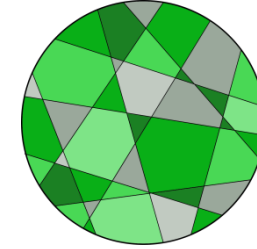


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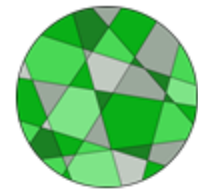
Perception of cultural ecosystem services in relation to different types of urban green infrastructure – case study of Zagreb, Croatia

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Introduction



Urban green infrastructure (UGI) provides numerous ecosystem services to urban inhabitants and contributes to their wellbeing —————> provisioning, regulating, supporting and **cultural** ecosystem services.

„Cultural ecosystem services (CES) are nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences”

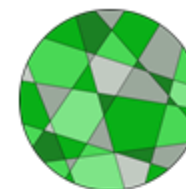
Millennium Ecosystem Assessment (2005)

CES are intangible, yet irreplaceable once lost – especially important in urban areas

UGI use = social factors + spatially explicit factors

To explore CES qualitative and quantitative methods should be applied

Study area

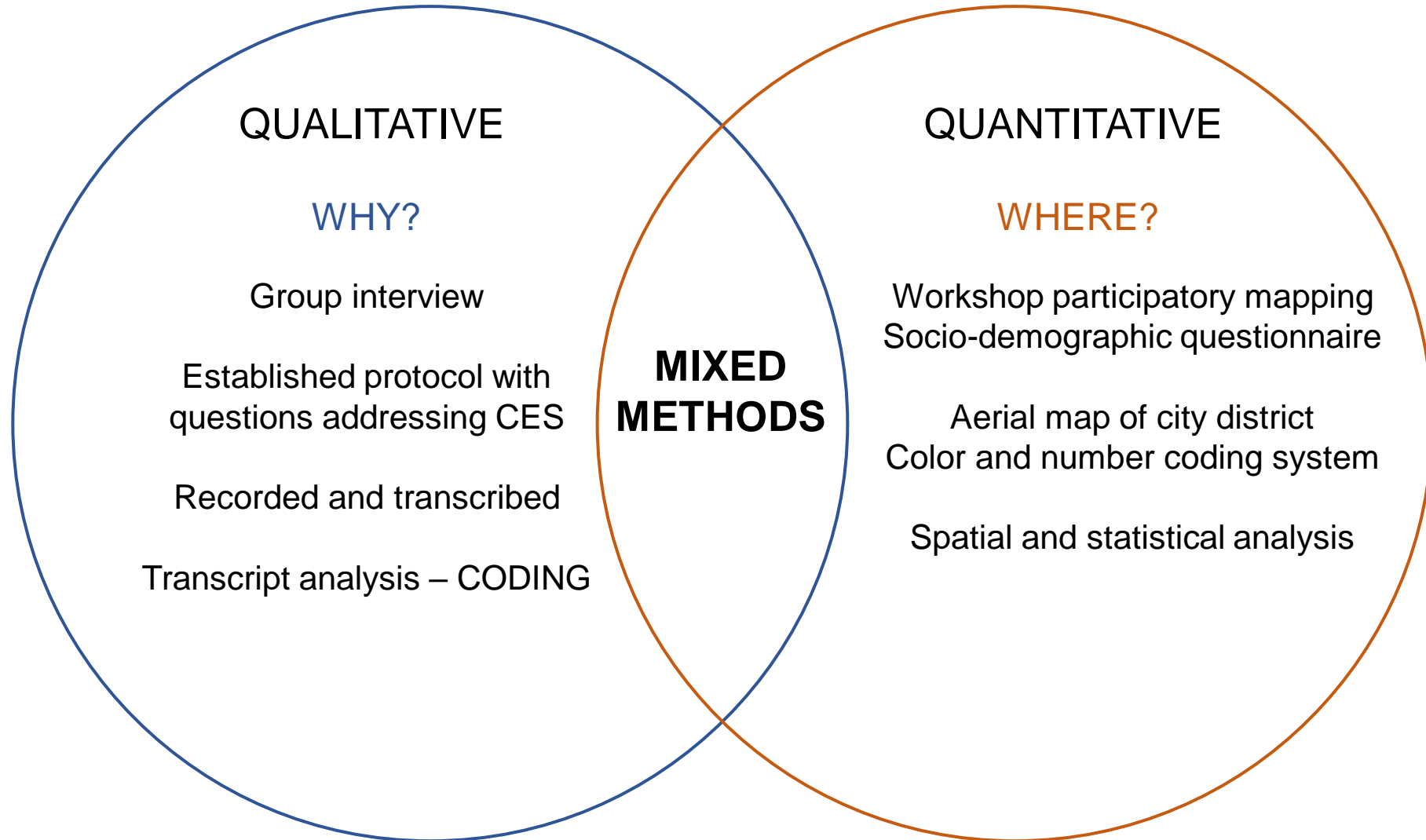
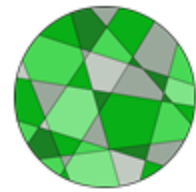


