

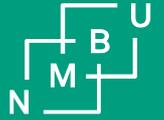
Compact city and quality of life

Empirical findings and implications for urban planning

BYBY Conference 13 November 2018

Kostas Mouratidis

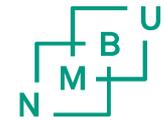
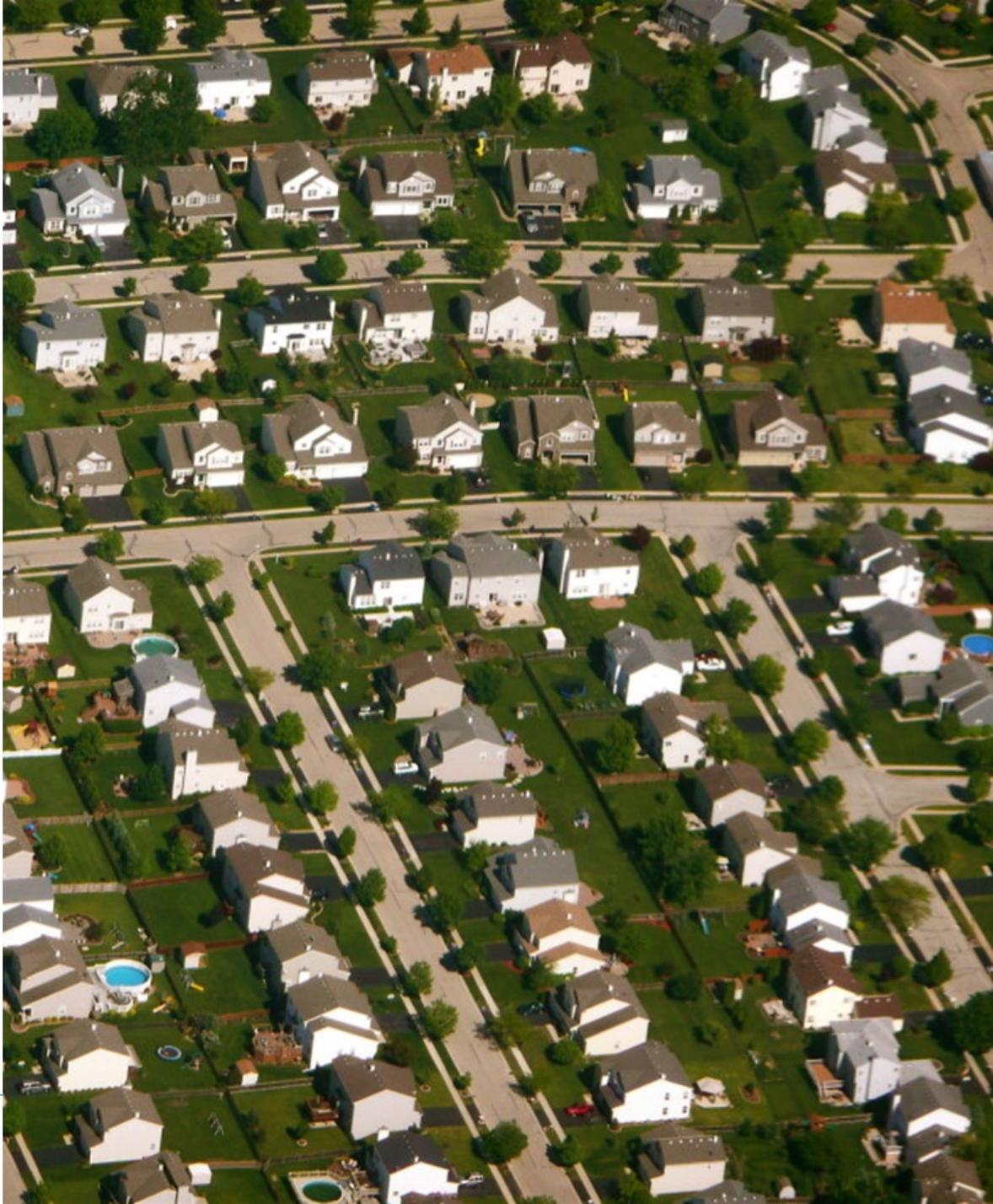
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1. Motivation



Can cities be both environmentally-friendly and human-friendly?



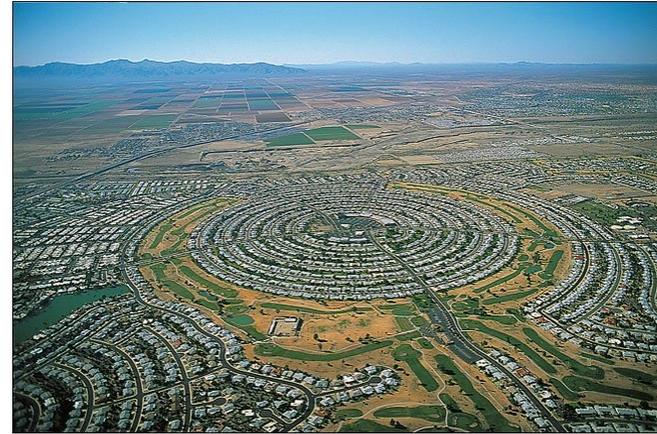




Urban sprawl (low-density, car-based urban development) is the **most environmentally harmful type of development**

Urban sprawl's environmental impact

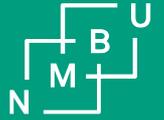
- Higher transport-generated emissions
- Higher pollution
- Loss of land
- Loss of biodiversity
- More city infrastructure
- More resources for buildings



Can environmentally-friendly development be human-friendly?

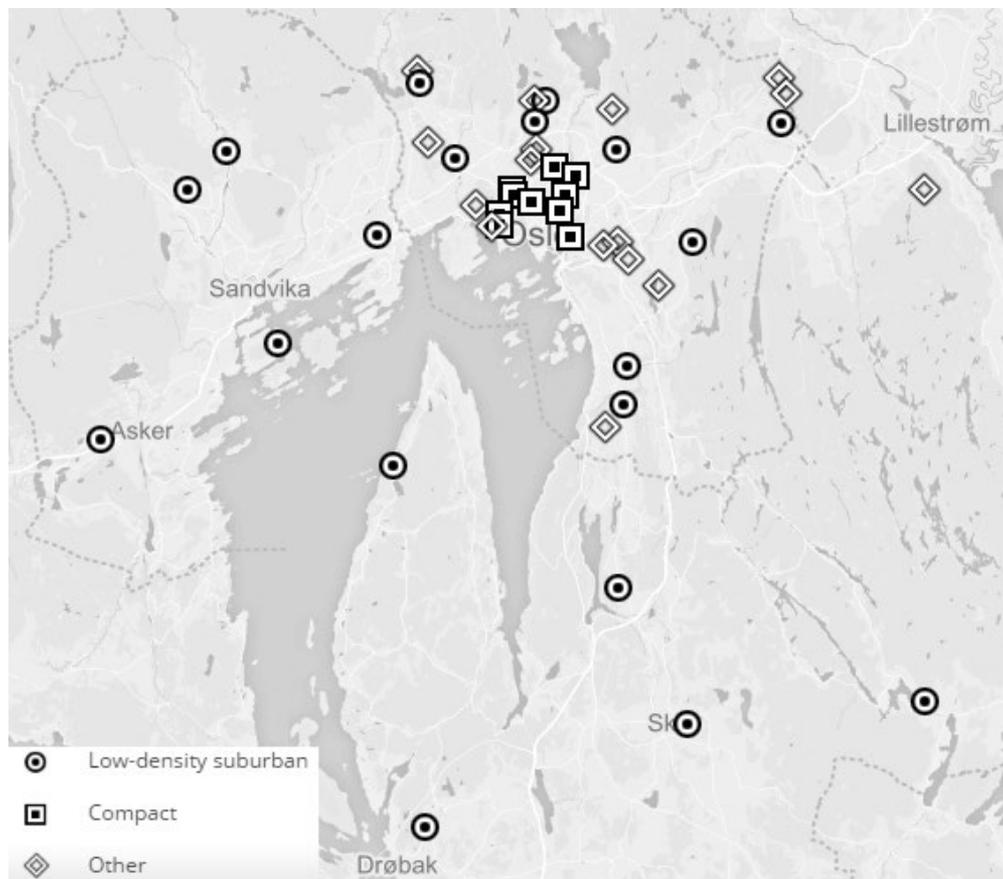
- Can compact city promote quality of life?
- If so how?





