Special Session:

The Roadmap for Shaping the ±15-Minute City: Proximity centered Accessibility in Practice

MobilTUM 2024, 10-12 April, Munich

Mixed methods approach to understanding perceived walkability in the 15 Minute-City

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COMUNE DI GENOVA

UNIVERSITY OF GÄVLE

UCL

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Walkable Urban Neighbourhoods

Freeing up Potential for Sustainable and Active Travel by Improving Walking and its Connections with Public Transport

- **Better understand walkability** by identifying supporting and hindering factors for walking

- Co-create and improve current **methods** for walkability assessments

- Explore **links** between **objective** and **perceived** walkability

- Provide policy **recommendations** on how to improve the walkability in urban neighbourhoods
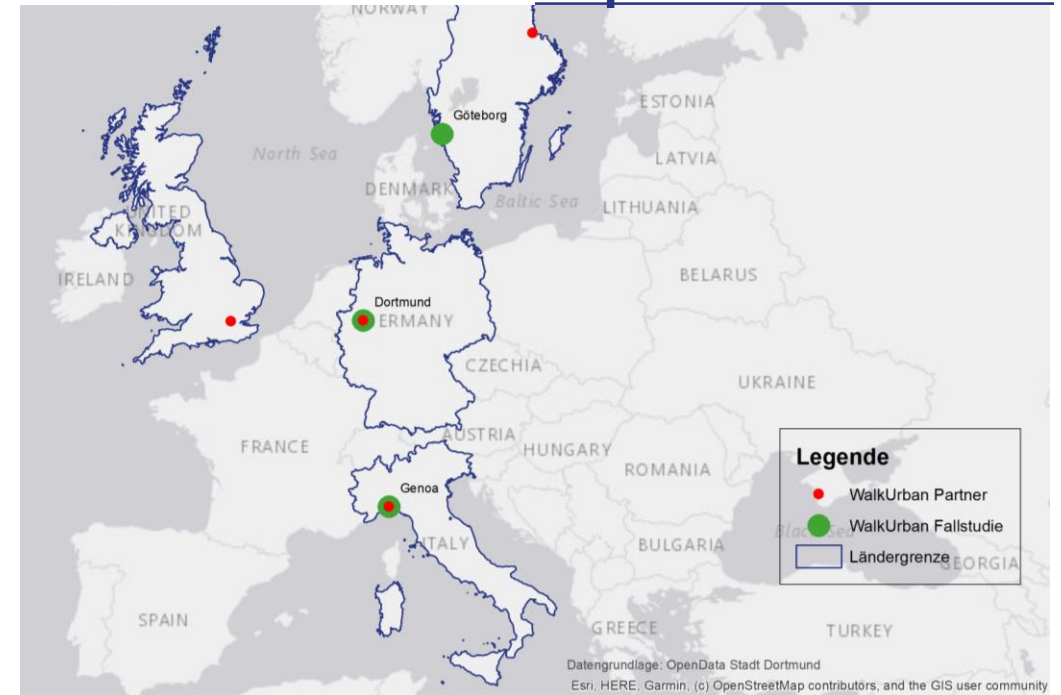
Genoa

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Gothenburg

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Dortmund

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MIXED METHODS APPROACH

Quantitative methods

GIS analysis
spatial modelling
(ILS Walkability Index)

Citizen science
self-assessments
of walking routes

Household survey
on travel behaviour,
attitudes, satisfaction
and perceptions

Objective — Walkability — Perceived

Qualitative method

Visual impaired

Mobility impaired

Walk-alongs
with special
target groups

Older people

Commuters

Children
(age 8-12)

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Södra Kortedala

Kungsladugård

Kreuzviertel/Westfalenhalle

Funkenburg/Ostpark

Medio Ponente

Centro Est

Gothenburg

Dortmund

Genoa

ERA-NET Cofund Urban Accessibility and Connectivity

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Kungsladugård

Södra Kortedala

Kreuzviertel

Funkenburg

ILS Walking Index - Gothenburg (all age groups)

