

# A method to evaluate equitable accessibility

MISTRA workshop

6-10-2017

KTH, Stockholm

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Based on:

Karen Lucas, Bert van Wee, Kees Maat (2016),

A method to evaluate equitable accessibility: combining  
ethical theories and accessibility-based approaches

Transportation 43:473–490

# Background

CBA: distribution effects generally ignored  
Specific topic transport policy Social exclusion.  
Evaluation: largely case studies

No systematic method, theoretically underpinned



# This paper

Method based on Egalitarianism, Sufficiencyarianism

CBA: consequentialism / utilism

(Overview of theories useful for transport evaluation purposes;  
see Van Wee and Roeser, 2013)

SRAIs: socially relevant accessibility impacts

# Theories

Egalitarianism: all people should be treated equally

Rawls: primary social goods. Geurs and Van Wee (2011): accessibility can be seen as a primary social good.

Discussion possible: see Martens (2016)

Max-min principle: the greatest benefit of the least advantaged members of society

Consequences:

- Accessibility of basic services for least advantaged
- 'Equal access'



Sufficientarianism: minimum threshold

Strong versus weak: focus on 'below threshold' versus absolute priority



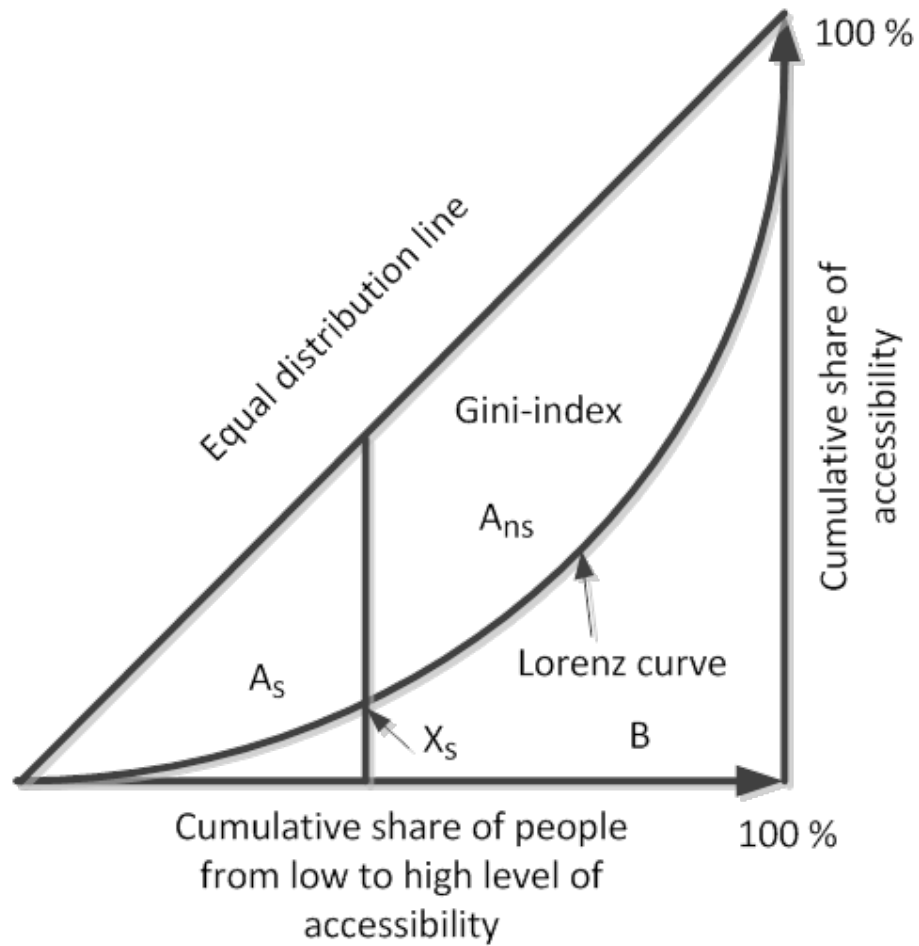
# Method

Applicable to any quantitative accessibility indicator

See Geurs van Van Wee (2004) for options

See Van Wee, Geurs and Chorus (2013) for ICT and accessibility

Based on GINI –index and Lorenz curve





## Subtitle

Notice:

