Assessing guardianship opportunities at underground stations

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Introduction

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Aim and Objective

Objective

To assess the **opportunities for guardianship** as provided by the characteristics of the **environment** at underground stations.

Research questions

- Different environmental characteristics may affect opportunities for guardianship
- Guardianship opportuntities may be affected differently in different places
- Guardianship is a function of the environment transport nodees are embedded in.

Guardianship

Citizen participation and crime (Pennell et al., 1985)

Property crime in neighborhoods (Massey et al., 1989)

Surveillance in public space (Painter and Tilley, 1999)

Property crime in neighborhoods (Reynald, 2011)

Burglary levels and risks of crime (Wilcox et al., 2007)

Social disorganization theory - "social control" (Shaw and McKay, 1942)

Routine activity theory - "suitable guardians" (Cohen and Felson, 1979)

Jacobs (1961) - "eyes on the street"

CONTROL

Guardianship

- **Persons**

  “handlers”, “place managers”, “supervisors”, “passersby”

  (Eck, 1994, Hollis-Peel et al., 2002)

  passengers, shop owners, employees, drivers, passersby, residents, guards…

- **Objects**

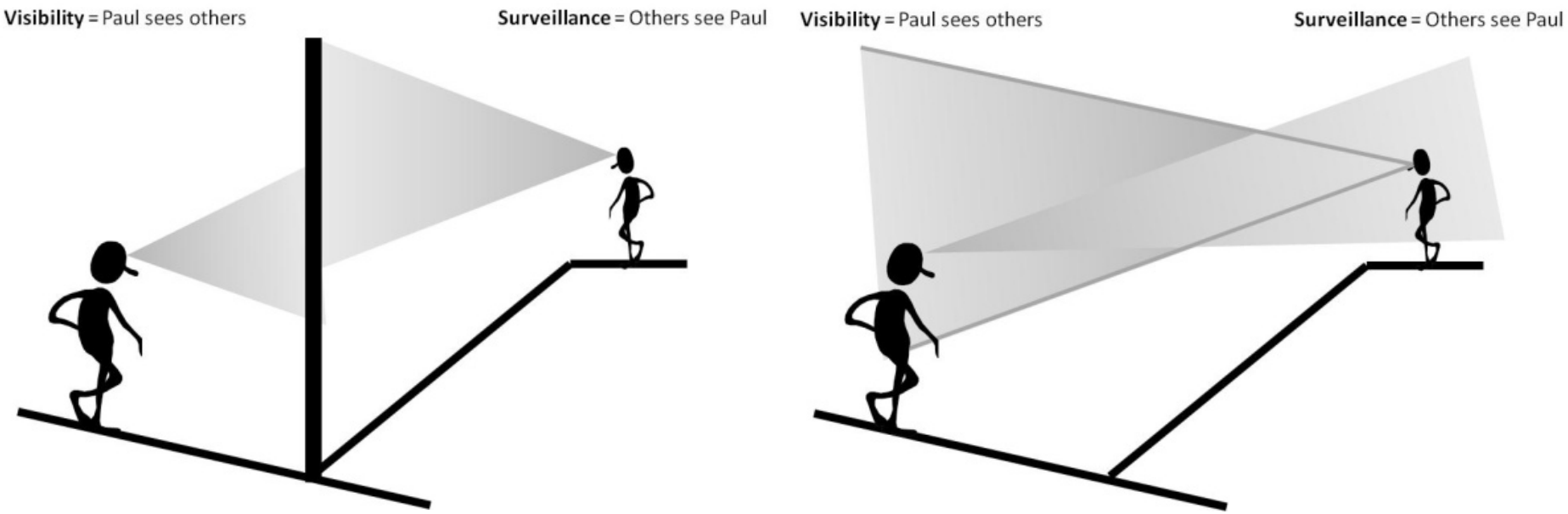
  station’s layout, CCTVs, illumination, corners, overview, levels…

- ***Guardians*** *are those persons that can execute the role of guardianship, their availability and willingness to monitor* (Reynald, 2011)

