

Session 12 – Policing and emergency services in Sweden

15:00-16:00

15:00 *Comparing planned and real response times for fires services in Sweden*, Tobias Granberg, Linköping university, Sweden

15:15 *A critical perspective on ambulance service ability areas in Sweden*, Jacob Hassler, KTH, Sweden

15:30 *Police Accessibility in Sweden: An Analysis of the Spatial Arrangement of Police Services*, Vania Ceccato, KTH, Sweden

15:45 - 16:00 – **Discussion**

Chair: Vania Ceccato, KTH, Sweden

Blue light in Green Surroundings

Challenges and opportunities for emergency and rescue services in rural Sweden

THE RESEARCH PROJECT

INTRODUCTION

AIMS & OBJECTIVES

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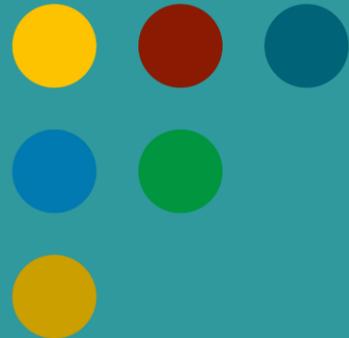
How long should one wait for rescue services if the house burns in a sparsely populated area in Sweden? Is it meaningful to report an on-going burglary or physical abuse if the exposed person knows that the police won't arrive until several hours have passed? How can we describe the private alternatives, who are they and how do they function?



The contribution of this project is to focus on the challenges involved in supplying and performing blue light-services and related services in rural areas in Sweden. The supply of these services is diverse, depending on where in the country you live. Individuals and groups face different opportunities in using these services. This relates to how the services are designed, their amplitude and the time aspects of reaching them. An emergency situation or a crisis in many cases involve calling for rescue services. Police, ambulance or the fire brigade are the services we usually associate to this kind of sudden events, accidents or catastrophes, or when being exposed to crime. The needs for these services are unevenly distributed among the population; some groups are more exposed compared to others, and some areas have fewer services compared to others. The demand does in brief terms follow the population density which means that the supply is larger in the more densely populated areas. On an individual level, on the other hand, when a situation occurs, is it the situation that decides the need, not the population density. Providing a level of services that corresponds to individual needs parallel to the needs on a structural level

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SUSTAINABLE DEVELOPMENT



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Police accessibility in Sweden: An analysis of the spatial arrangement of police services

Richard Stassen & Vania Ceccato

KTH Royal Institute of Technology
School of Architecture and Built Environment



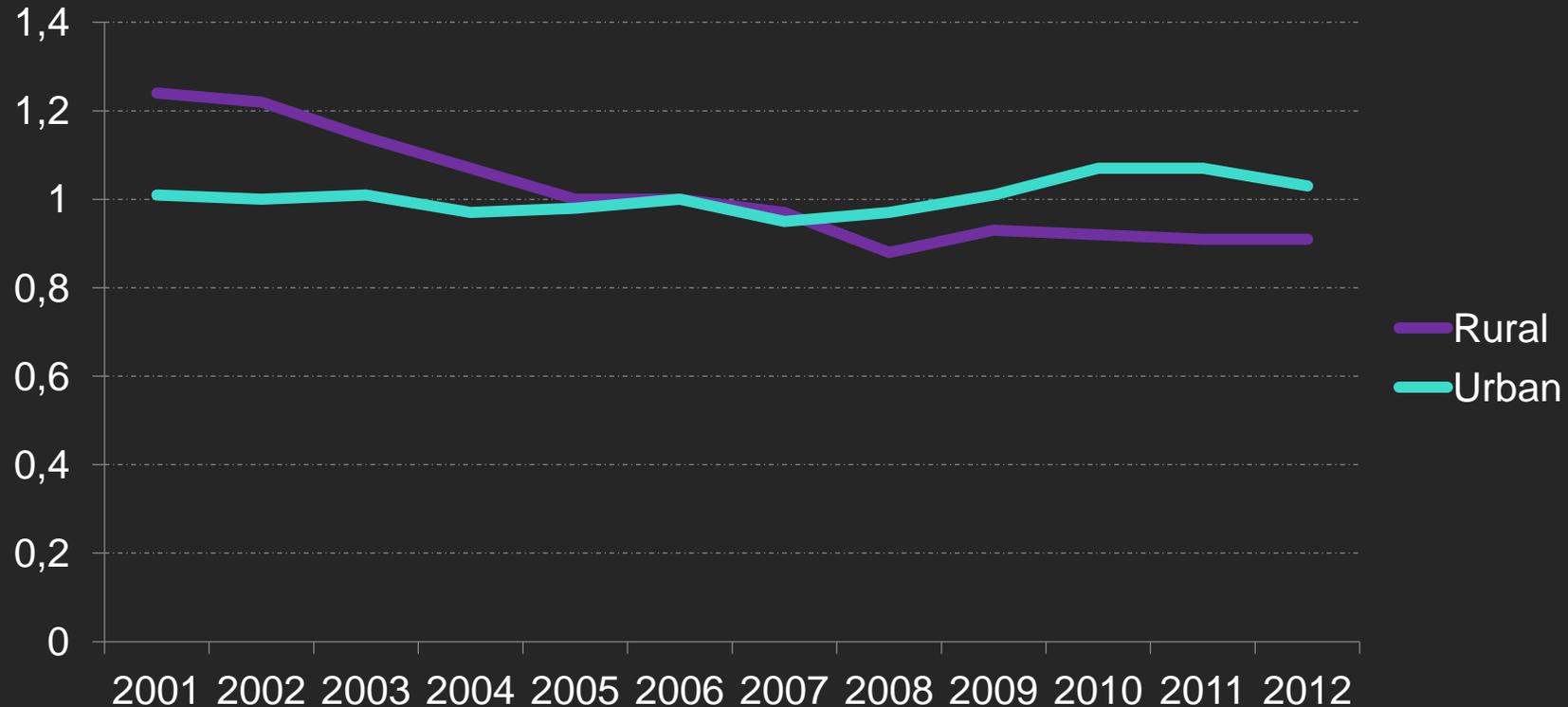
Physical police presence is important as a symbol of law and order ('public reassurance')