2. Research strategy

Data



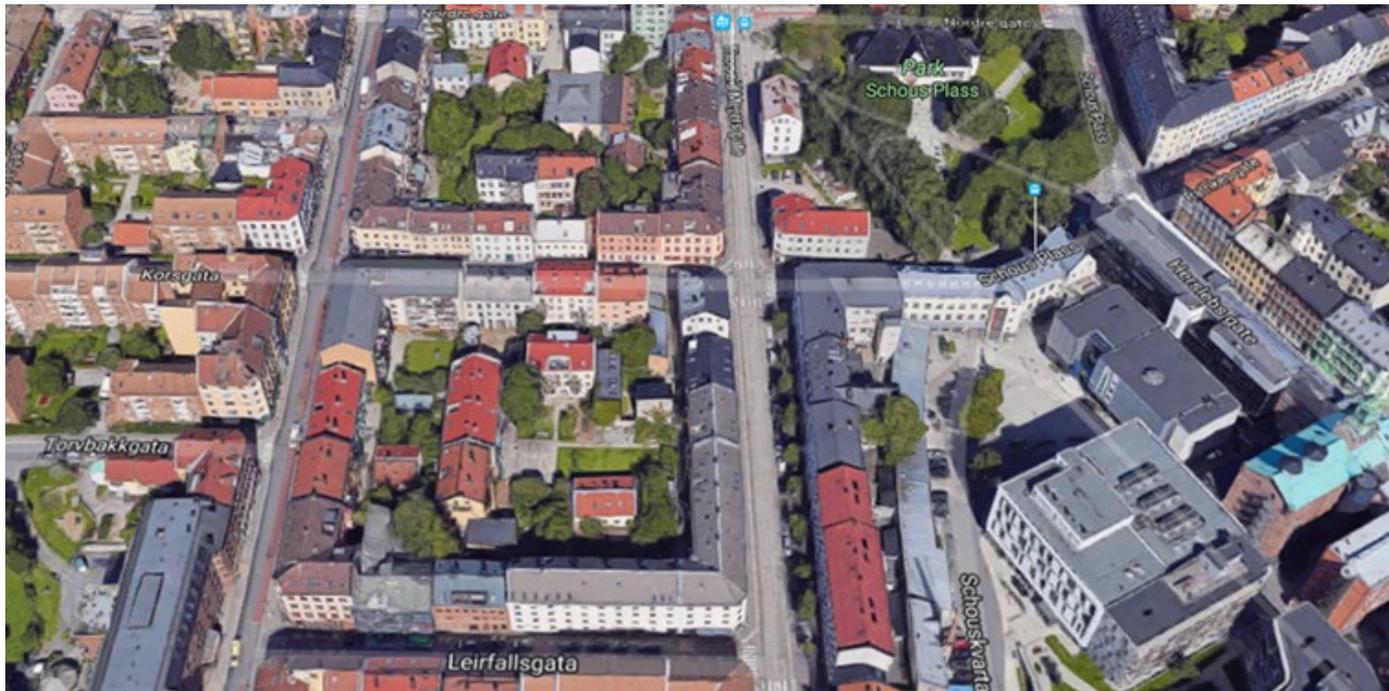
- Study area: Oslo metropolitan area
- Survey
 - 45 neighborhoods
 - Random sample selection
 - N = 1344
- In-depth interviews
- GIS data on physical attributes (e.g. densities, distances, facilities, public transport, tree cover)

Oslo as case area

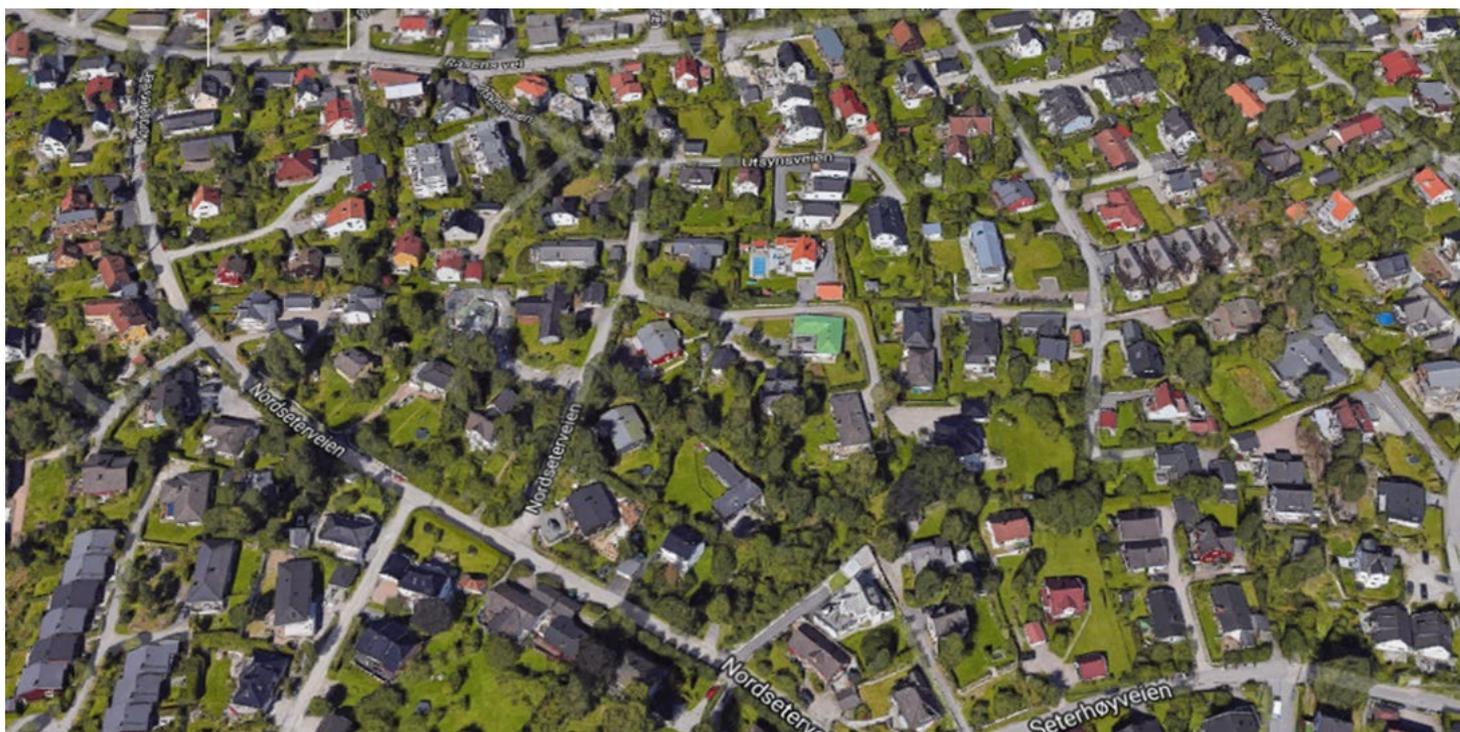
1. Diverse urban form types: low, medium, and high densities
2. Low inequalities between urban form types
3. Ongoing urban densification



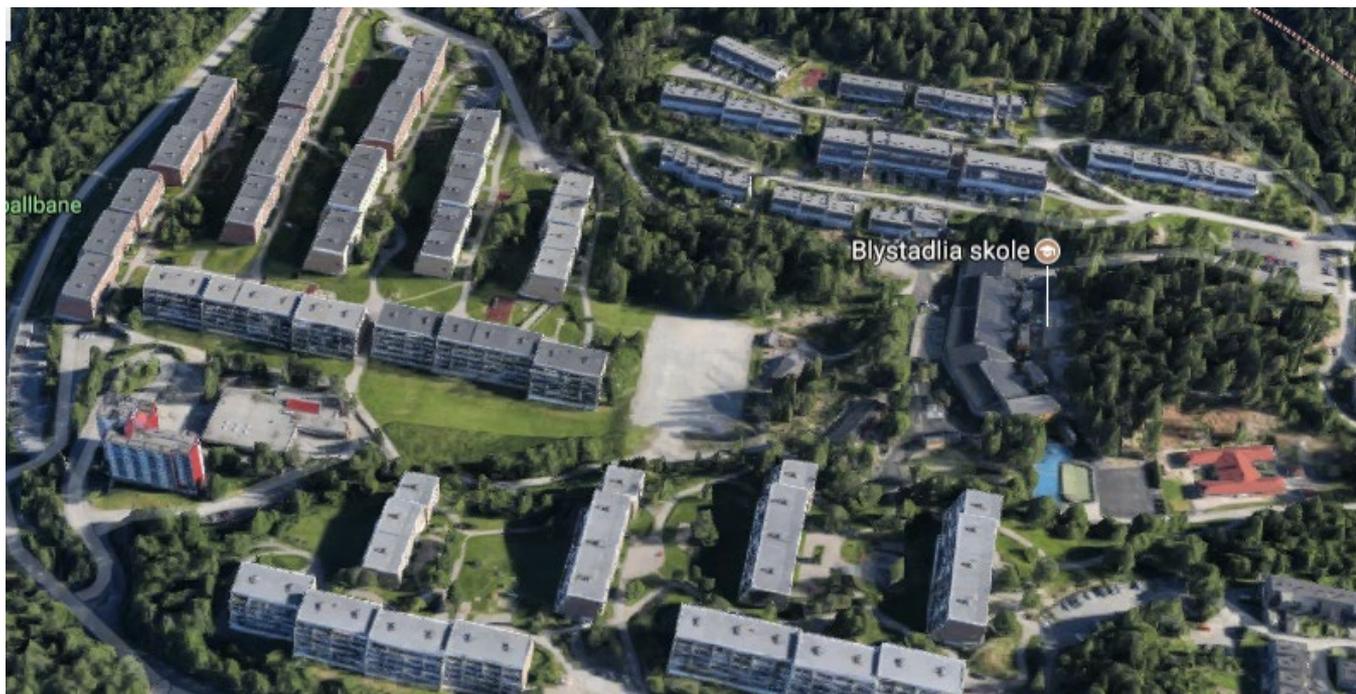
Compact urban areas

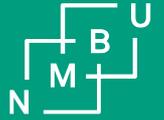


Sprawled suburbs



Medium-density modernist areas





3. Key findings



Key findings

- A. Social life**
 - B. Travel satisfaction**
 - C. Neighborhood satisfaction**
 - D. Health, anxiety, life satisfaction, happiness**
 - E. Problems in compact urban areas**
-



Key findings

- A. **Social life**
 - B. Travel satisfaction
 - C. Neighborhood satisfaction
 - D. Health, anxiety, life satisfaction, happiness
 - E. Problems in compact urban areas
-

A) Social life



What is important for a good life?



Friends, social... Social life is very important. I think that is the most important of all.

(Male, suburban area resident, 46 years)

...it's more of a personal nature. You know... You know... Relationships and stuff like that.

(Male, suburban area resident, 36 years)

To have good friends, to have a nice job. Good colleagues. To feel important. To feel that you are part of society and you can contribute and give something back.

(Female, suburban area resident, 62 years)

Time to spend with my friends and family. And...

(Female, compact area resident, 32 years)

The people are the most important things to me. Nice, interesting people around me.

(Female, compact area resident, 52 years)

Friends, family...