At transport nodes

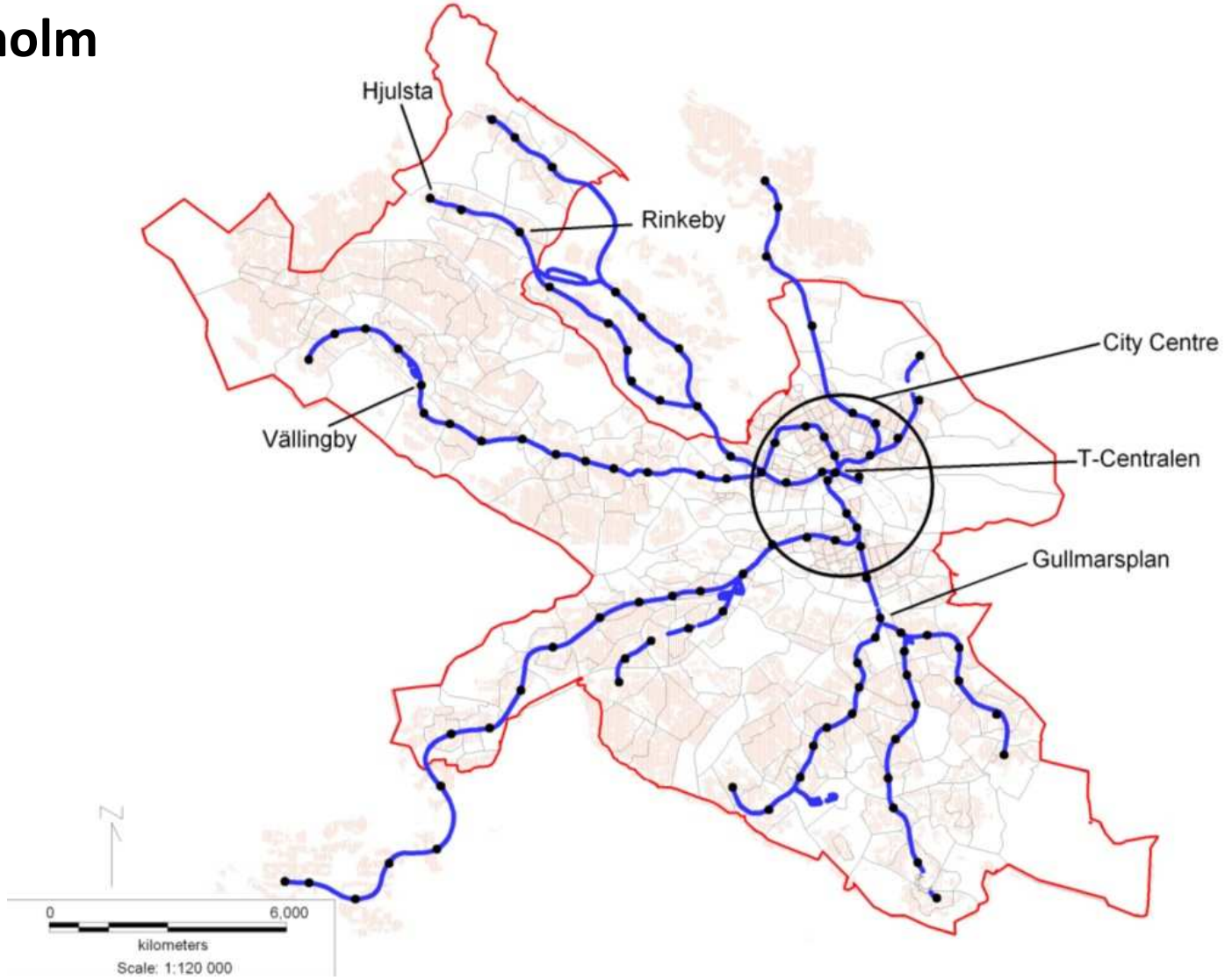
Opportunities for guardianship

- Varying layout
- Dynamic place over time
- Different types of individuals
- Surrounding land-uses and activities