The distance between the police and Citizens in Northern Sweden has increased – 1 patrol for 72 Km

Increase in number of officers has risen by 20% since 2000 -more often in urban areas

→ 13% decrease in rural officers



Number of police officers in rural and other municipalities, 2001 – 2012.

Source: [Lindström \(2014\)](#)

The Aim

To examine the current distribution of police stations and how their spatial arrangement affects the population's access to police services.

Objectives

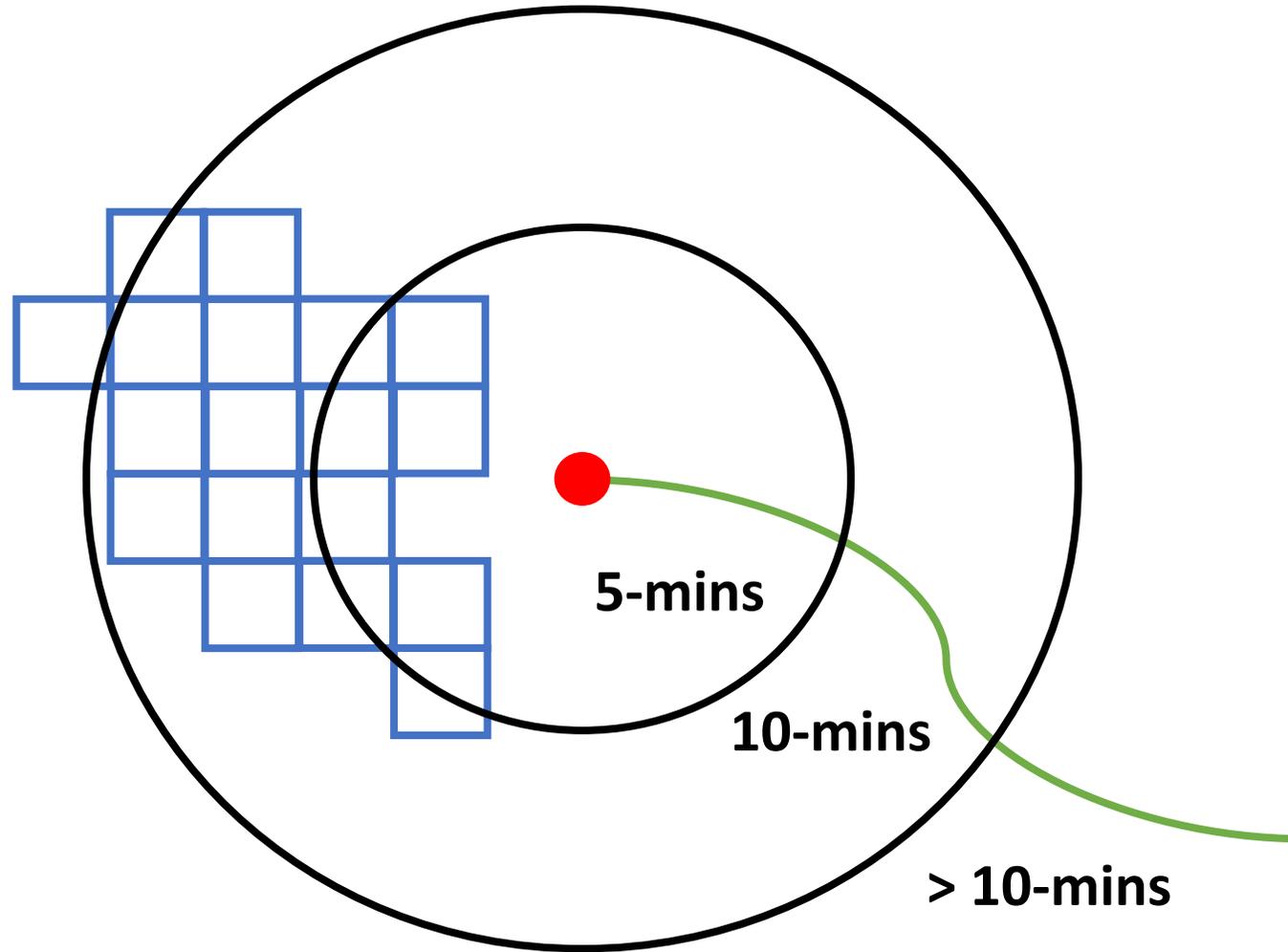
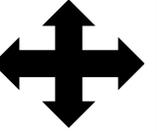
This is achieved by first