Kungsladugard

Södra Kortedala

ILS-Walkability-Index

🟥	<25
🟧	25 - <50
🟨	50 - <75
🟩	75 - <90
🟩	90 - 100
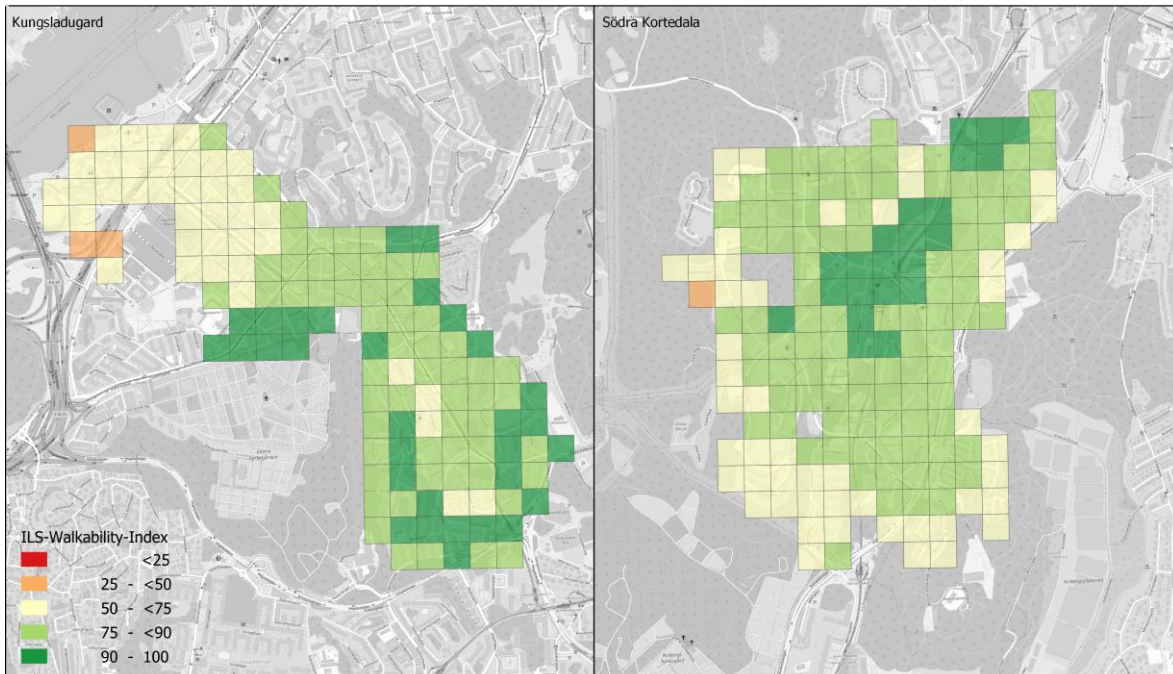
Data: Eurostat (2018); OSM Contributors (2023) ILS (2023); University of Gävle (2023)
Geodata: OpenStreetMap

1:15.000

0   1 km

ILS Walkability Index - Dortmund (all age groups)