Case Study

Stockholm



At transport nodes

Stockholm

At transport nodes

Stockholm

At transport nodes

Stockholm

At transport nodes

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At transport nodes

Stockholm

At transport nodes

Stockholm

Data

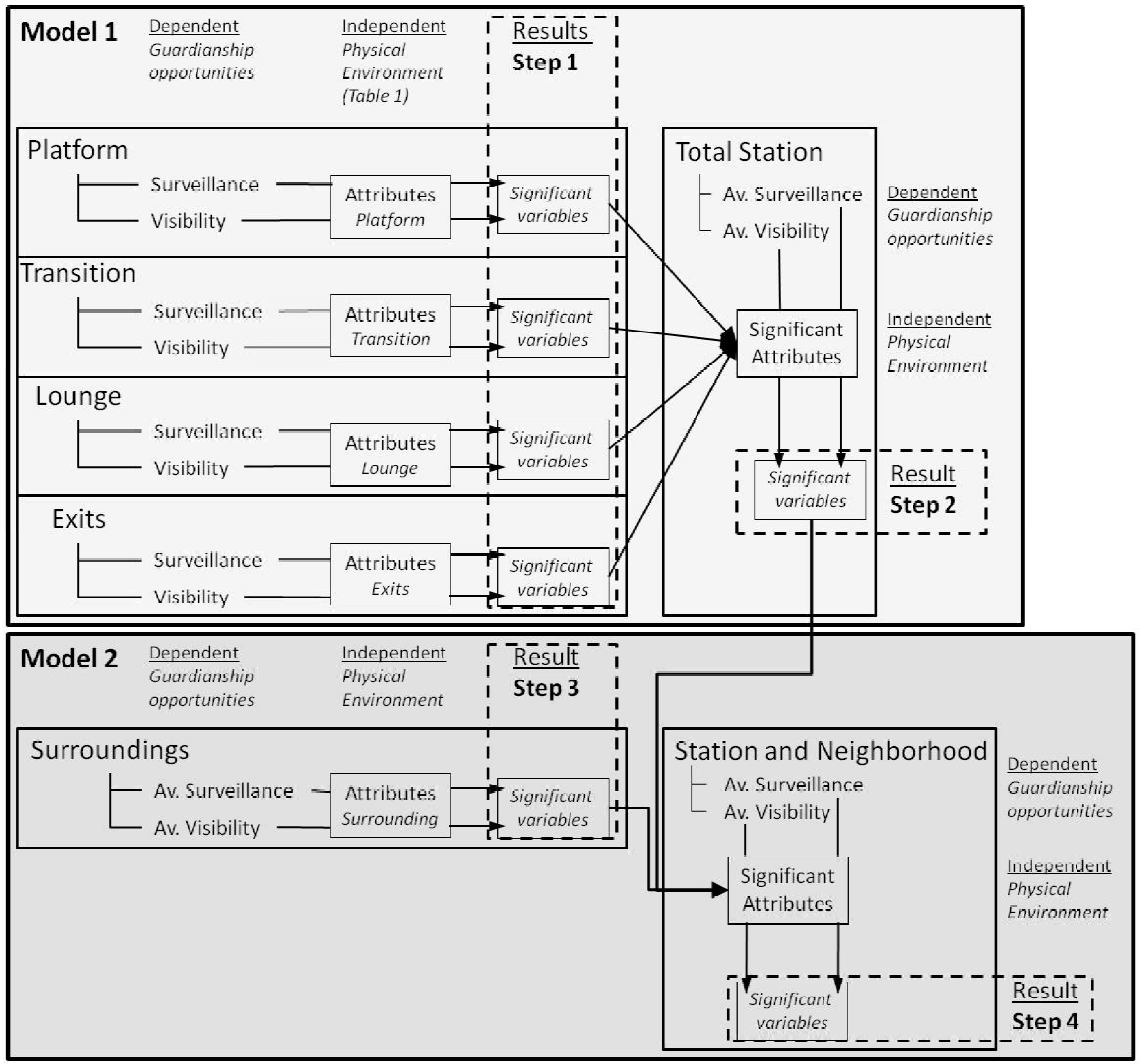
Data

- Fieldwork observations
  - Dependent variables: Surveillance & Visibility possiblities
  - Independent variables: environmental attributes

