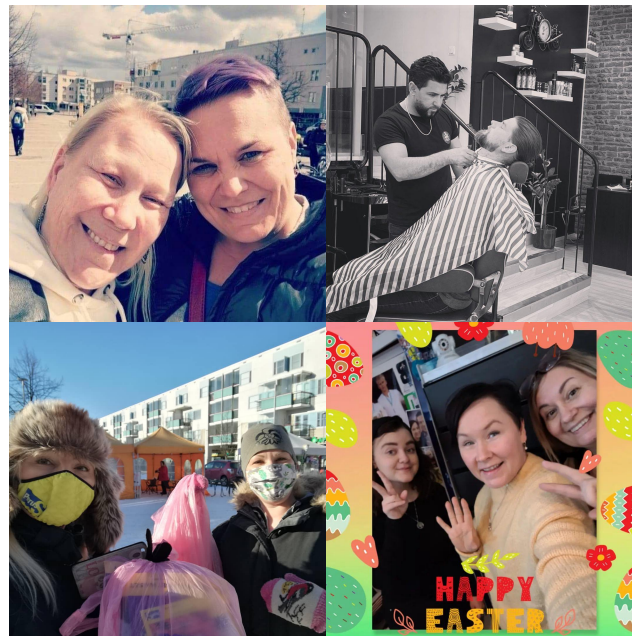
-  **tissibaariofficial**
Ohjelmaravintola Malmintori
-  **#malmintori**
825 posts
-  **malmintorinparturi**
Malmintorin parturi
-  **tissibaarimalmi**
ohjelmaravintola malmintori
-  **Ohjelmaravintola Malmintori**
Viljatie 4, Helsinki
-  **#malmintorilla**
13 posts

GENDER GAP

Culture

Inclusive across the board

Pictures with a good mix of genders point towards the presence of mixed social groups, and therefore an integrated social fabric. Both outdoor and indoor spaces were open and inclusive in equal way.



AGE GROUPS

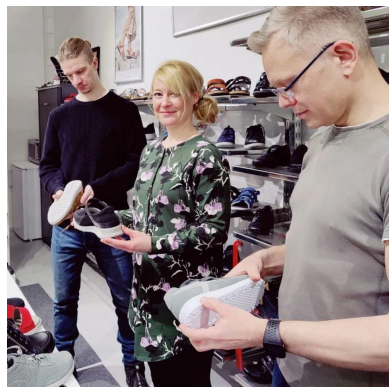
Culture

Publicness fosters diversity

To perform this analysis, we selected all pictures in Ylä-Malmin tori that show more than one person, and we classified the people according to a (subjective) perception of their age. Later, pictures were classified according to the number of age groups present in the image, considering “Child”, “Adolescent”, “Young adult”, “Adult”, and “Senior”.

Only 5% of the pictures were found with the five age groups (maximum integration), while the great majority of pictures were portraying only one age group.

Images with a more age groups together were mainly found in public spaces.



1 age group
71%



2 age groups
24%



5 age groups
5%

EMOTIONAL APPEAL

Culture

Neutral sentiments

The values for emotional appeal indicate if the sentiments related to a place are positive, neutral, or negative. In the case of Ylä-Malmin tori, we analysed commentary and hashtags of publicly shared images on on Instagram, Tripadvisor, Foursquare and Google Places.

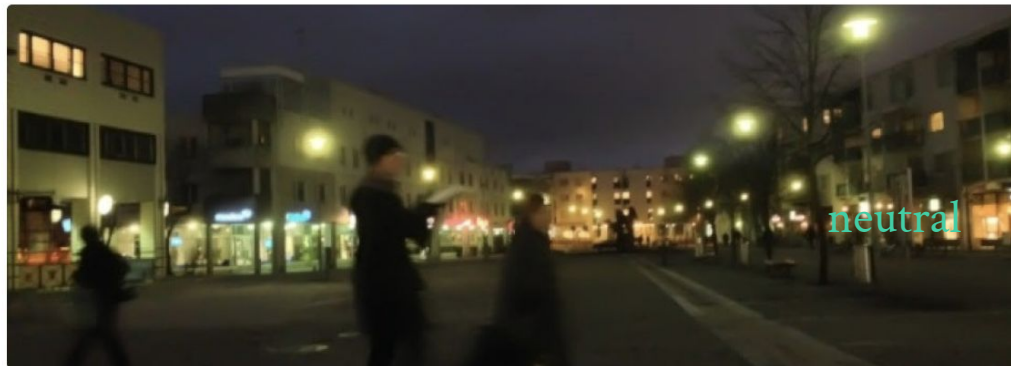
Generally emotions were neutral and presented a rather passive attitude towards carrying out activities in the square.