Funkenburg

Westfalenhallen
Kreuzviertel

ILS-Walkability-Index

🟥	<25
🟧	25 - <50
🟨	50 - <75
🟩	75 - <90
🟩	90 - 100
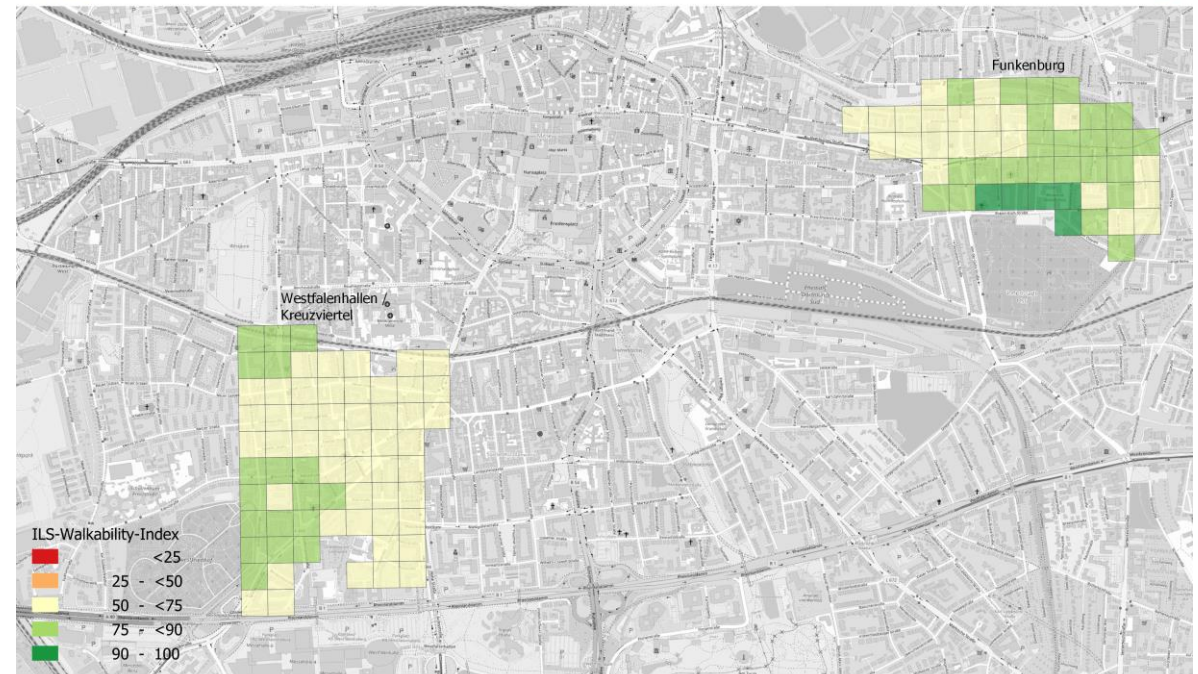
Data: Statistisches Bundesamt (2015); OSM Contributors (2023); ILS (2023)
Geodata: OpenStreetMap

(all maps © WalkUrban/ILS)

1:15.000

0   1 km

Household Survey Results

Same survey - somewhat different distribution methods

- Part 1: Neigbourhood and travel options

- Part 2: Travel patterns

- Part 3: Walking motivations, perceptions and satisfaction
  - Including Perceived Walkability

- Part 4: Most recent walking trip
  - Including Walking Satisfaction

- Part 5: sociodemographics

Photo: Edward Prichard, 2022

Perceived Walkability

Short perceived walkability scale SPWS (De Vos et al. 2022)

To what extent do you agree on the following statements regarding **perceived walkability** in your neighbourhood. 5 Point Likert scale: 1= totally disagree - 5 fully agree)

It is feasible to walk to my destinations It is convenient to walk to my destinations It is comfortable to walk to my destinations It is pleasant to walk to my destinations My neighbourhood stimulates me to walk to my destinations	Perceived walkability to destinations
It is feasible to walk to public transport stops It is convenient to walk to public transport stops It is comfortable to walk to public transport stops It is pleasant to walk to public transport stops My neighbourhood stimulates me to walkto PT stops	Perceived walkability to public transport stops
It is feasible to walk recreationally It is convenient to walk recreationally It is comfortable to walk recreationally It is pleasant to walk recreationally My neighbourhood stimulates me to walk recreationally	Perceived recreational walkability

Factor analysis: 3 factors, 73% of variance explained

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SPWS M 3.8 (SD 0.7)

Dortmund   M 3.7 (SD 0.7)

Genoa   M 3.5 (SD 0.8)

Gothenburg M 4.0 (SD 0.6)