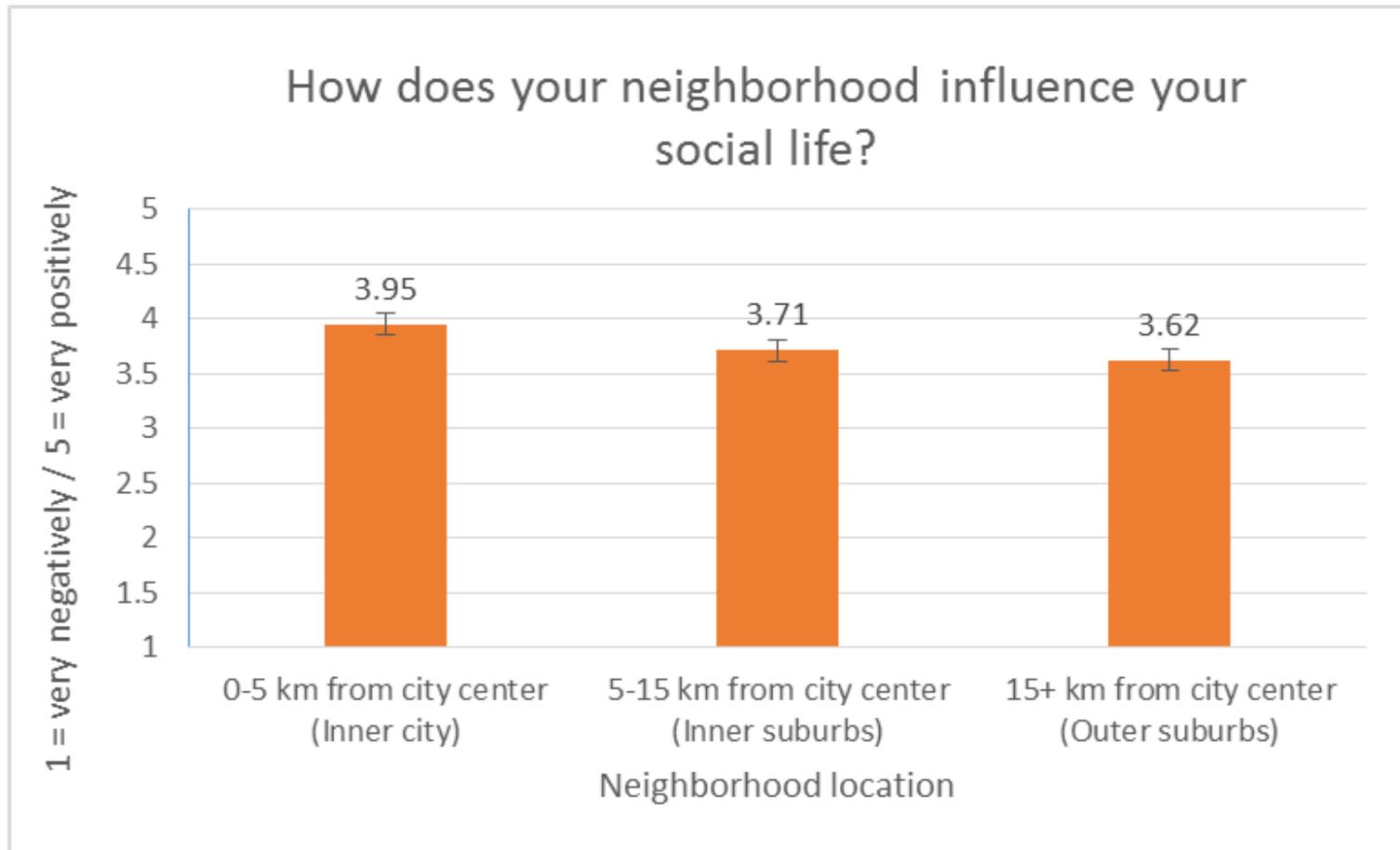
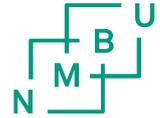
(Female, compact area resident, 39 years)

Of all things
which wisdom
provides to make
life entirely
happy, much the
greatest is the
possession of
friendship.

- Epicurus

QuotePixel.com

Social life



Mouratidis, K. (2018). Built environment and social well-being: How does urban form affect social life and personal relationships? *Cities*. 74, 7-20.



Social life

I hope I will have more time to do things after work [*when I move more centrally*]. And that would be easier. But mostly I hope I can catch up with my friends more often.

(Female, suburban area resident, 30 years)

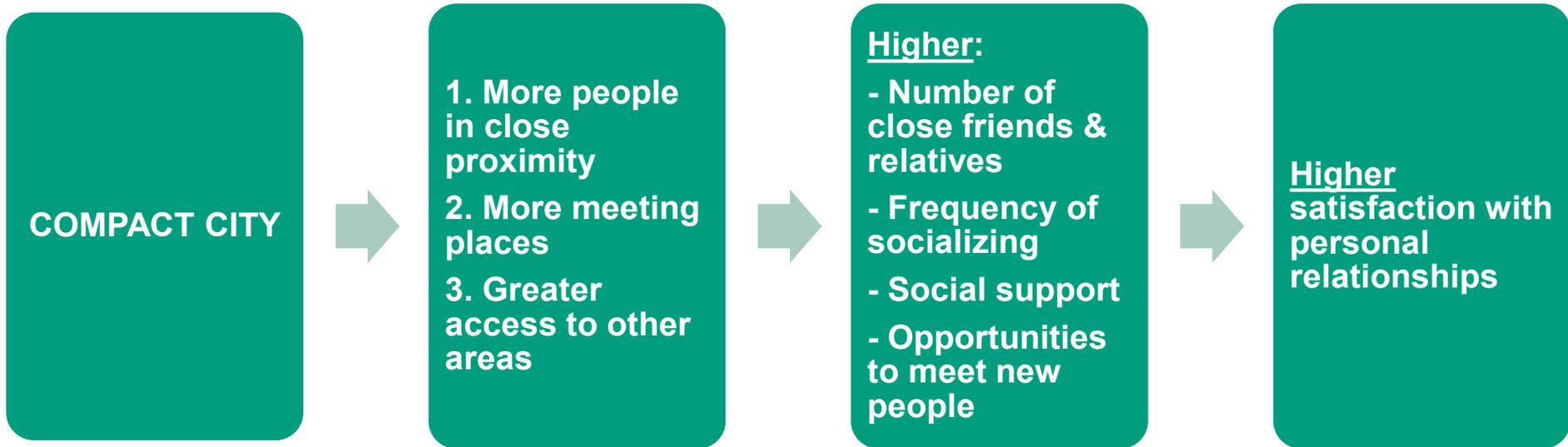
I'm more social there [*in compact area*] than I was before [*in low-density suburban area*] so I do like that, yeah.

(Female, compact area resident, 52 years)

It makes it easier to relations and stuff. More urban...

(Female, compact area resident, 39 years)

Social life



Social life

- **Personal relationships satisfaction:**
compact-city residents > low-density suburban residents

- Compact-city residents:
 - (a) **more close relationships**
 - (b) **socialize more frequently**
 - (c) **higher social support**
 - (d) **more opportunities to meet new people**



Mouratidis, K. (2018). Built environment and social well-being: How does urban form affect social life and personal relationships? *Cities*. 74, 7-20.



Key findings

- A. Social life
 - B. Travel satisfaction**
 - C. Neighborhood satisfaction
 - D. Health, anxiety, life satisfaction, happiness
 - E. Problems in compact urban areas
-

B) Travel satisfaction





Travel satisfaction

Depends mostly on:

- Trip duration
- Travel mode

Trip duration to main occupation

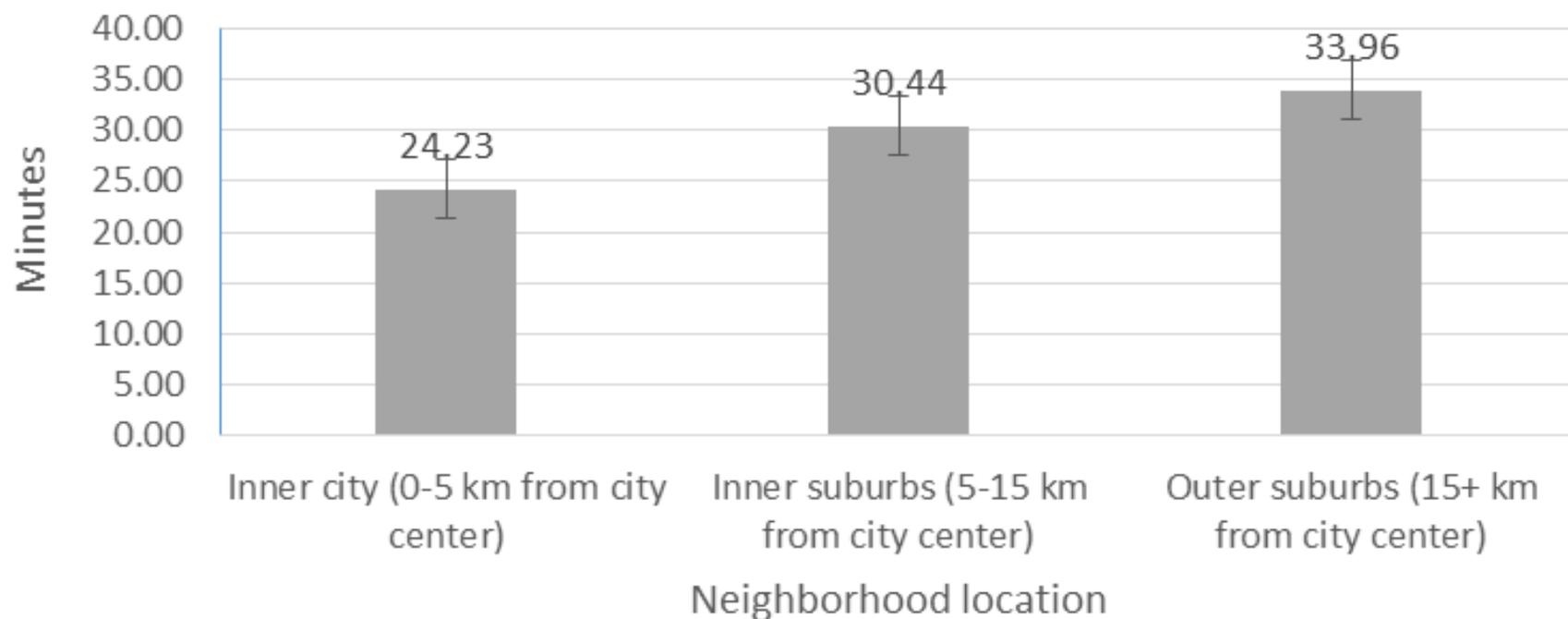
Trip duration: **shorter in compact urban areas**