Kai U.

December 31, 2013

A square is a square.



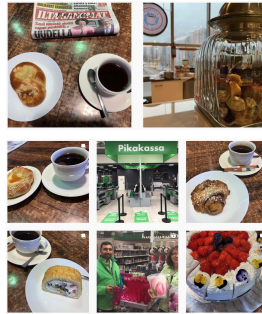
INDOOR VS OUTDOOR

Culture

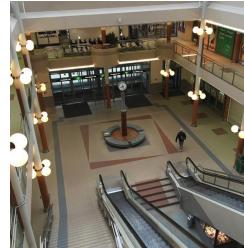
80% prefer indoor

Pictures showing outdoor spaces, regardless of the number of persons or the activity portrayed in them, are an indicator of high quality public space. If the activities tend to happen indoors, it might be an indication that outdoor spaces are not sufficiently attractive or comfortable.

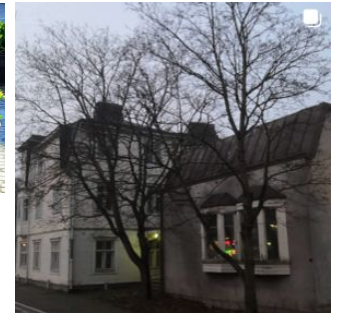
In the sample of pictures posted on Instagram in our area (regardless of the number of people appearing), 82% of the pictures (from a sample of 250 pictures over one year) are taken indoors.



indoor
82%



outdoor
19%



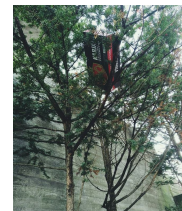
BIODIVERSITY

Space

Is the main element in (some) pictures

Due to the limited number of outdoor pictures (19% of the sample), pictures of biodiversity are also very limited - despite the living lab experiment was themed on biodiversity.

Despite the low number of pictures outdoors, most of them were focuses on the few green and floral elements of the square - suggesting there is demand to increased the area dedicated to green spaces.