(ANOVA, Sing.diff. posthoc <0.001 DE-SE and IT-SE)

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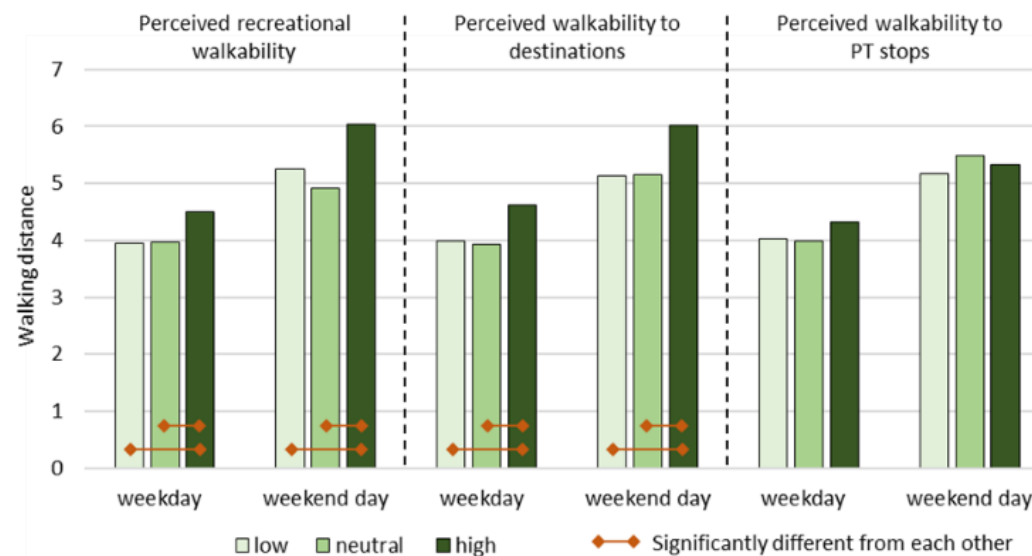# SPWS determinants - and relation to walking

Walking attitudes:

Positive attitudes towards walking (benefits)

Finding walking easy/practical

Perceived walking barriers

- Affect all types of walkability

City and type of neighbourhood

Van der Vlugt et al. (submitted)

Walking Hierarchy and SPWS

- stimulate
- pleasant
- comfortable
- convenient
- feasible
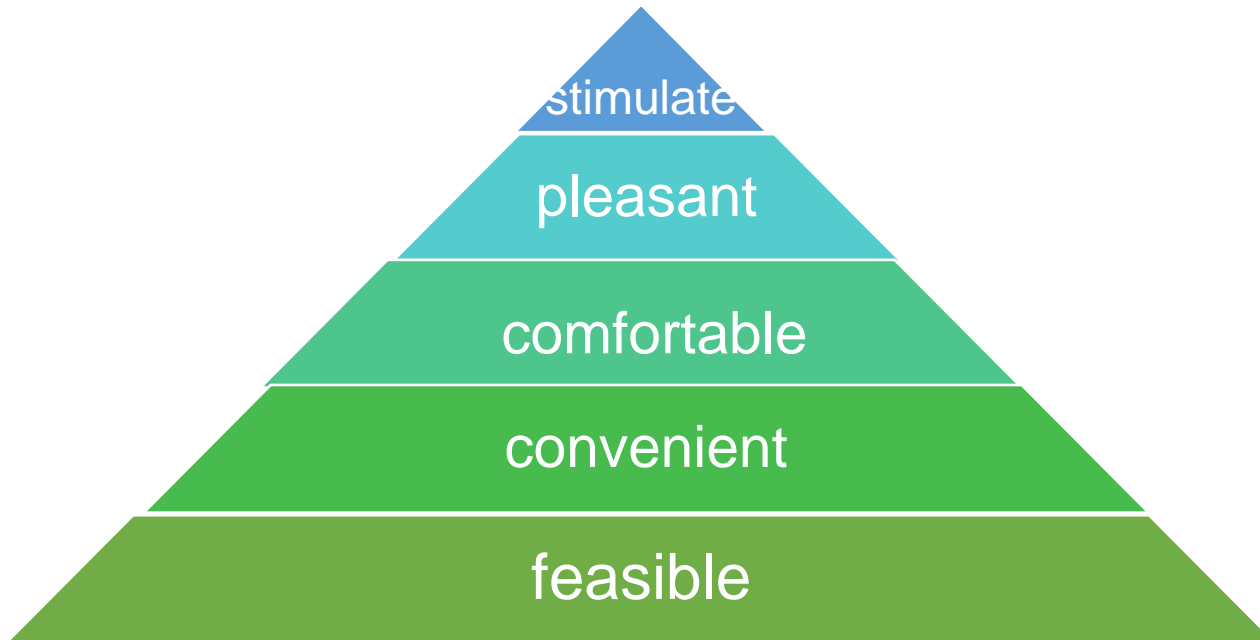
- My walking experience is stimulative