- Higher neighborhood densities
- Shorter distances to city center
- Shorter trip duration

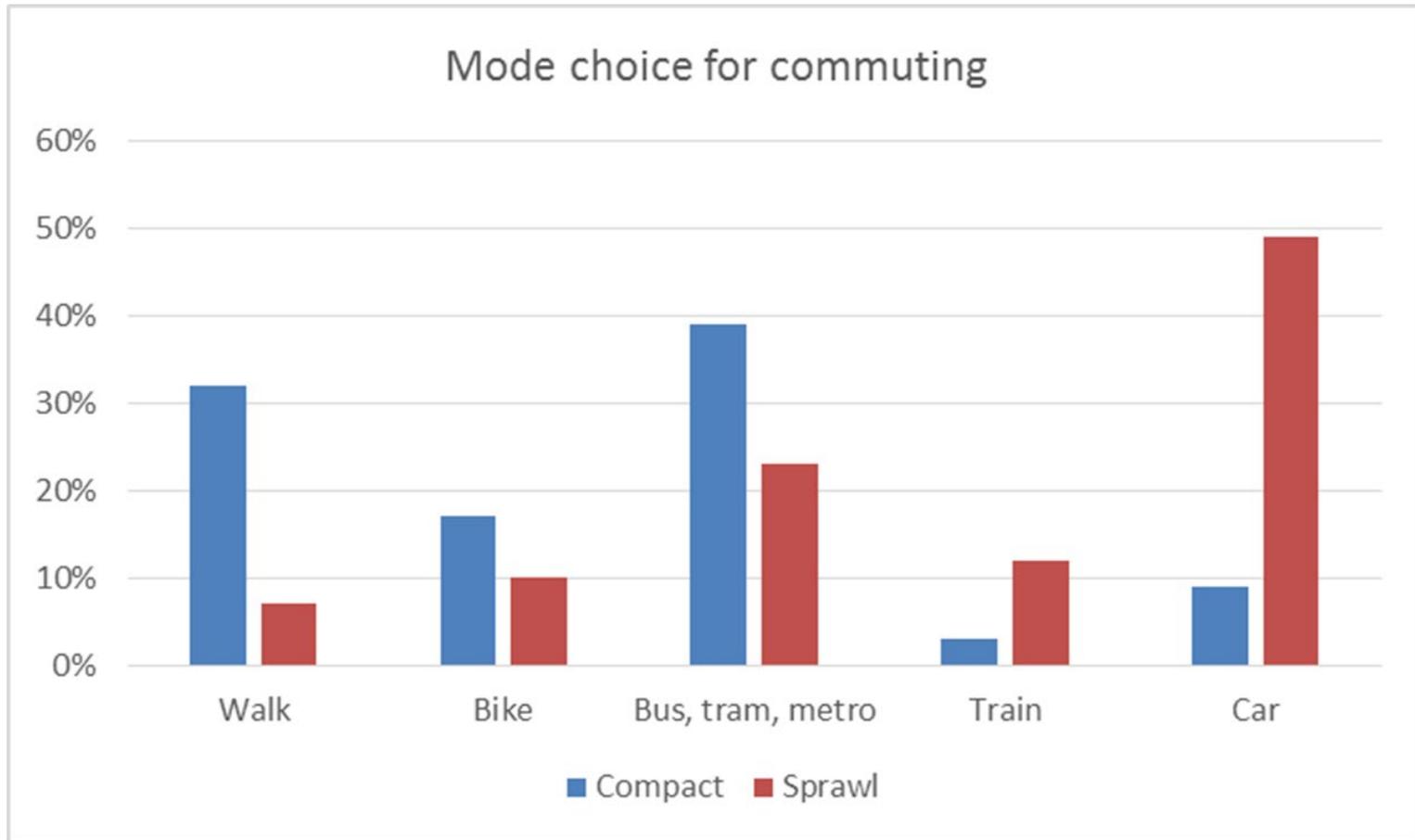


Trip duration

Trip duration to main occupation



Travel mode choice



Mouratidis, K., Ettema, D., & Næss, P. (2018). Urban form, travel behavior, and travel satisfaction. *Forthcoming*.