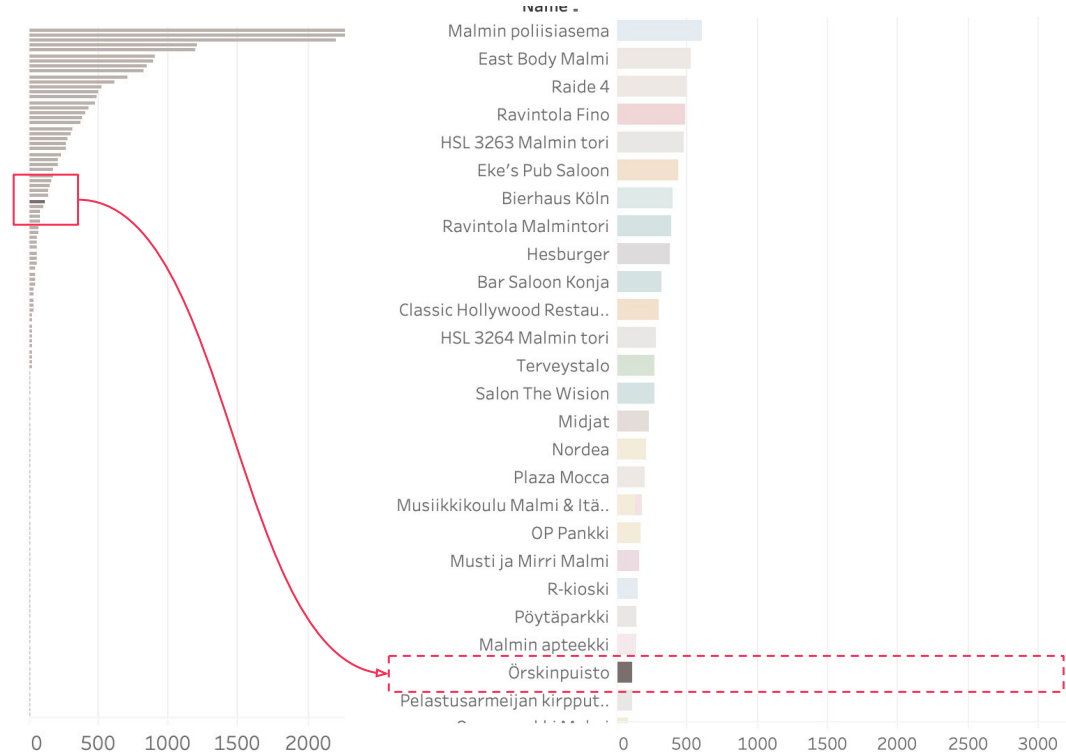
BIOPHILIA

Activities

Relative low popularity of green space

The popularity of green spaces was assessed with Foursquare. A high intensity of use and a low availability of places would point towards a high demand for green. When supply matches availability, it is understandable that the supply is matching the demand for outdoor activities.

In the case of Ylä-Malmin tori, the only available green space in a radius of 500 meters around the study area is the Örskinpuisto park, situated in the second quartile of 112 registered visits (against 1192 registered in Ylä-Malmin tori) pointing towards a low popularity of the green space.



TRANSIT STOPS RELEVANCE

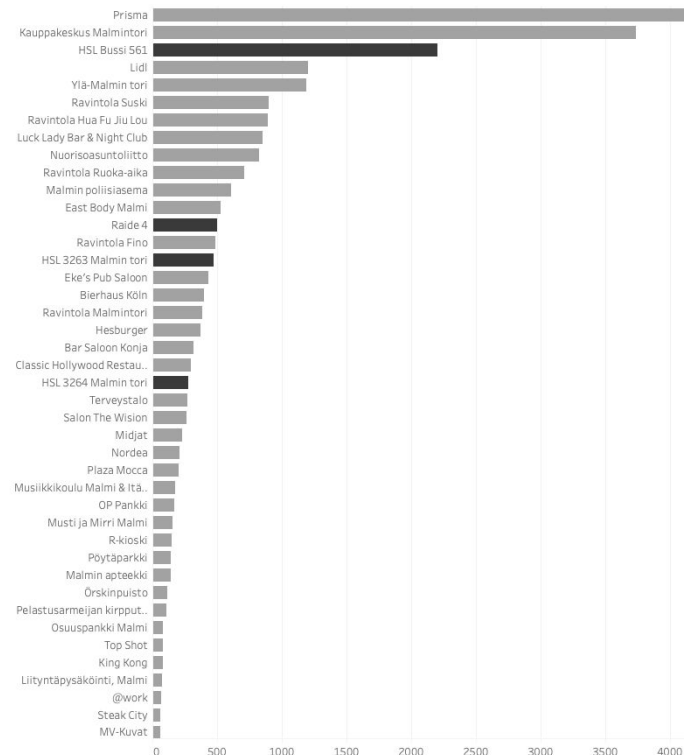
Activities

High popularity of bus stops

Public transit stops are among the most popular posts in the square.

Bus line 561 (2204 visitors), Platform 4 of the Malmi station (499 visitors), Bus stop HSL 3263 (476 visitors), and Bus stop HSL 3264 (277) have relatively high number of users. The potentially high pedestrian traffic generated from those stops was not visible in the square itself, that is mainly by-passed by pedestrian flow.

Future living labs experiment could reimagine how to attract and retain the high pedestrian flow generate by public transit.