- calculating the average drive-times to police stations, and then
- analysing the accessibility by service type—we examine four types of police services that can be obtained at police stations, often via face-to-face interaction (crime registration, passports & IDs, weapon licensing, and provisional passports).
- inspecting the spatial distribution of service points, drawing on central place theory (CPT) as framework

Method: Supply-side

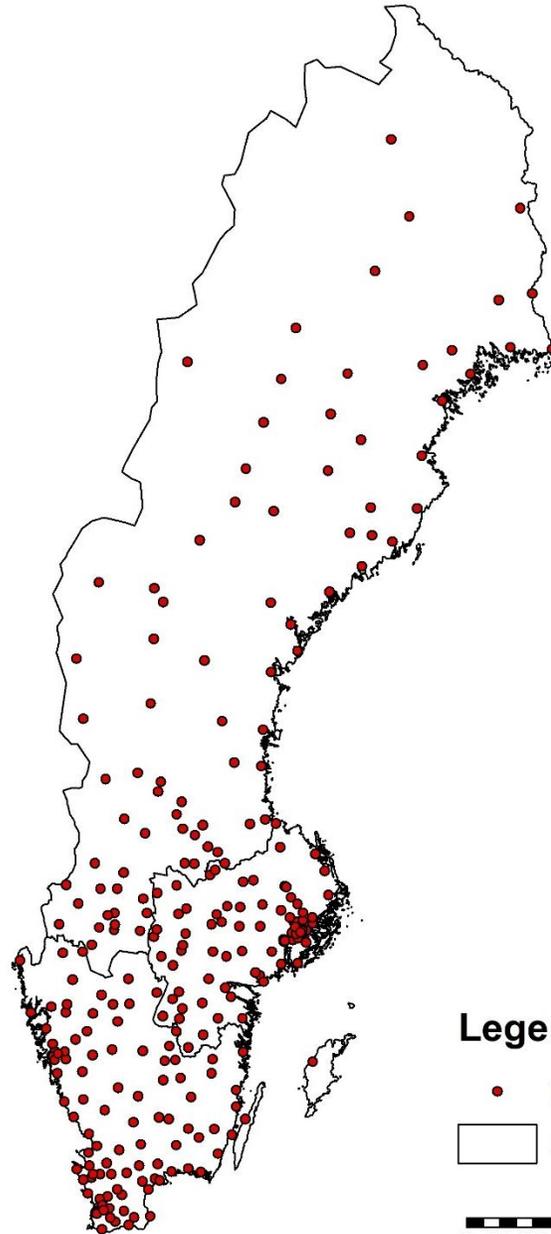
Network Analysis

North



Study Area

Swedish NUTS-1 statistical units



Legend

• Police Stations

□ NUTS-1 units

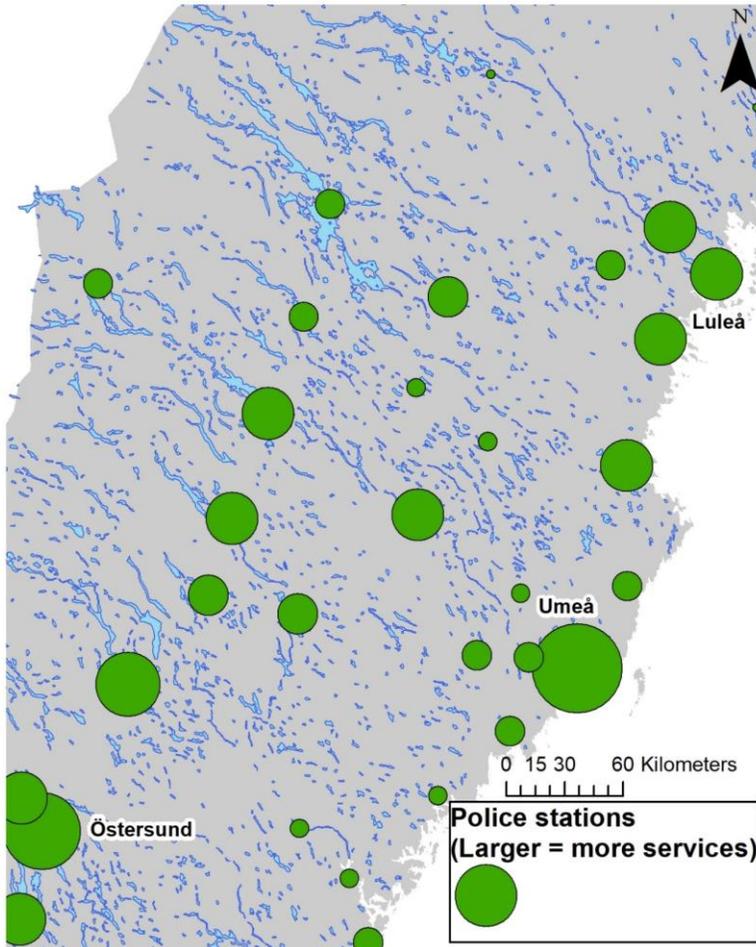
0 90 180 360 540 720 Kilometers

Results: Northern Sweden

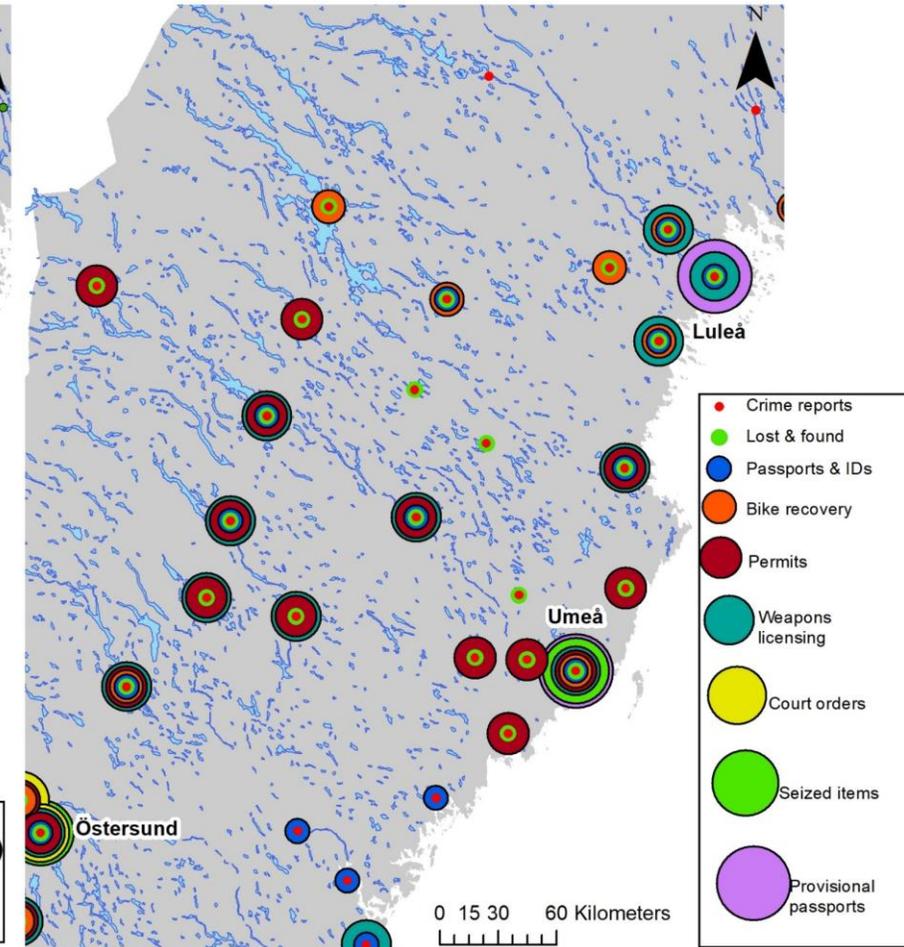
Hierarchical service distribution
Strong degree of central tendency