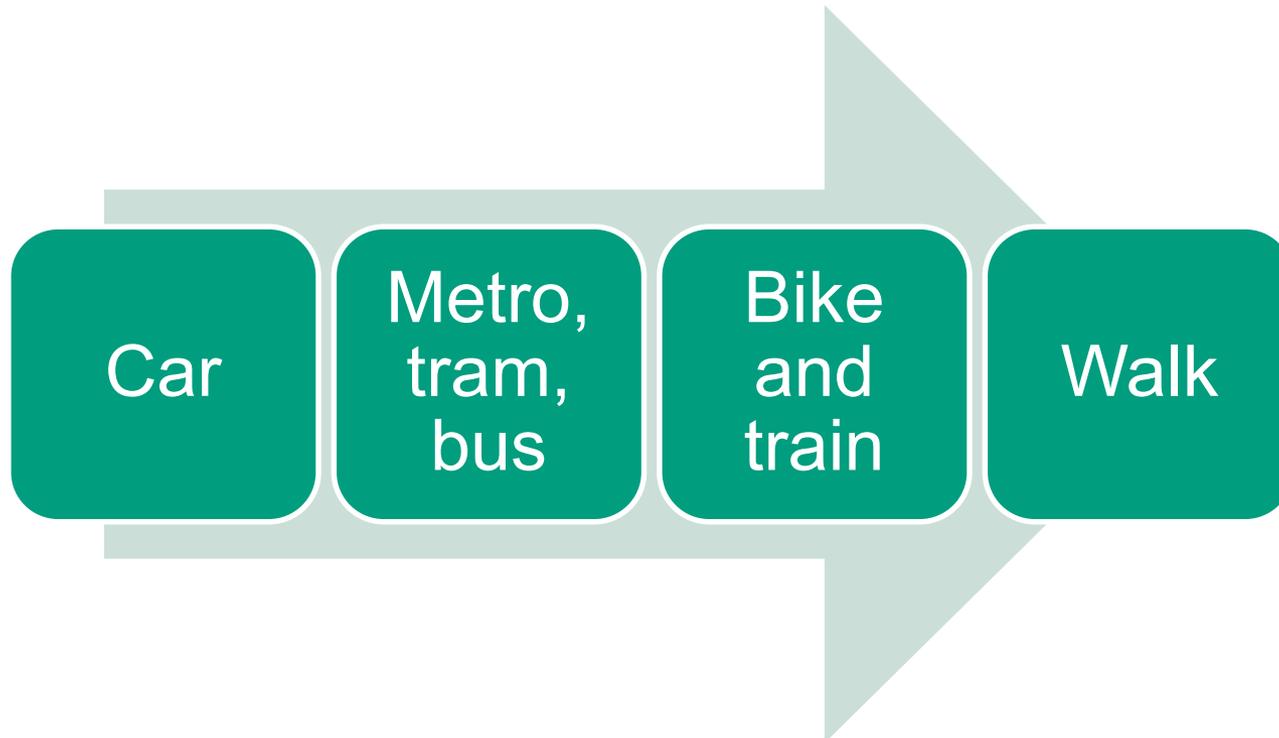
Travel mode satisfaction



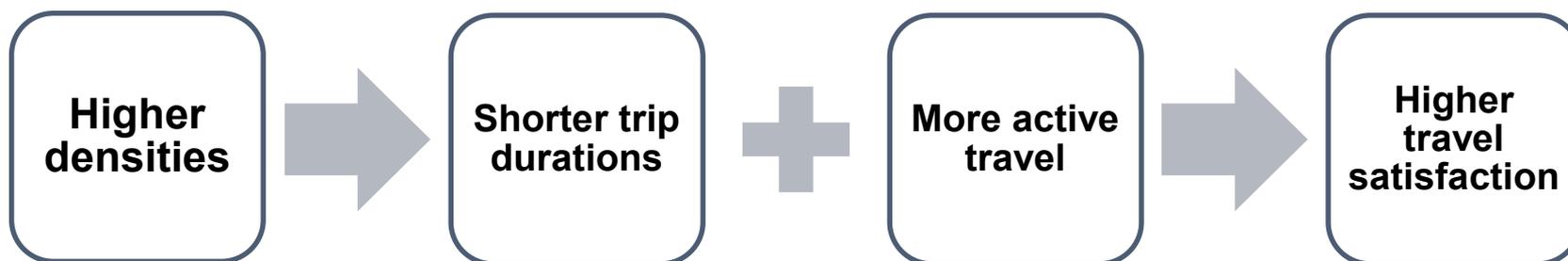
Travel mode satisfaction

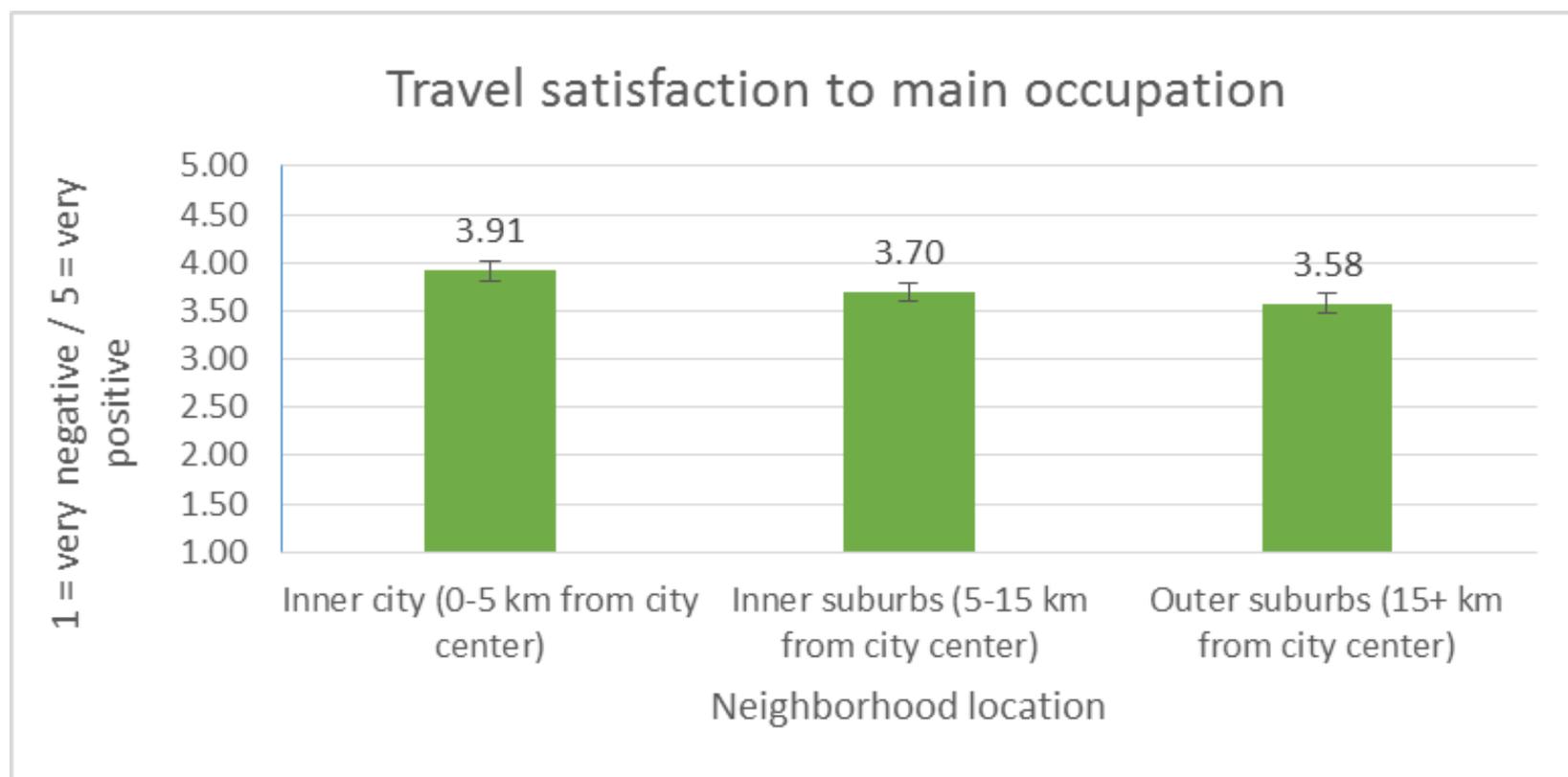


From LEAST to MOST pleasant (for same trip duration)

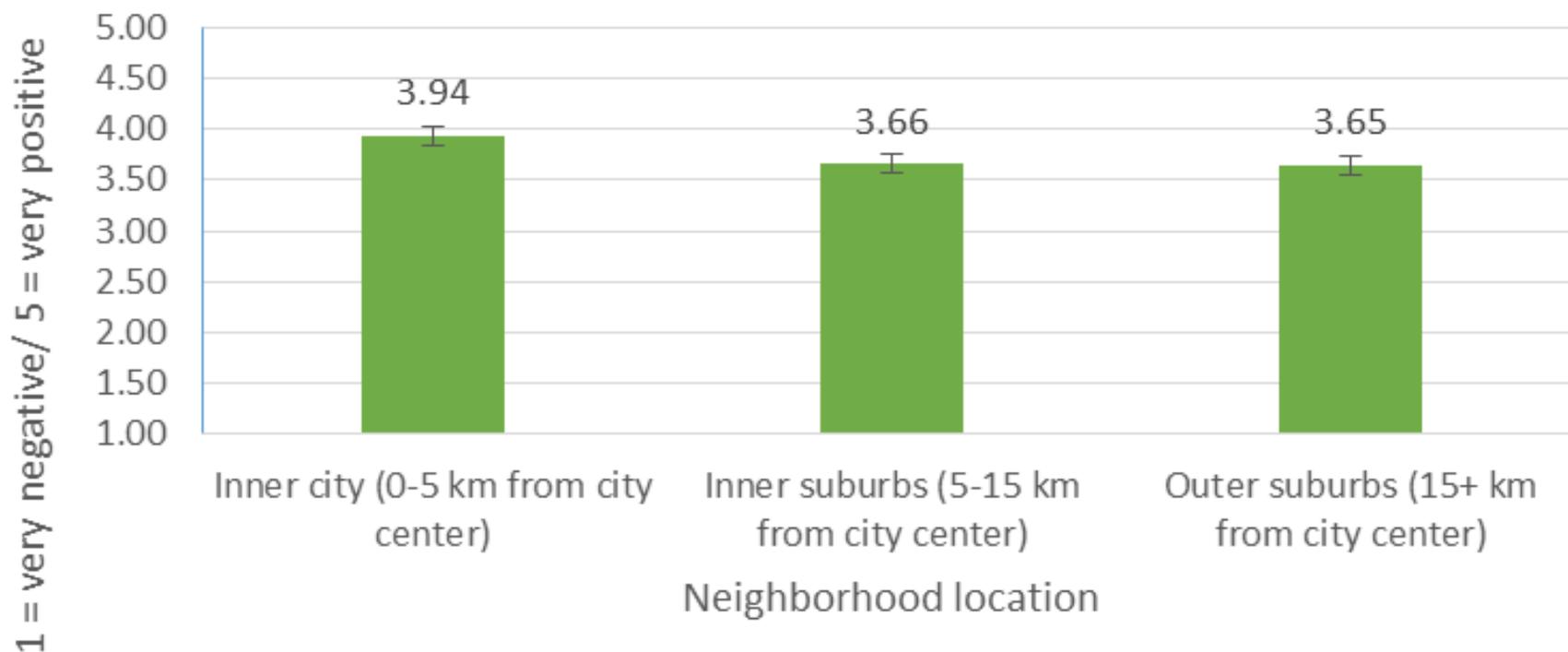


Travel satisfaction





Travel satisfaction for other activities

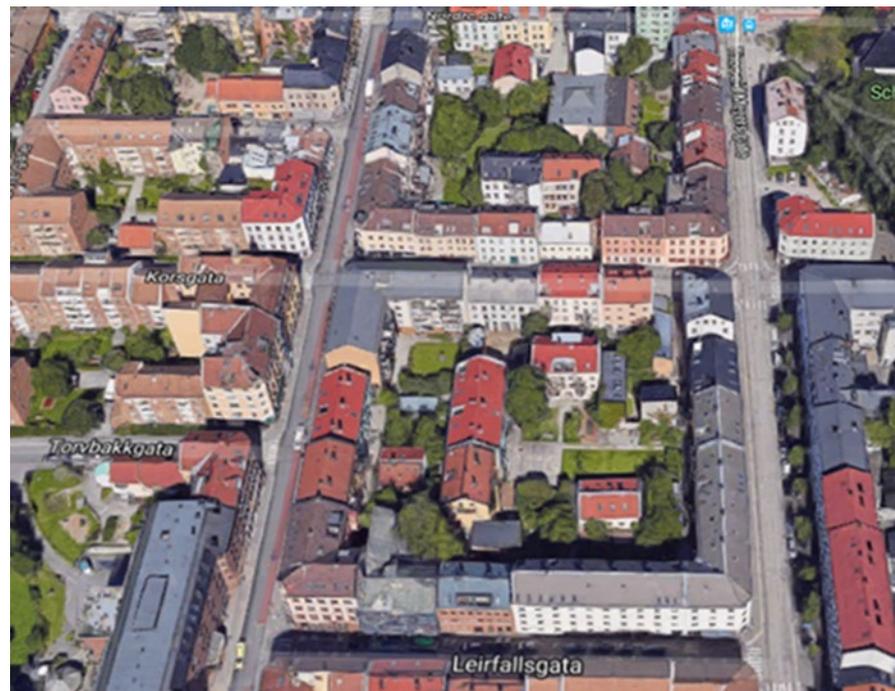
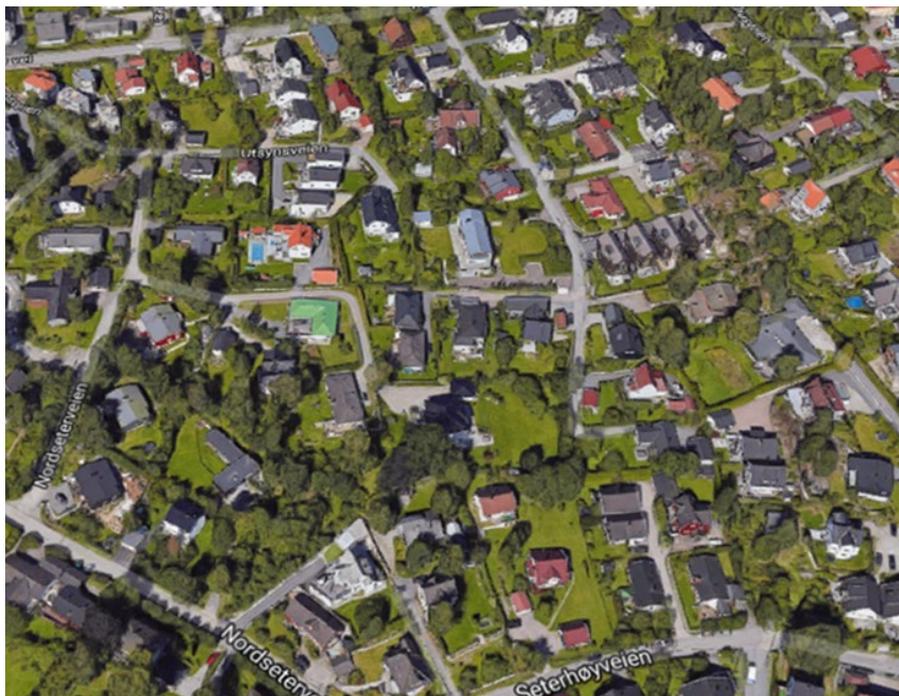