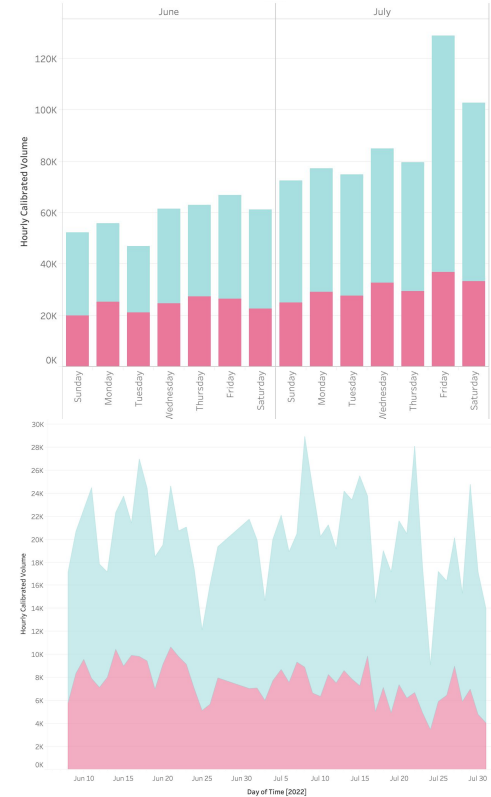
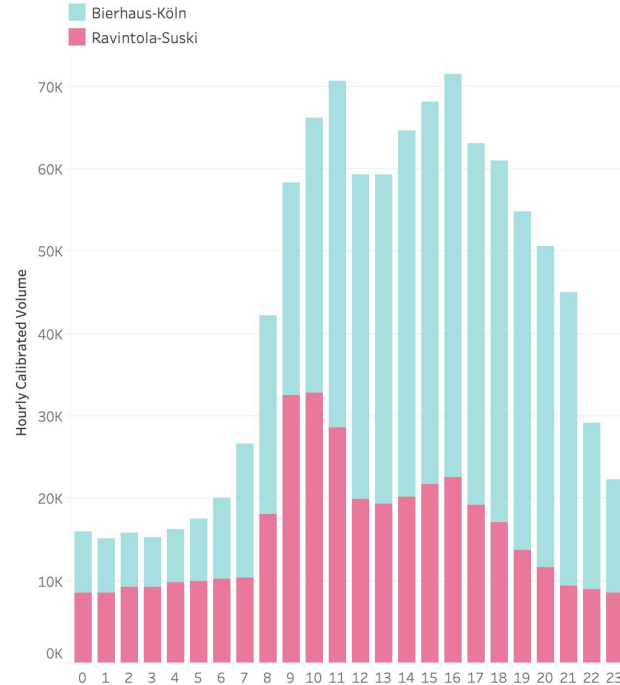


FOOTFALL

Activities

Morning rush

Hypercell data allow the analysis of general trends and it is not ideal to map pedestrian volumes. However we can observe that increased pedestrian volumes occur in the morning between 9 and 11.



DWELL TIME

Activities

Morning dwells longer

People stay longer in the place, as summer weather makes progress.

Closer to Ravintola-Suski, people stay longer in the morning rush hour than in the afternoon. The main hour peak is at 9-10.

Closer to Bierhaus-Köln, people also stay over the evening hours: An after-work peak at 16-17, and long stays until 21-21. This is likely to the presence of bars near the this sensor.