Police stations and services offered

A) Number of services per station

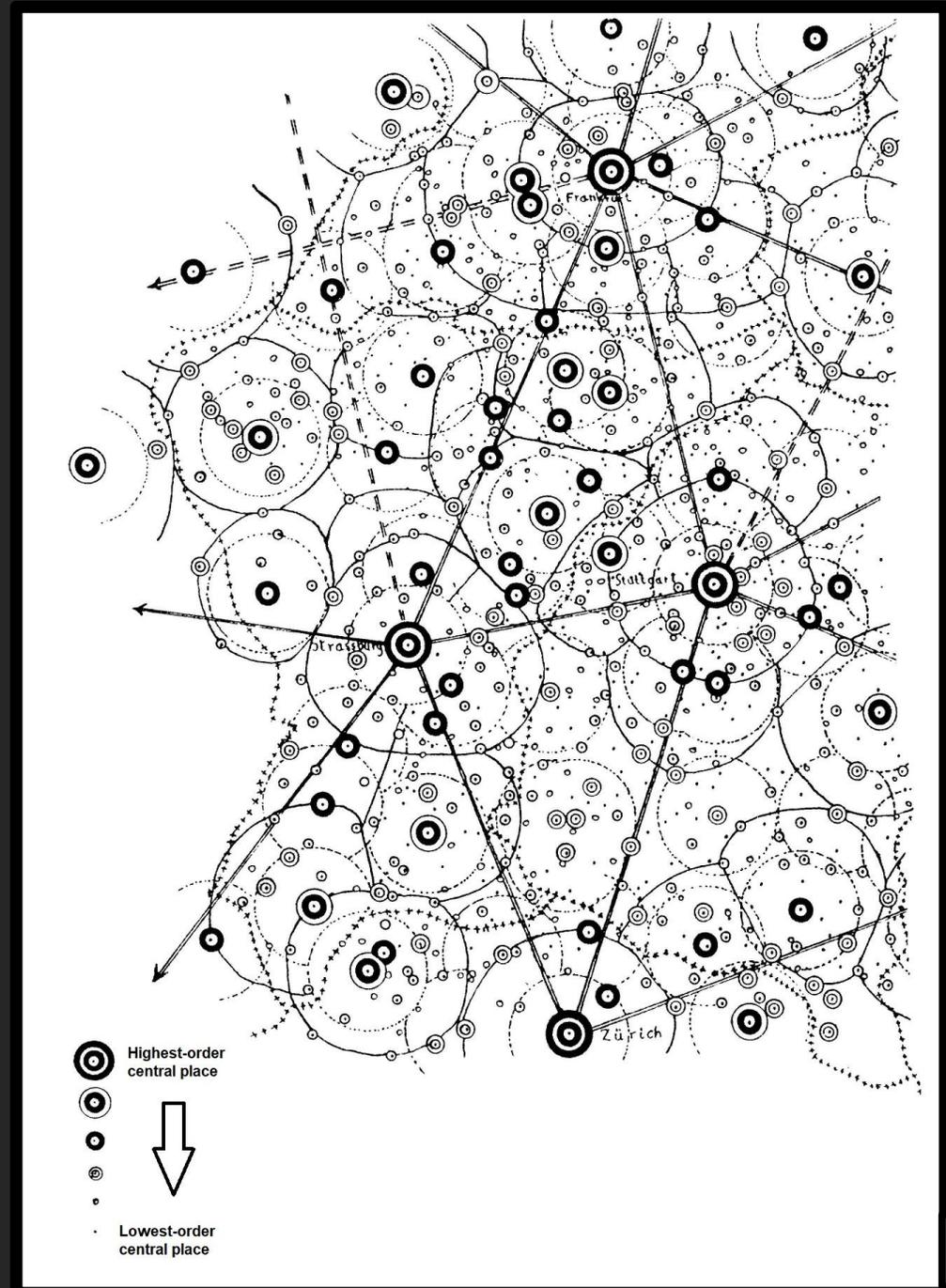


B) Services by type



Central Place Theory

Individuals would face longer trips to less common police services (fewer police stations would offer these) and shorter trips to the most common police services, such as crime registration.