ZAGREB

Geographical location	15° 59' East longitude		
	45° 49' North latitude		
Surface area	641.32 km ²		
Population in 2018 (estimate)	804 507		
Population by gender (2018, mid-year estimate)	Male	47%	
	Female	53%	
Population by age	15-29	16%	
	30-44	23%	
	45-59	20%	
	60≤	26%	
Urban green infrastructure	Parks	surface	59.2 ha
	Grassland	surface	1,085 ha
	Botanical gardens	surface	7.1 ha
	Zoological garden	surface	7 ha
	Tree-lined roads	length	243 km
	Public playgrounds	number	760
	Dog parks	number	10
	Protected natural areas	surface	10,266.1 ha



FOCUS GROUPS



Results

20 focus groups
94 participants

SOCIODEMOGRAPHIC INFORMATION

Variable	Category	% of participants
Gender	Male	43%
	Female	57%
Age	15-29	4%
	30-44	22%
	45-59	34%
	≥ 60	40%
Education	Elementary	3%
	Secondary	31%
	Higher	66%
Work status	Employed	55%
	Unemployed	11%
	Retired	34%

PLACE ATTACHMENT

WHERE?

Forests, parks, tree lines, park-forests, walking paths along the streams, greenery around residential buildings and 10 more

WHY?

Positive memories
Nice place for walking
Good maintenance
Nearness/proximity
Presence of facilities and walking paths

AESTHETICS

WHERE?

Tree lines, forests, parks, trees, private gardens, park-forests, greenery around residential buildings, walking paths along the streams and 5 more

WHY?

Presence of specific tree species
Presence of trees in general
Beautiful views
Presence of colorful leaves
Presence of water bodies

RECREATION

WHERE?

Forests, parks, tree lines, walking paths along streams, park-forests, children playground, greenery of sports and recreational facilities, greenery around residential buildings, private gardens and other UGS, greenway

WHY?

Walking
Bicycling
Jogging
Grilling
Hunting, Mountain climbing, Mushroom picking,
Picknicking, Skating, Observing nature

EDUCATION

WHERE?

Forests, parks, greenery of educational facilities, park-forests, greenery around residential objects, greenery of sports and recreational facilities, green systems, and 2 other

WHY?

Closeness to schools and kindergartens,
Existence of facilities (e.g. hunting lodge)
Presence of water bodies or geological formations (caves or significant rocks)
Historical parks
Name tags on trees