Bierhaus-Köln
Ravintola-Suski



PERMANENCE

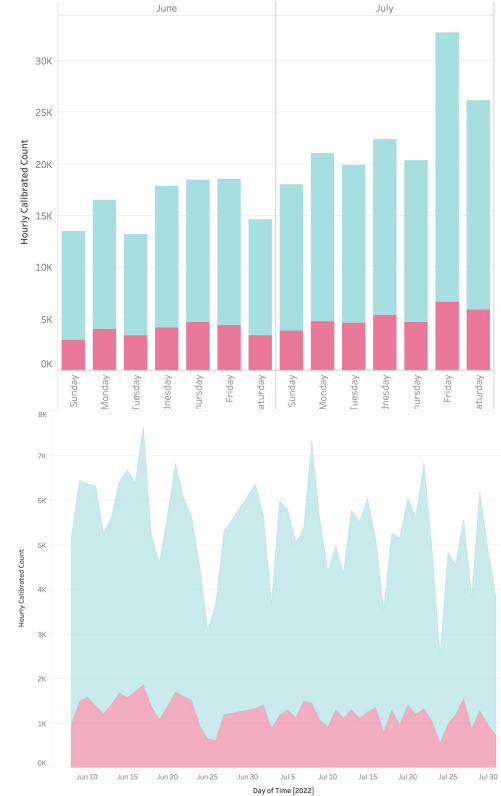
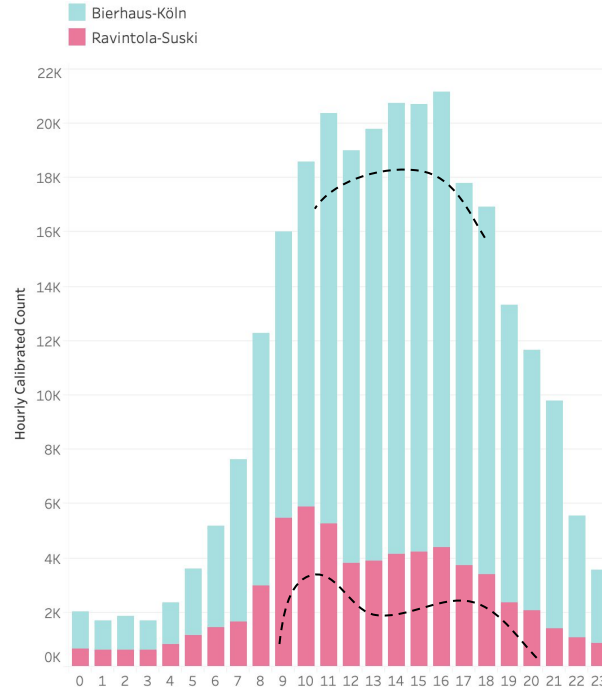
Activities

Popular afternoon

Fridays are the most popular day of the week in July. In June, steady number of people is found Wednesday to Friday.

Permanence (the number of people per hour) near Ravintola-Suski follows working rush-hour trends (morning and evening peaks at office hours start and end) while the area near Bierhaus-Köln follows recreational trends (evening peak with drop at closing time).

It is noticeable that the stationary activities in the area are related to working patterns and office schedules, probably influenced by the commuting node of Malmi station.