- My walking experience is pleasant

- There is nice street furniture

- I feel safe and secure when I walk

- I feel safe from traffic when I walk

- It is easy to cross the road(s)

- My walking route is clean and tidy

- The pavement has enough space

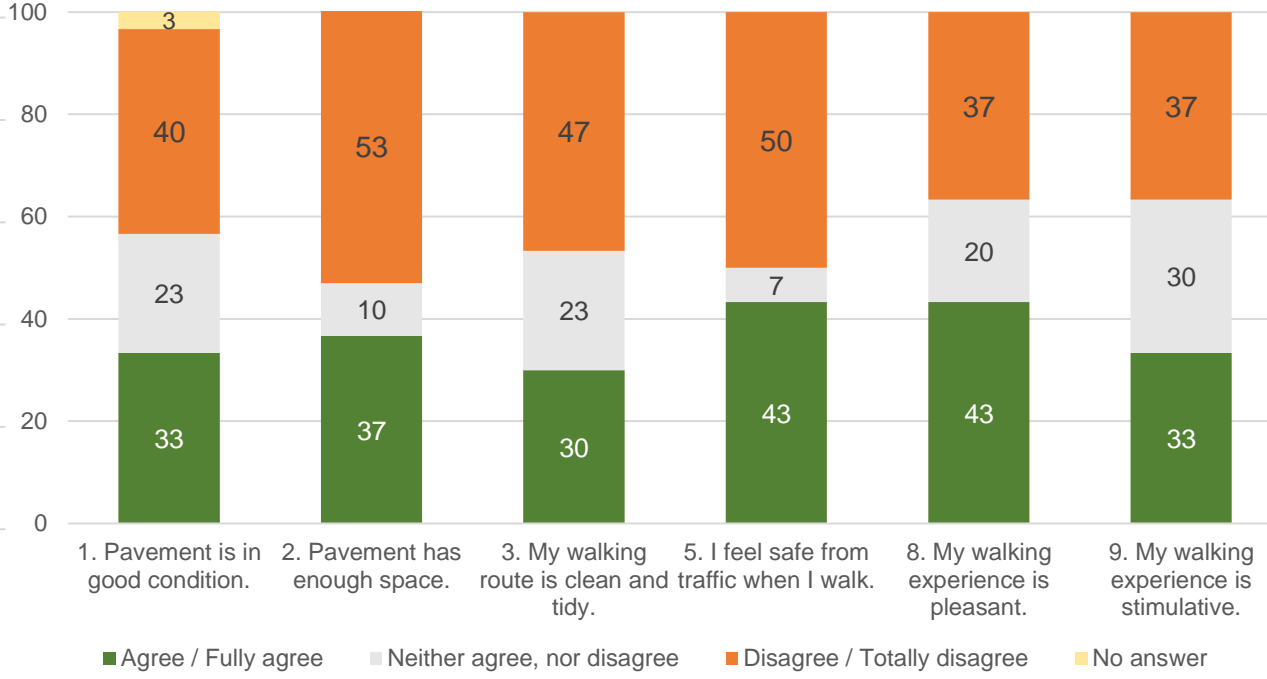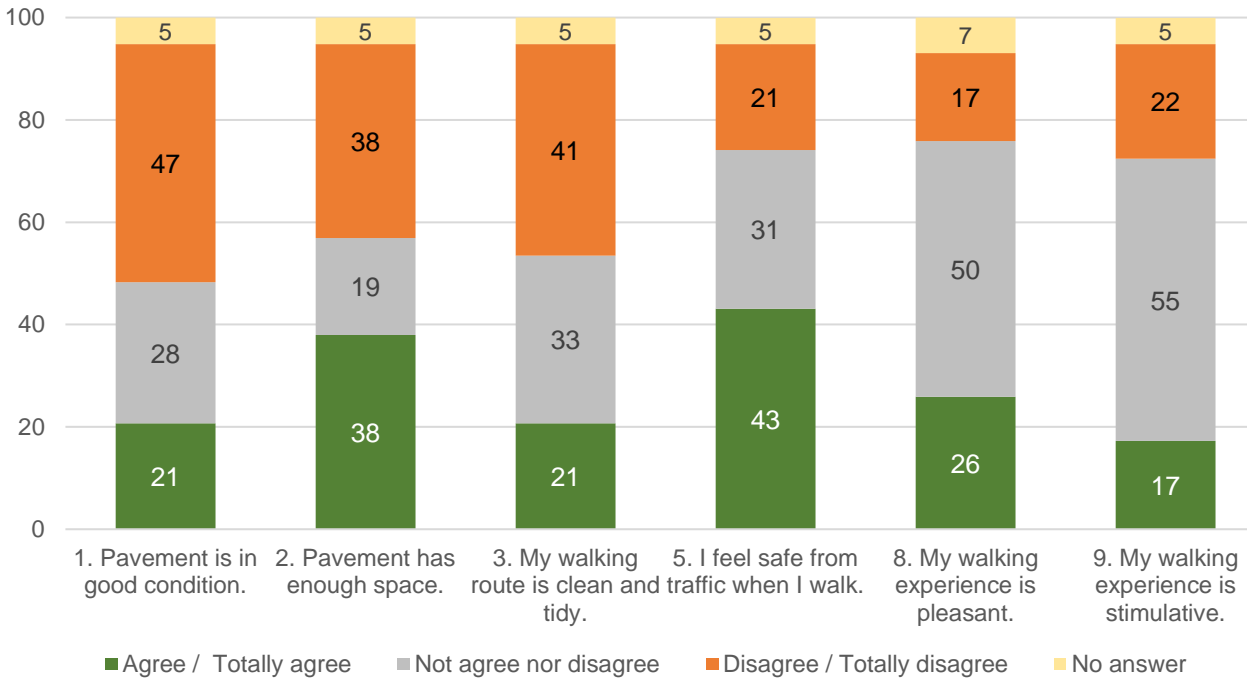- The pavement is in good condition

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Comparisons: Genoa vs Dortmund

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Genoa

	1. Pavement is in good condition.	2. Pavement has enough space.	3. My walking route is clean and tidy.	5. I feel safe from traffic when I walk.	8. My walking experience is pleasant.	9. My walking experience is stimulative.
No answer	5	5	5	5	7	5
Disagree / Totally disagree	47	38	41	21	17	22
Not agree nor disagree	28	19	31	31	50	55
Agree / Totally agree	21	38	21	43	26	17