Key findings

- A. Social life
 - B. Travel satisfaction
 - C. **Neighborhood satisfaction**
 - D. Health, anxiety, life satisfaction, happiness
 - E. Problems in compact urban areas
-

C) Neighborhood satisfaction

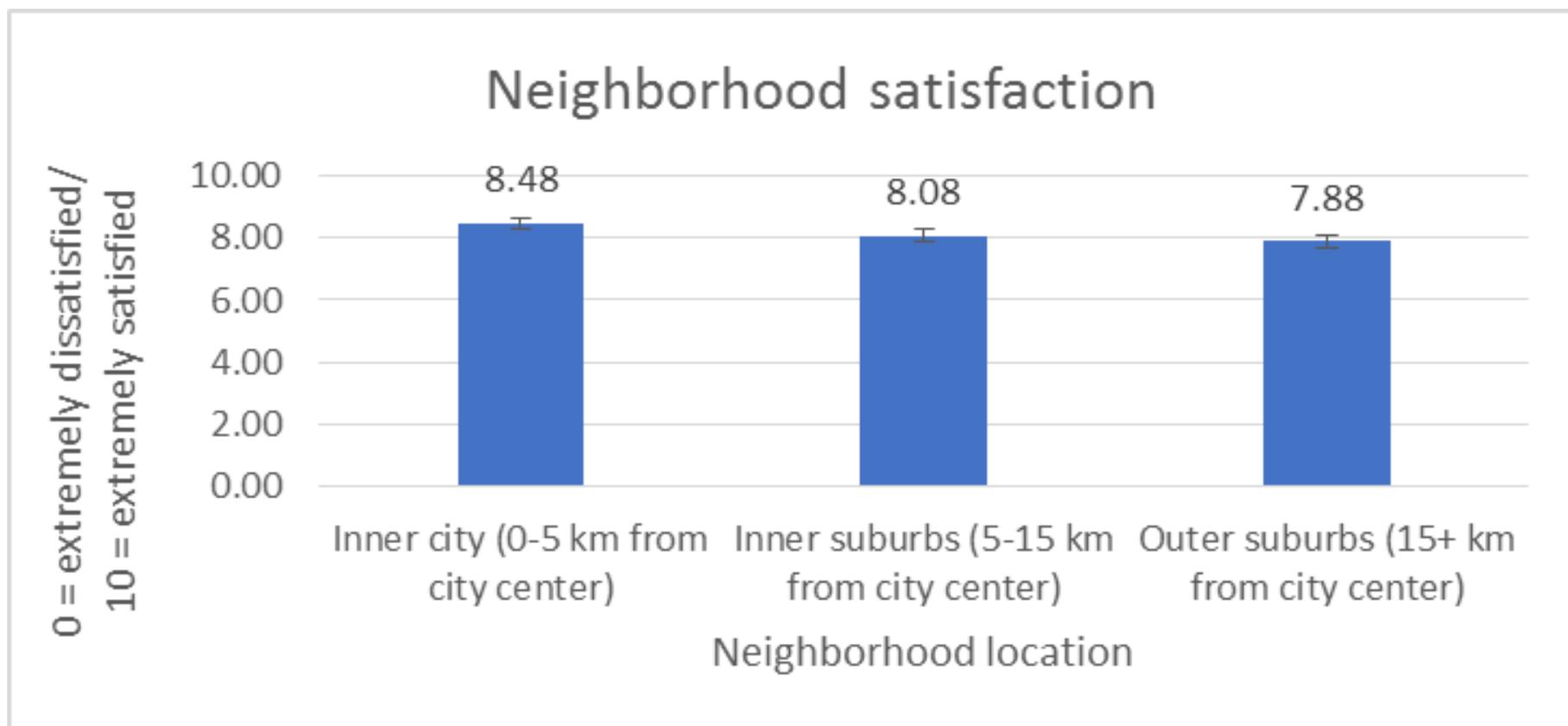




Neighborhood satisfaction

- **Neighborhood satisfaction:**
compact-city residents > low-density suburban residents
- **High density, shorter distances, land-use mix**
→ higher neighborhood satisfaction
- **For households with children:**
 - neighborhood satisfaction is similarly high in denser and less dense neighborhoods
 - shorter distances to city center: higher neighborhood satisfaction

Neighborhood satisfaction



Mouratidis, K. (2018). Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies*, 55(11), 2408-2430.

Neighborhood satisfaction: before & after moving



Table 5. Longitudinal comparisons of neighborhood satisfaction.

	Satisfaction with <u>previous</u> neighborhood		Satisfaction with <u>current</u> neighborhood		<i>t</i> -Test	N
	Mean	s.d.	Mean	s.d.		
Compact to sprawl	7.57	(1.87)	7.29	(1.90)		28
Sprawl to compact	6.00	(1.99)	8.69	(1.70)	*	36
<i>t</i> -Test	*		*			

*A t-test of difference in mean shows significant differences at $p < 0.05$.

Mouratidis, K. (2018). Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies*, 55(11), 2408-2430.



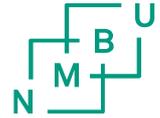
Key findings

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 - D. Health, anxiety, life satisfaction, happiness**
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-



D) Health, anxiety, life satisfaction, happiness

- **Physical health** (perceived): **higher** in compact areas
- **Anxiety**: **higher** in compact areas
- **Life satisfaction**: similar in compact and low-density areas
- **Happiness**: similar in compact and low-density areas



Key findings

- A. Social life
 - B. Travel satisfaction
 - C. Neighborhood satisfaction
 - D. Health, anxiety, life satisfaction, happiness
 - E. **Problems in compact urban areas**
-



E) Problems in compact urban areas

High densities:

→ **Lower safety (perceived)**

→ **Higher noise (perceived)**

→ **Lower cleanliness (perceived)**

→ **Lower tree cover**

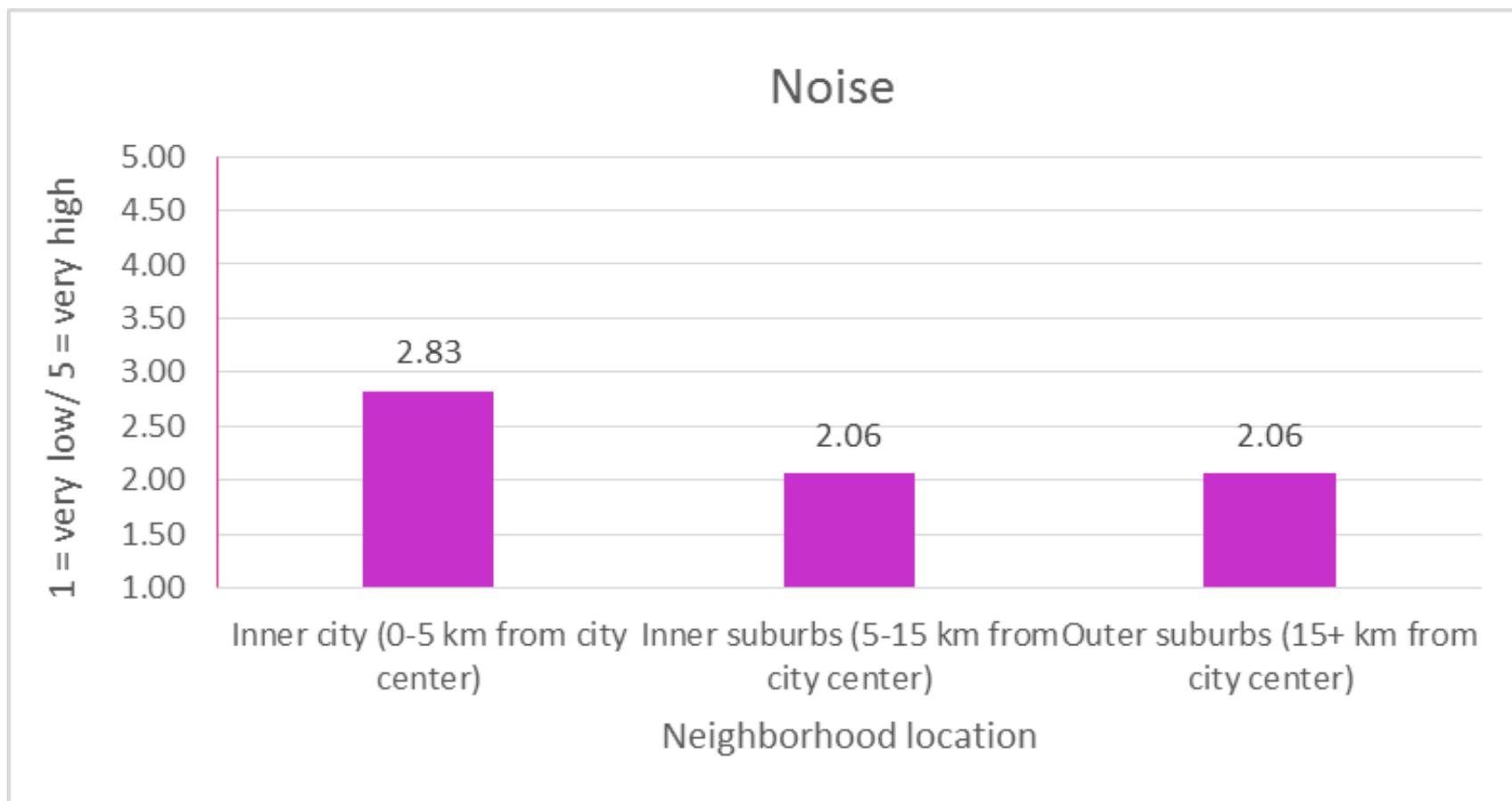
Mouratidis, K. (2018). Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies*, 55(11), 2408-2430.