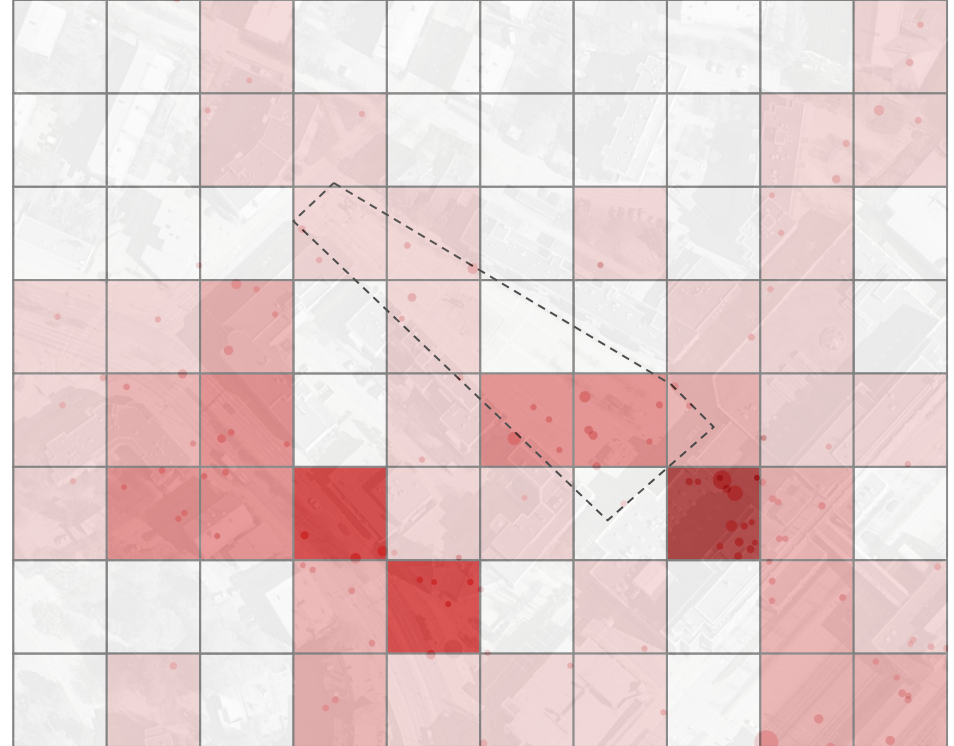
RICHNESS

Activities

Few activities on the square

The shopping mall offers a great variety of popular activities that make it attractive. On the other hand, the square has relatively few activities, and they are less diverse, struggling to attract people.

The living lab experiment brought a different type of activity in the area focused on leisure, however the rekindle the life in square an even greater intervention to enrich the activity mix of the square is needed.



SOCIALITY

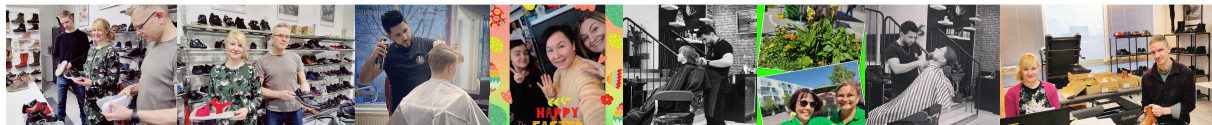
Culture

Is only 9% present

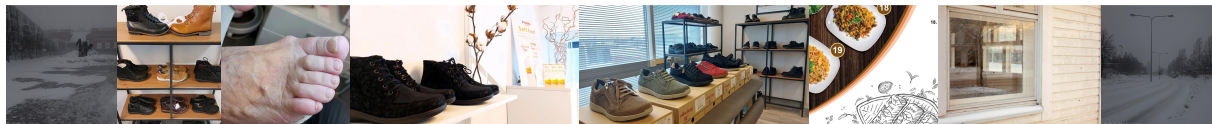
Sociality is underrepresented in the square as much as in the mall. Most of the pictures are only one person or are marketing for the local shops. A minimum representation of sociality is an indicator of a low social cohesion or the sharing one's presence in Malmi on social media is unpopular.

9 pictures in 100 portrayed people engaged in social activities. That is a rather low value if compared with other public spaces or shopping malls in Helsinki.

9% Pictures of sociality



31% Pictures of objects



60% Pictures of one person



Closing remarks

Hypercell data

Hypercell data was utilised in several analysis in this document in substitution of pedestrian counting devices or cameras.

The dataset can be utilised to observe general trends but the data points cannot be used as absolute values to analyse the number of people in the area, their dwell time, movement direction etc. This is because:

- The 2 sensors installed in the square do overlap in a certain area, in which, people will be counted twice.
- The sensors captures users' activities on a 360* radius, therefore we cannot determine the number of users that are actually in the square.

- The sensors detect people that are inside buildings, such as residents or visitors of the mall, making it impossible to count the number of people that are active in public space against people that are active in their apartment or in the mall.

A solution is to gather data from a live video stream provided by existing network attached cameras or stand-alone 4/5G mobile phones - such as FYMA. This will allow to:

- accurately record data for the areas of interest within the square
- Record the mobility mode (pedestrian, cyclists, rider etc), speed and direction of movement.

Before and After

The intervention didn't significantly impact the digital image of the square. By observing Instagram images from Ylä-Malmi, we noted only a few pictures of the experiment or of people actively using it - excluding those promoting it. We cannot determine causation in this brief survey, yet we observed that the most active demographic (25-34 years old) was scarcely present in the square. However, we observed a pick-up of new design elements on Instagram across demographic groups in other Finnish cities. Likely the size of the intervention was not large enough to produce a substantial visual impact in the large square, and the design features may not have been sufficiently appealing to attract different demographics from other areas.

SPIN
UNIT



W
milton

FORUM
VIRIUM
HELSINKI



NORDIC
SMART
CITY
NETWORK



Nordic
Innovation

HELSINKI
INNOVATION
DISTRICTS