Sum generally meaningless, unlike income

Threshold: political choice (although research is possible)



# Application

The Hague (big city)

Delft (medium sized city)

Dongeradeel (rural)



1. greengrocer,
2. butcher,
3. baker,
4. bookshop or stationer,
5. drugstore,
6. pharmacy,
7. family doctor
8. dentist

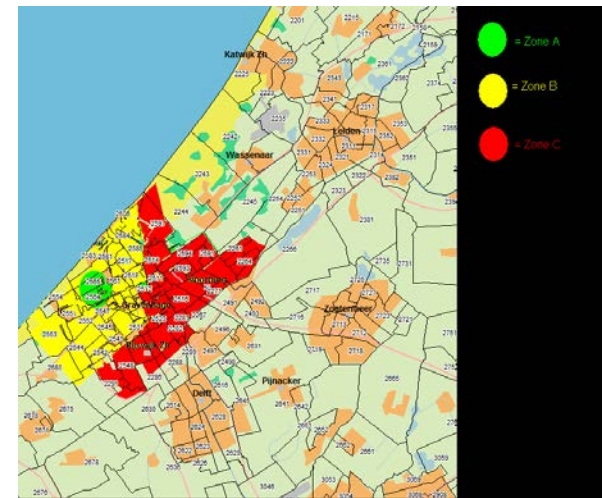
1-5 supermarket if available



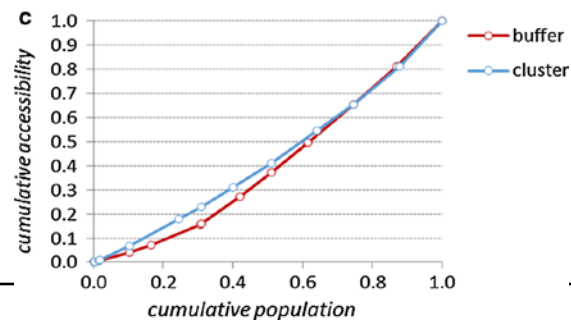
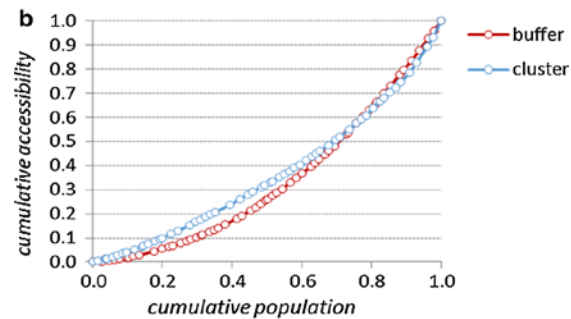
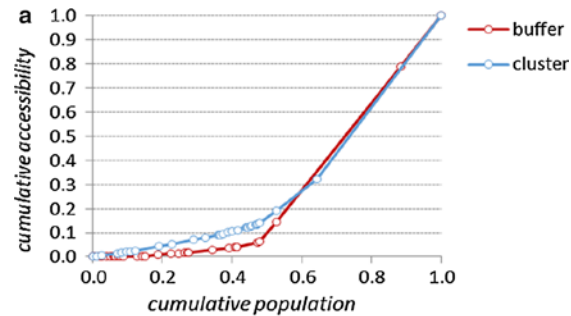
1. Cluster of destinations  
Nearest /shortest path

2. Buffer  
Cumulative opportunities < 2 (or other threshold) km

Applied to all inhabitants of postal code zones



# Results: Lorentz curves for Dongeradeel, The Hague, Delft



*Indices of egalitarianism and sufficientarianism*

	Dongeradeel	The Hague	Delft
Gini cluster index	.65	.27	.13
Gini buffer index	.70	.33	.20
Threshold cluster index	Share of persons within threshold		
▪ 1 km	.00	.82	.49
▪ 2 km	.47	1.00	1.00
▪ 4 km	.53	1.00	1.00
▪ 5km	.56	1.00	1.00
Area As as percentage of triangle			
For thresholds value of 1 km	0.65	0.02	0.08

# Discussion

- Accessibility versus QoL, happiness, well-being?
- Which destinations?
- Who and how to set thresholds?
- How to integrate in CBA, MCA?
- ....

Questions / discussion?



Subtitle