Safety (perceived)



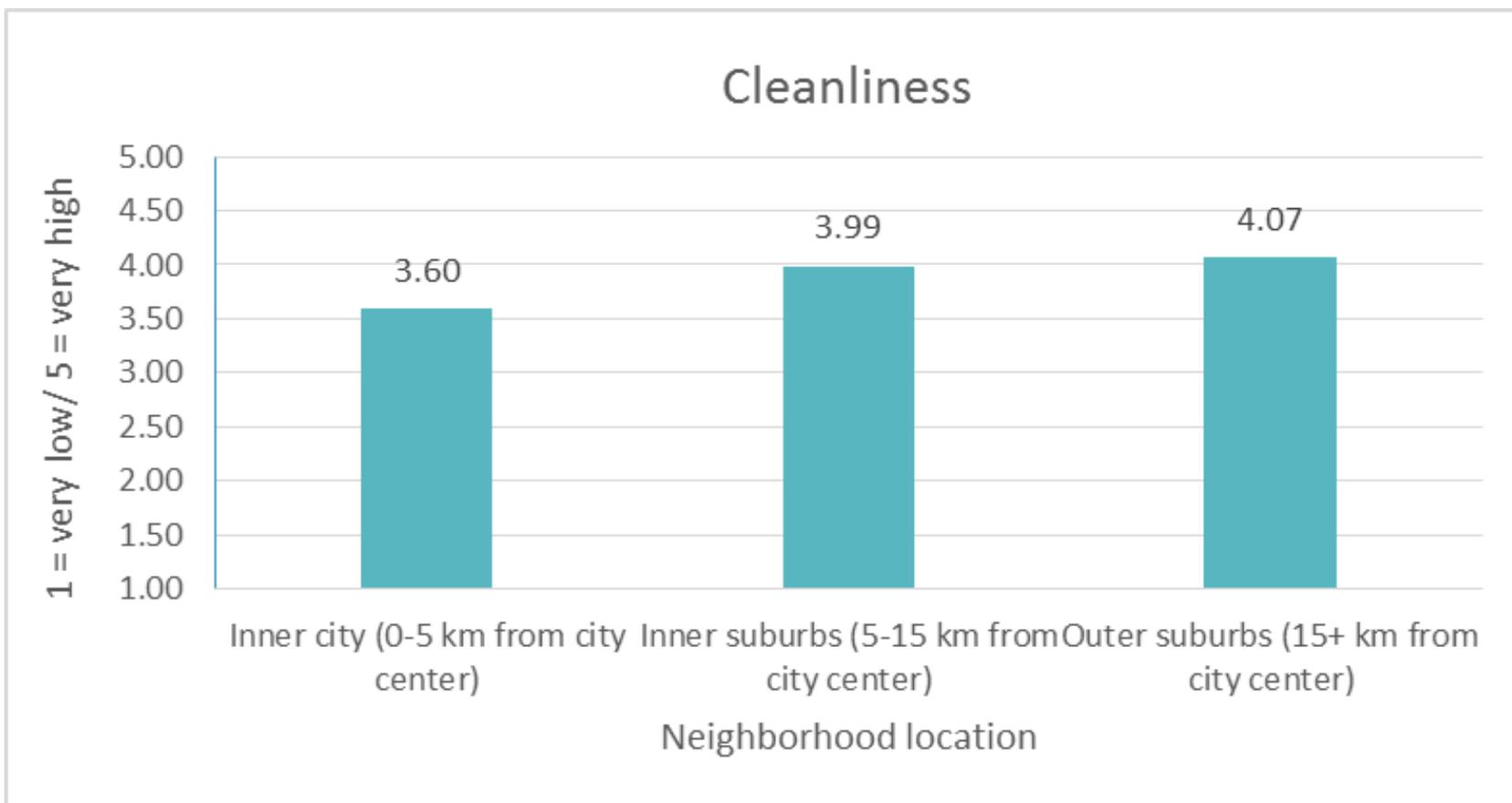
Mouratidis, K. (2018). Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies*, 55(11), 2408-2430.

Noise (perceived)



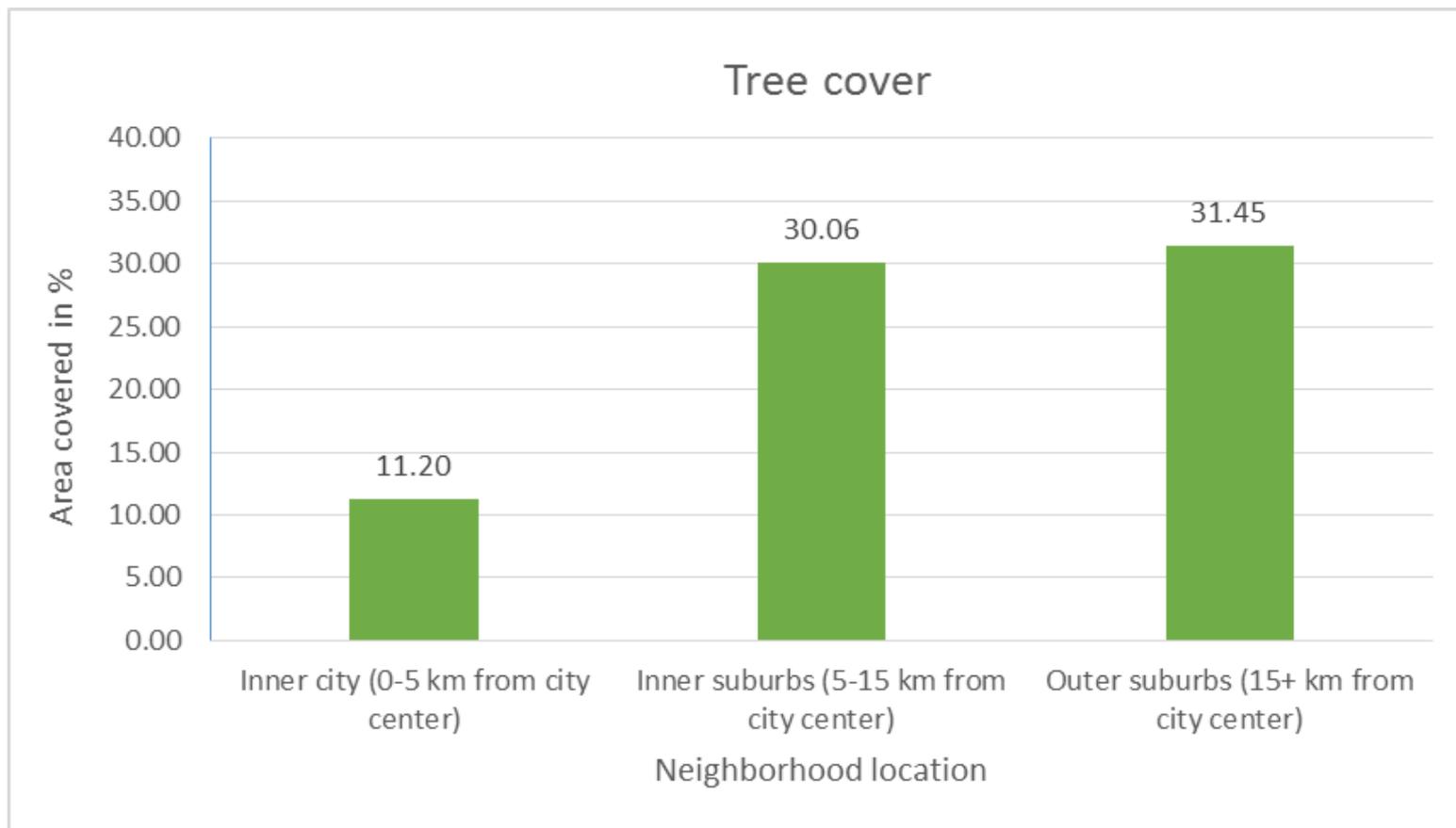
Mouratidis, K. (2018). Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies*, 55(11), 2408-2430.

Cleanliness (perceived)

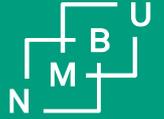


Mouratidis, K. (2018). Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies*, 55(11), 2408-2430.