■ Agree / Totally agree   ■ Not agree nor disagree   ■ Disagree / Totally disagree   ■ No answer

feasible   convenient   comfortable   pleasant   stimulative

Dortmund

	1. Pavement is in good condition.	2. Pavement has enough space.	3. My walking route is clean and tidy.	5. I feel safe from traffic when I walk.	8. My walking experience is pleasant.	9. My walking experience is stimulative.
No answer	3					
Disagree / Totally disagree	40	53	47	50	37	37
Neither agree, nor disagree	23	10	23	7	20	30
Agree / Fully agree	33	37	30	43	43	33

■ Agree / Fully agree   ■ Neither agree, nor disagree   ■ Disagree / Totally disagree   ■ No answer

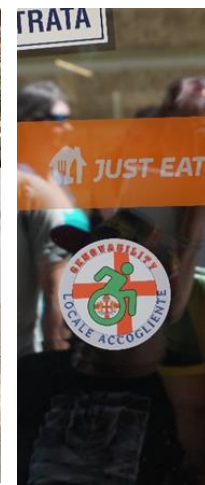feasible   convenient   comfortable   pleasant   stimulative

Walking Route Assessement

General Results: People with disabilities

© all Pictures: van der Vlugt, Otsuka 2022

Important topics

- Greenery / Parks

- Road crossing equipped with a traffic light with sound for blind

- Barrier-free environment

- Parking on tactile landmarks

- Width of the sidewalk

- Lack of crossing options

- Presence of bollards

- Missing landmarks

- Architectural barriers

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(all photos by Otsuka, van der Vlugt, Welsch 2022)

General Results: Older people

© all Pictures: van der Vlugt, Otsuka, Welsch 2022

Important topics

- Green spaces / Parks

- Anxiety to fall

- Traffic safety (traffic light phases)

- Barriers (e.g. parked cars)

- Pavement covering

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(all photos by Otsuka, van der Vlugt, Welsch 2022)

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General Results: Older people & commuters

© all Pictures: van der Vlugt, Otsuka, Welsch, Prichard, 2022

Important topics

- Green spaces / Parks
- Anxiety to fall
- Traffic safety (traffic light phases)
- Barriers (e.g. parked cars)
- Pavement covering

- Adapting to circumstances
- Health
- Safety
- Attractiveness of area
- Public transport is "too good"

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(all photos by Otsuka, van der Vlugt, Welsch 2022)

School children results: Dortmund

Nature				Cleanliness	
Trees	Animals	Birds	Flowers	Rubbish	Dog waste

© all Pictures: van der Vlugt, Otsuka, Welsch 2022

Safety

Transport infrastructure			Traffic speed	Forced detours	Autonomy
Crossings	Traffic lights	Street width	Fast cars	Pavement parking	Prohibition to walk alone

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School children results: Genoa

© all Pictures: van der Vlugt, Otsuka, 2022

Green infrastructure		Safety			Noise	Cleanliness
Flowers	Trees	Transport infrastructure		Traffic speed	Noise pollution	Rubbish
		Crossings	Damage of the pavement	Fast cars		

School children results: Gothenburg

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Adaptation		Safety		
To weather	To family situations	From people	From traffic	From crime

© all Pictures: Prichard 2022

Clarity		Attractiveness		Taking others perspectives
Ability to navigate spaces	Unclear traffic situations	Greenery	Built environment	Empathy with vulnerable road users

School children quotes: Combined

"…we're always scared there…the cars are sometimes really fast. [it is a] very wide, big street."

"so many parked cars, you can't even get past them."

"Then we run across it…And when we were at the other end, we celebrated that we had made it."

"There were many more trees, which I found beautiful."

"But busy streets, like the one we walked along. There were almost no trees at all. You should just plant more trees"

Conclusion

- The inclusion of perceptions is important to gain a holistic picture of accessibility and walkability

- By using a micro-scale and street level assessment we are able to understand how people perceive the built environment and what factors actually stimulate them to walk

- The findings of the project indicate that an inclusive design for walking is especially important for vulnerable groups with special mobility needs

- We recommend that planning practice should use mixed method approaches to gain a holistic picture of citizens actual walkability

WalkUrban Team

Website   walkurban.eu