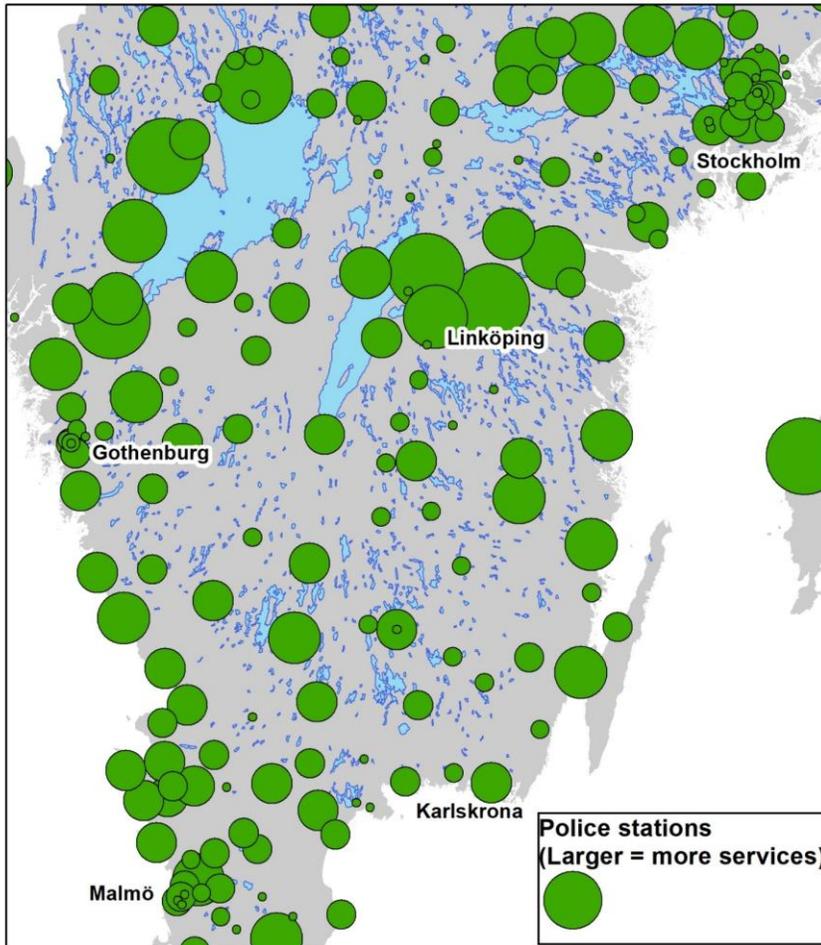
Results: Southern Sweden

*Hierarchical service distribution
Strong degree of central tendency*

Police stations and services offered

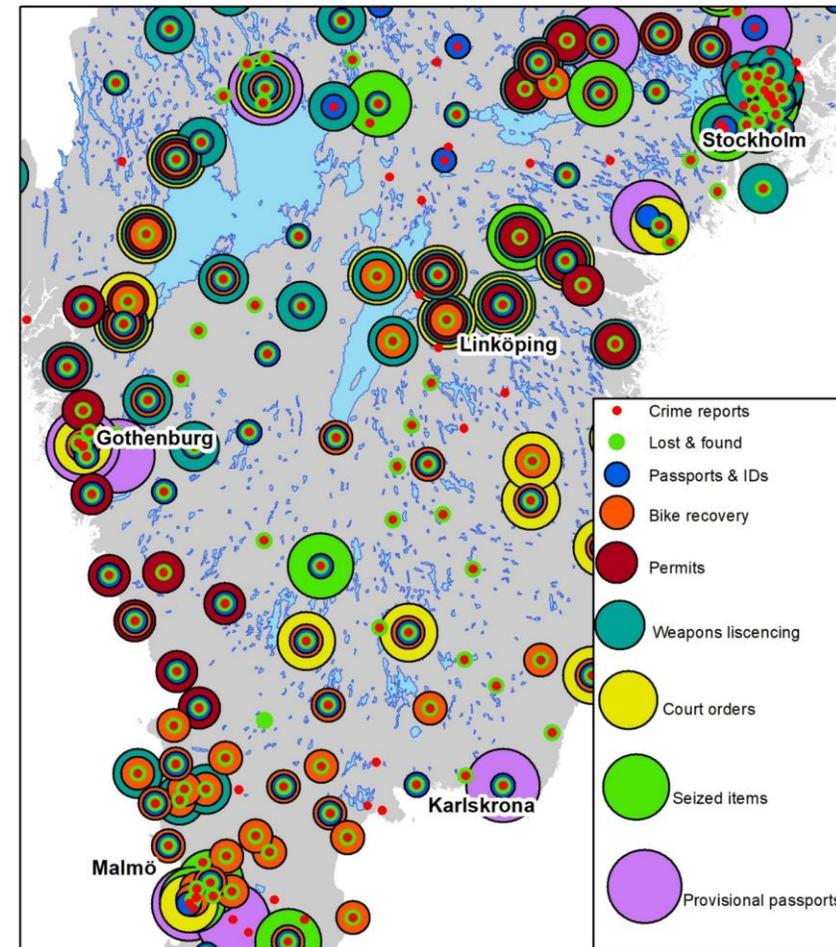
A) Number of services per station

0 20 40 80 Kilometers



B) Services by type

0 20 40 80 Kilometers



Results

- a large majority of the population has less than a 20-minute drive to the nearest police station – about 1,5 km walk
- in the most remote regions this can **take more than 90 minutes** – about 7 km walk drive times may be underestimated

Region	Mean drive time*	σ
North (N=23 635)	18.61	13.19
East (N=20 591)	13.07	6.66
South (N=39 372)	15.42	8.92

*From centre of grid-squares

(D) Service type	Mean drive time*	σ
Crime Registration	18.61	13.19
Passports & Ids	26.92	18.83
Weapon Licensing	43.59	36.02
Provisional Passports	138.53	88.45

*From centre of grid-squares

Results: Supply-side

	North		South			East	
Minutes	Pop	%	Minutes	Pop	%	Pop	%
0-5	805,194	46.3%	0-5	2,007,538	46.5%	2,196,063	55.9%
5-10	393,339	22.6%	5-10	1,153,724	26.7%	1,107,465	28.2%
10-15	193,288	11.1%	10-15	584,463	13.5%	346,863	8.8%
15-20	133,449	7.7%	15-20	291,597	6.8%	168,358	4.3%
20-25	82,084	4.7%	20-25	129,196	3.0%	61,839	1.6%
25-30	53,124	3.1%	25-30	55,744	1.3%	17,681	0.5%
30-45	53,312	3.1%	30-45	44,315	1.0%	6,807	0.2%
45-60	14,746	0.8%	45-60	18,222	0.4%	161	0.0%
60-90	4,992	0.3%	60+	11,616	0.3%	11,902	0.3%
90+	3,906	0.2%	-	-	-	-	-
Total:	1,737,434			4,296,415		3,917,139	