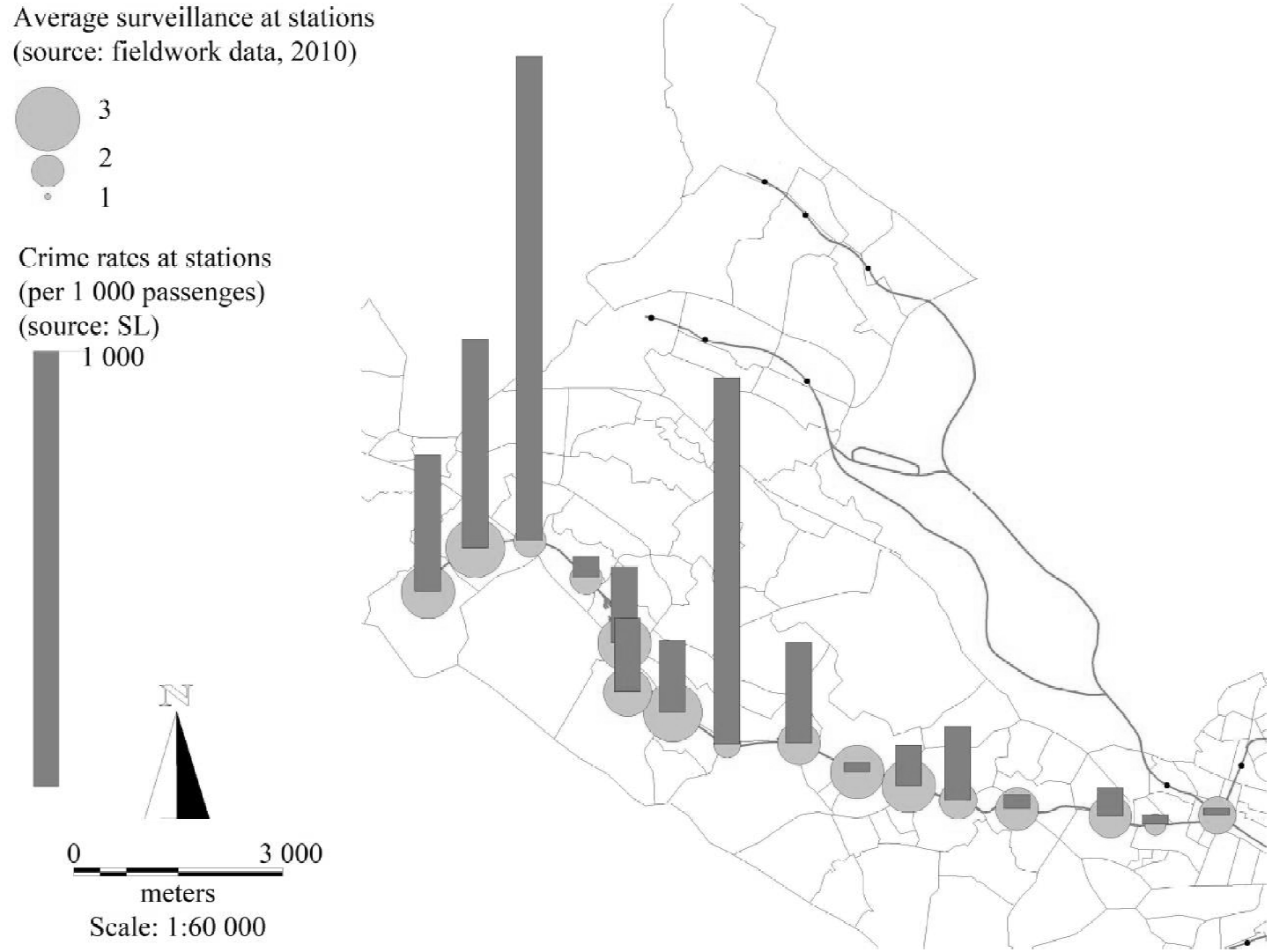
Platform	Transition	Lounge	Exit/Entrance
Pillu, Pcorn, Phide, Pblok, Pview, Punder, Psecu, Pmirr, Pguar, Pcrow, Pax, CCTVno	Tillu, Tcorn, Thide, Tlvl, Tview, Tsecu, Tmirr, Tguar, Tcrow, Pax, CCTVno	Lillu, Lcorn, Lhide, Lopen, Lwind, Lsecu, Lmirr, Lshop, Lcafe, Lguar, Lcrow, Pax, CCTVno	Eillu, Ecorn, Ehide, Ewalk, Eopen, Eview, Esecu, Eguar, Ecrow, Pax, CCTVno

Method

Stepwise Regression



Results


Average surveillance at stations
(source: fieldwork data, 2010)
3
2
1
Crime rates at stations
(per 1 000 passenges)
(source: SL)
1 000
N
0
3 000
meters
Scale: 1:60 000

Results

Guardianship Model 1

	Platform	Transition	Lounge	Exits	Total Station
Surveillance	NR^2 = 47,4 H-L = .947 +View*** -Crowded** +PassFlow*	NR^2 = 59,5 H-L = .607 -Illumination* -Corners* -Hidings* +View** +Mirrors** +Crowded**	NR^2 = 46,0 H-L = .867 -ViewPlatform** +Open* +View* -Underground* -CCTV*	NR^2 = 68,0 H-L = .067 -Corners** +View***	NR^2 = 56,9 *n=16* H-L = .382 -TCorners* +LOpen* -ECorners*** +EView** -CCTV*
Visibility	NR^2 = 65,8 H-L = .351 -Corners** -Blocking* -Crowded** +PassFlow*	NR^2 = 53,1 H-L = .230	NR^2 = 31,7 H-L = .764 -Hidings*** +Guards**	NR^2 = 61,2 H-L = .293 -Corners** +Open** +View** +SecuVis** +Crowded* +PassFlow*	NR^2 = 57,1 *n=11* H-L = .705 -PCrowded* -Lhide** +ESecuVis*

Significance: * 10% level (.05), ** %5 level (.01), *** 1% level (.005)

Results

1 Mix of both formal and informal characteristics

good visibility, overviews, few dark corners and hiding places, as well as good surveillance by formal and informal guardians

2 Increased opportunities for guardianship

at less-crowded stations with visible tools for guardianship

3 Guardianship opportunities differ by section

different types of guardians have a different effect

4 Surrounding environment not contributing as expected

Minor effect on explaining opportunities for guardianship at underground stations

Conclusions

- Opportunities for guardianship are **higher at safer** underground stations
- **Opportunities of guardianship** are influenced by the environment present.
- **Different places** at undergrond stations show **different aspects** of guardianship opportunities to be effective
- Presence of **guardians** and location of **tools** for gaurdianship plays a role

Conclusions

Suggestions for further research

- Relation to crime rates

- Presence of people and guards in transport nodes
- ”Hotspots of guardianship”

- Investigate types of guardianship

Discussion

Thank You!