CULTURAL IDENTITY

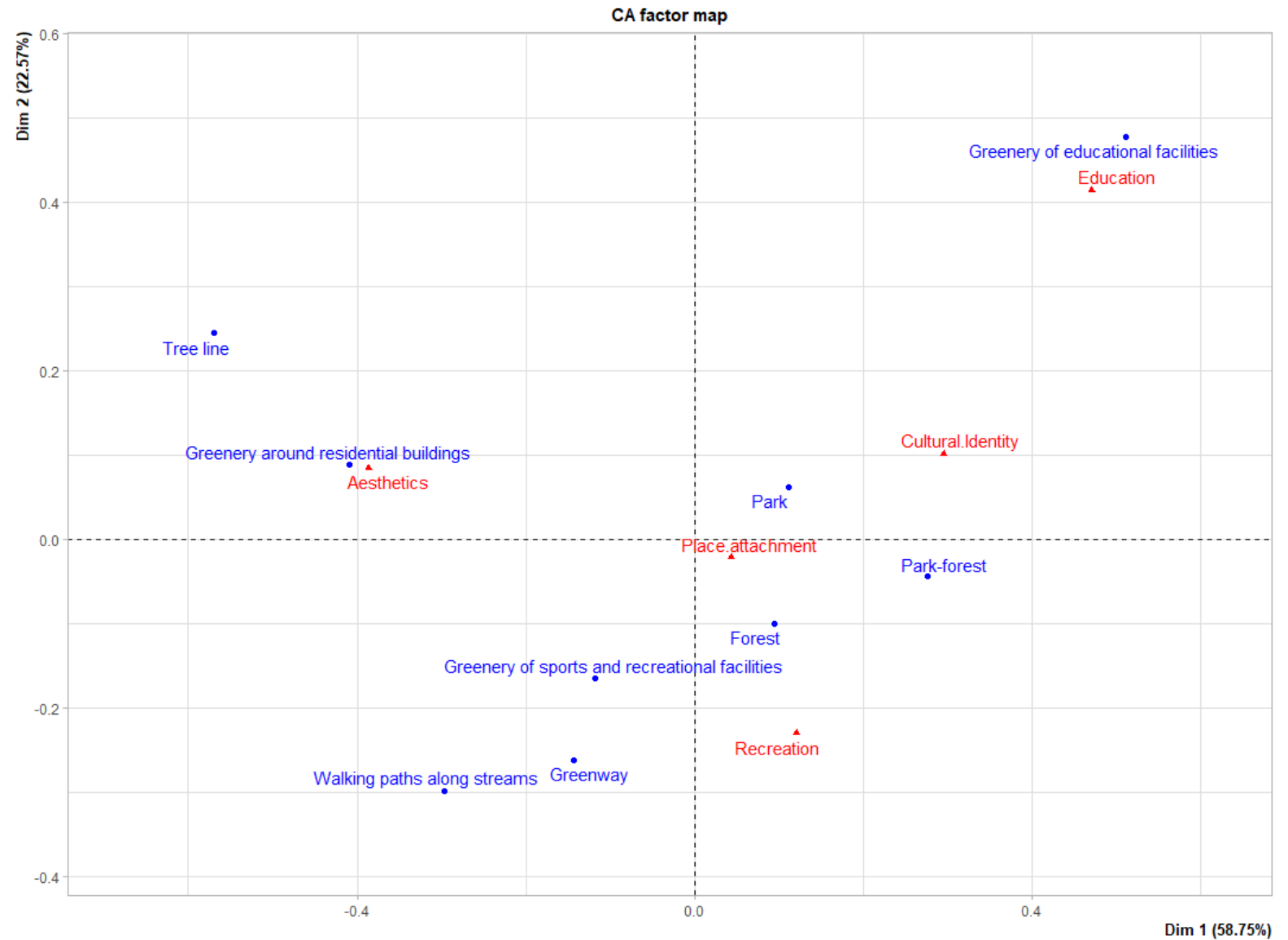
WHERE?

Parks, forests, park-forests, greenery of sports and recreational facilities, tree lines, walking paths along streams, greenery around residential buildings, greenway and 2 other

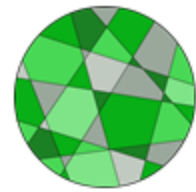
WHY?

Popular meeting and/or recreational place
A symbol of the neighbourhood or the city
Interesting story
Other

CORRESPONDENCE ANALYSIS OF CES REGARDING MOST PRONOUNCED TYPES OF UGI BASED ON COLLECTED MARKER DOTS IN FOCUS GROUPS

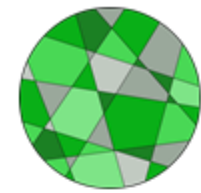


Summary

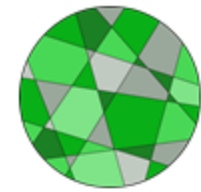


- Place attachment, Aesthetic and Recreation were more recognized than Education and Cultural identity – confirmed in both qualitative and quantitative analysis
- Forests and parks were consistently those most pronounced in relation to investigated CES, however, other types of UGI were proved important as well
- CES categories were sometimes overlapping – same spaces people consider dearest (place attachment) and aesthetically appealing, other find dearest, beautiful and use them for recreational purposes
- Indication that recreation was an underlying goal of interaction with UGI
- Trees are important part of UGI, as well as for CES perception and use

In conclusion



- We explored how people perceive and use UGI in the city of Zagreb in relation to CES
- Qualitative studies of CES, those at the city-scale, and those addressing various types of UGI are still rare
- First such study in our study area
- Small-scale participatory mapping can yield more detailed view on CES perception and use
- Qualitative and quantitative approaches complement each other
- Relevant information for urban and UGI planners – public perception should be included
- The results will be informative for fine-tuning of PPGIS online questionnaire in the second phase of the project



THANK YOU FOR YOUR ATTENTION!

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