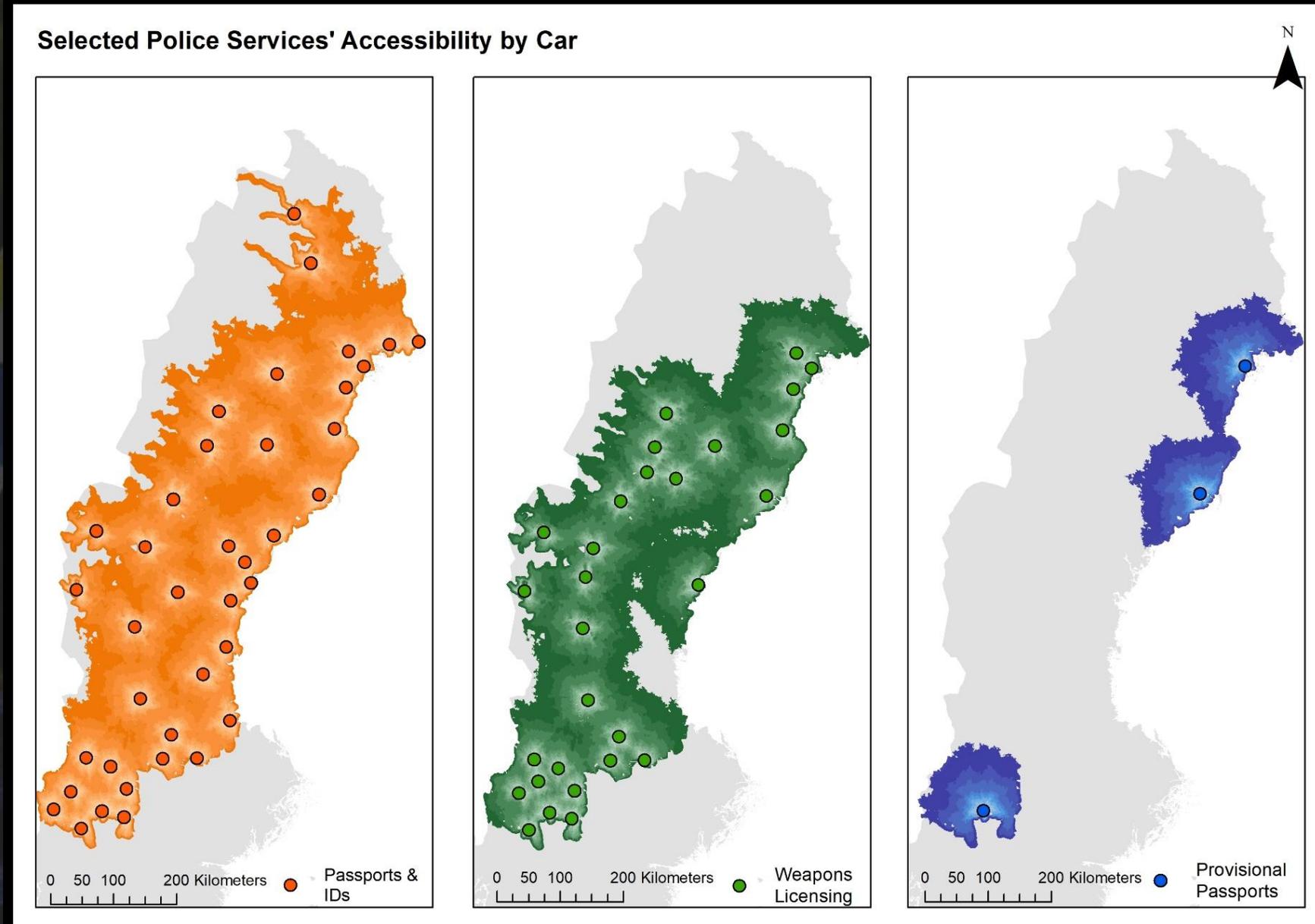
Pop within 20 minutes:

87.7%

93.5%

97.2%

Results: Services by type



The physical location of a police station will always remain important

- some police services by their nature cannot be accessed remotely, like lost and found.
- when responding to emergencies, police need to travel from police stations, so emergency response time depends partly on distance.
- in particular in smaller municipalities, police stations have become 'a catalytic hub', where all emergency services gather, police officers, volunteers, people in need of emergency services-- enabling daily practices that make the services happen but also the social life of the community.
- Police station - the building itself - is a symbol of law and order ('public reassurance') which directly affects public confidence in the police.

Thanks

Police Accessibility in Sweden: An Analysis of the Spatial Arrangement of Police Services

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Article

Police Accessibility in Sweden: An Analysis of the Spatial Arrangement of Police Services

Richard Stassen and Vania Ceccato

Abstract The Swedish police organization has recently undergone a significant restructuring, combining previously independent regional bodies into a single national authority. It is currently unclear how this process has affected the accessibility of police services. Using central place theory and notions of public reassurance as theoretical references, this study examines the distribution of police stations and how their spatial arrangement affects the population's access, by car, to various types of police services. Open-access data and geographic information systems underlie the methodology. Results show that, despite regional differences in population density, a large majority of the population has less than a 20-min drive to the nearest police station. However, residents of remote areas may have to travel more than 2 h to access uncommon services. The article discusses policy implications in the Swedish context, which are broadly relevant for understanding the supply of police services in other sparsely populated countries.

Introduction

The number of police officers employed in Sweden has risen by 20% since 2000, but this has not been evenly felt throughout the country. [Lindström](#)

the country. Little is known about the state of rural policing as 'studies of rural policing have fallen off the edge of many research agendas' ([Mawby and Yarwood, 2011, p.1](#)). Using Sweden