Tree cover

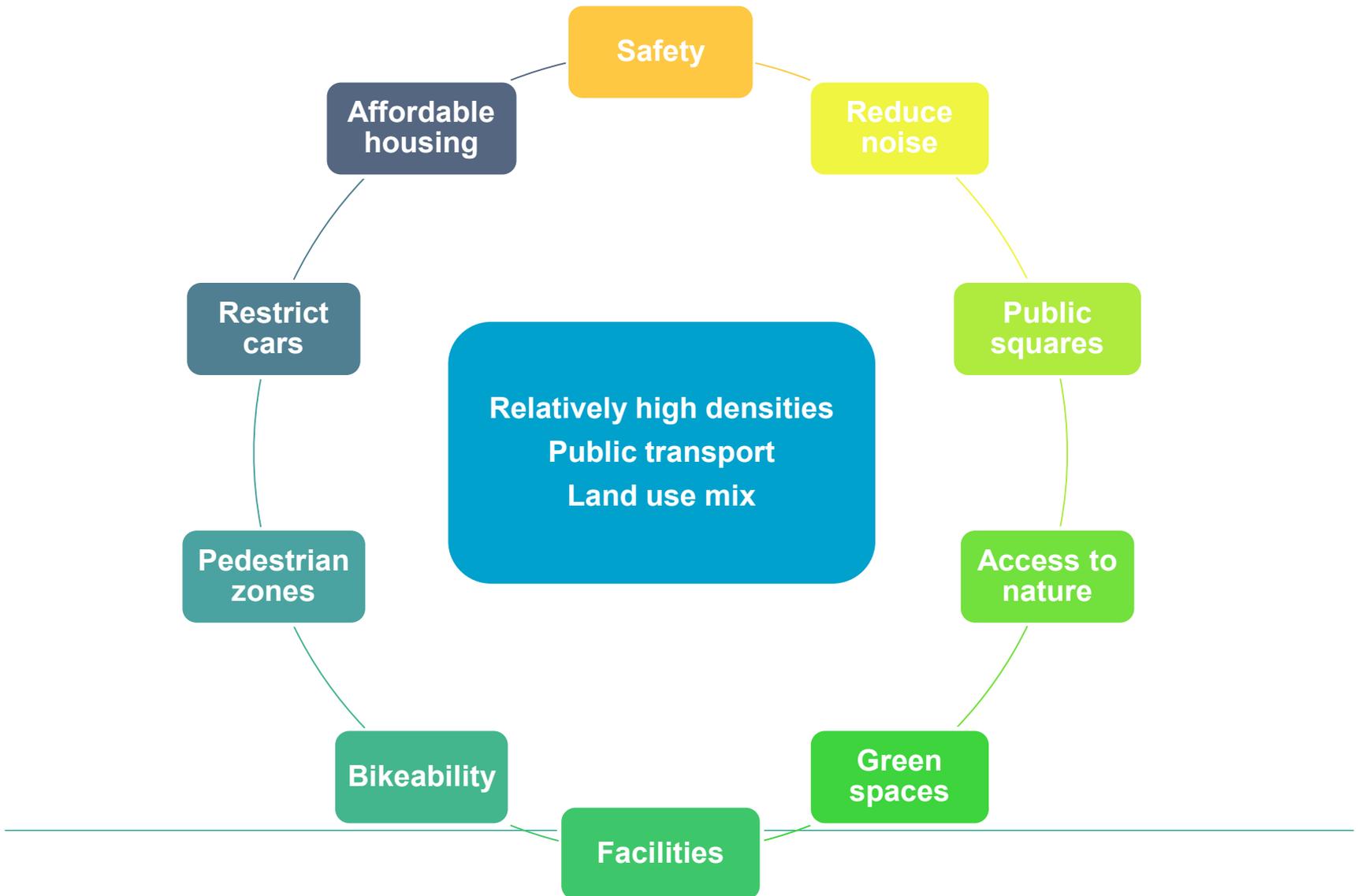


Mouratidis, K. (2018). Unpublished data.



4. Implications for urban planning

Livable compact cities: Implications for urban planning



High-rise buildings?

- Compact does not necessarily mean high rise
- High rise has been linked to negative psychological effects

Gifford, R. (2007). The consequences of living in high-rise buildings. *Architectural science review*, 50(1): 2-17.



Walkability



Bikeability



Bikeability



Increasing greenery

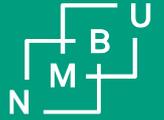


Increasing greenery



Increasing greenery





5. Conclusions



Compact city and quality of life – a summary

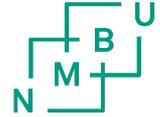
Strengths

- Social life and personal relationships satisfaction
- Physical health
- Neighborhood satisfaction
- Travel satisfaction

Weaknesses

- Fear of crime and noise
→ unpleasant emotions
- *Anxiety*

Epilogue



- When planned to integrate all its essential elements
(e.g. moderately high densities, high accessibility, mixed land uses, walkability, bikeability, public transport, car restrictions, public squares, trees, green spaces)
- and common urban problems are addressed
(e.g. safety, noise, litter, overcrowding, socio-spatial inequalities)



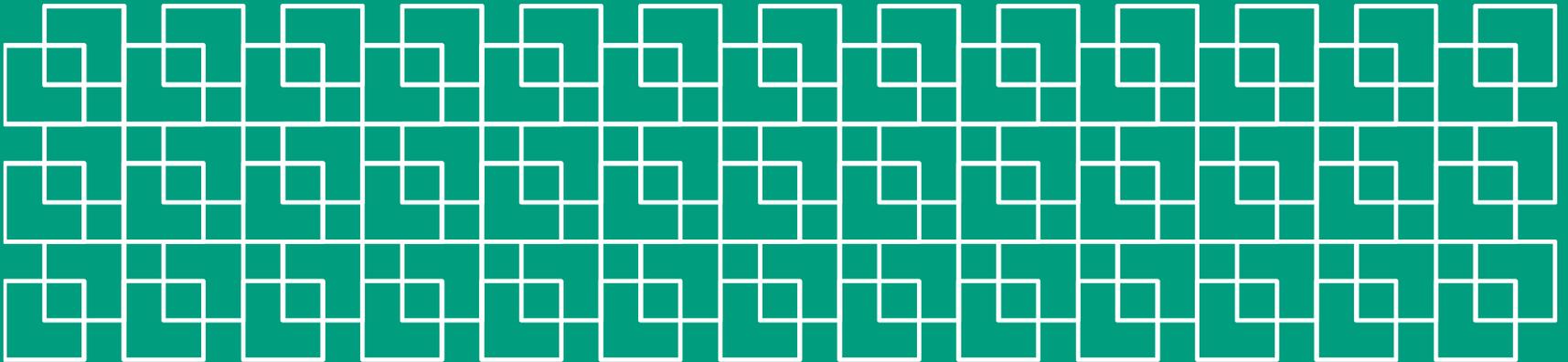
→ **the compact city can promote important quality of life domains:**
social life, physical health, neighborhood satisfaction, travel satisfaction

Environmental and social dimensions of sustainability can have more synergies than conflicts

Thank you!

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Appendix





Table A1. Compact neighborhoods of the study.

Neighborhood name	Neighborhood type	Population density (persons/ha)	Distance to city center (km)	Main building type	Land uses	Sample size (persons)
St. Hanshaugen	Compact	203	2.3	Apartment block	Mixed	62
Gronland	Compact	205	1.0	Apartment block	Mixed	100
Frogner A	Compact	135	2.8	Apartment block	Mixed	8
Frogner B	Compact	306	2.6	Apartment block	Mixed	20
Majorstuen A	Compact	221	3.1	Apartment block	Mixed	57
Majorstuen B	Compact	247	2.9	Apartment block	Mixed	35
Sagene	Compact	267	3.5	Apartment block	Mixed	57
Torshov	Compact	135	3.3	Apartment block	Mixed	71
Grünerløkka A	Compact	171	1.5	Apartment block	Mixed	53
Grünerløkka B	Compact	244	2.3	Apartment block	Mixed	72

Note: Total sample size for compact neighborhoods N = 535.

Table A2. Low-density suburban neighborhoods of the study.

Neighborhood name	Neighborhood type	Population density (persons/ha)	Distance to city center (km)	Main building type	Land uses	Sample size (persons)
Holmen	Low-density suburban	30	6.0	Detached house	Separate	13
Lofthus	Low-density suburban	50	5.6	Detached house	Separate	17
Hellerud	Low-density suburban	44	7.7	Detached house	Separate	33
Holmenkollen A	Low-density suburban	24	10.5	Detached house	Separate	19
Korsvoll	Low-density suburban	31	6.5	Detached house	Separate	11
Nordberg	Low-density suburban	26	5.8	Detached house	Separate	13
Stovner	Low-density suburban	36	13.1	Detached house	Separate	7
Nordstrand	Low-density suburban	38	8.4	Detached house	Separate	14
Hauketo	Low-density suburban	32	10.1	Detached house	Separate	12
Rykkinn	Low-density suburban	26	19.2	Detached house	Separate	44
Bærums Verk	Low-density suburban	42	17.7	Detached house	Separate	38
Stabekk	Low-density suburban	26	8.6	Detached house	Separate	11
Asker	Low-density suburban	23	25.0	Detached house	Separate	41
Nesøya	Low-density suburban	14	21.6	Detached house	Separate	45
Ski	Low-density suburban	22	26.4	Detached house	Separate	42
Oppegård	Low-density suburban	27	17.6	Detached house	Separate	51
Drobakk	Low-density suburban	38	36.0	Detached house	Separate	26
Bjornemyr	Low-density suburban	26	46.0	Detached house	Separate	35
Ytre Enebakk	Low-density suburban	22	32.6	Detached house	Separate	32

Note: Total sample size for low-density suburban neighborhoods N = 504.

Table A3. Other neighborhoods of the study.

Neighborhood name	Neighborhood type	Population density (persons/ha)	Distance to city center (km)	Main building type	Land uses	Sample size (persons)
Frogner C	Inner-city mixed	94	2.8	Mixed	Mostly separate	17
Skøyen	Inner-city low density	46	4.2	Mixed	Separate	16
Grefsen	Suburban mixed	97	7.6	Mixed	Separate	26
Vålerenga	Inner-city mixed	130	2.5	Mixed	Mostly separate	52
Etterstad	Inner-city medium density	72	3.2	Apartment block	Separate	14
Høyenhall	Inner-city low density	52	4.4	Detached house	Separate	13
Østenjø	Suburban mixed	55	6.4	Mixed	Separate	16
Holmenkollen B	Suburban mixed	60	10.6	Mixed	Separate	20
Hovseter	Suburban mixed	76	7.4	Mixed	Separate	22
Ullevål	Inner-city mixed	57	4.0	Mixed	Separate	22
Berg	Inner-city low density	35	4.6	Detached house	Separate	20
Kringsjø	Suburban mixed	73	6.8	Mixed	Separate	12
Vestli	Suburban medium density	126	13.6	Apartment block	Separate	3
Tokerud	Suburban mixed	81	13.8	Mixed	Separate	16
Holmlia	Suburban mixed	62	10.8	Mixed	Separate	13
Blystadlia	Suburban mixed	88	20.0	Mixed	Separate	23

Note: Total sample size for other types of neighborhoods N = 305.

Table 3. Comparison of sociodemographic characteristics.

Sociodemographic variables	Survey respondents (N=1344)	Population
	Mean	Mean
Age (for aged 18 or older) ¹	50.16	46.30
Unemployed ²	2.50%	3.50%
Living with partner/spouse ¹	61%	48%
Non-Norwegian ¹	9%	21%
Adjusted household income (1000s NOK) ¹	642.20	582.98
Household size (persons) ¹	2.22	1.94
Number of children in household ¹	0.54	0.46
Household with children ¹	32%	26%
Respondent is female ¹	53.4%	50.3%
Respondent has college degree or higher ²	79%	47%