ZENTRALINSTITUT FÜR DIE
KASSENÄRZTLICHE VERSORGUNG
IN DEUTSCHLAND

Importance of social structure as a modifying factor for utilisation of ambulatory care

WIC Policy Conference Berlin, June 4/5 2015

Mandy Schulz, Thomas Czihal, Michael Erhart, Dominik von Stillfried

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Urbanism: the new dimension in socioeconomic pattern analysis

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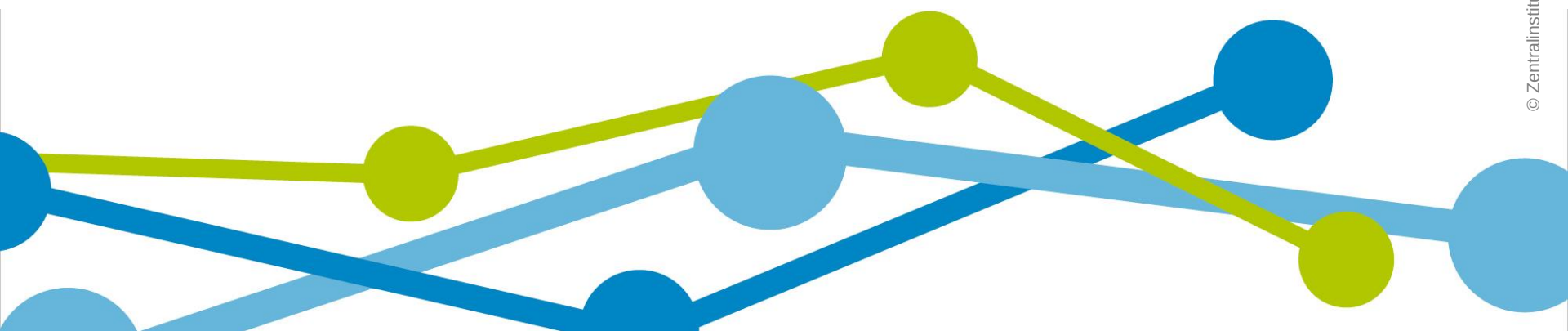


Background/Objective

- Main determinants of need for care (individual-level)
- Relation between health and socioeconomic status (individual and area-level)
- Consideration of regional specifics in need related planning

Aim of the study:

- Characterisation of regional socioeconomic and sociodemographic patterns (social structure)
- Quantitative measure(s)
- Examination of association with regional variation in morbidity, mortality and utilisation of health services

Methods/Material

Unit of analysis

- 412 rural and urban areas (counties) of Germany

Area-indicators of socioeconomic structure

e.g. rate of welfare recipients, income, rate of unemployment, life expectancy, long-term care, population density, type of household, interregional migration, school education

Area-indicators of need for care

- Mortality rates (no. of total/ premature deaths per 100,000)
- Inpatient service utilisation (no. of cases per 100,000)
- Measures of ambulatory claims data:
  - Relative Risk Score (RRS): expected value of claims based on age, sex and morbidity relative to average value of claims per person
  - Value of claims: total, GP claims, specialists claims, specific fee-items

Statistical Analysis

Characterisation of regional socioeconomic structure

- Exploratory factor analysis (principal component analysis and subsequent varimax rotation)

Association with indicators of need

- Bivariate correlation analysis (Pearson)

Results - Factor loading matrix*

	Factors	
Domain/ indicator	UX	SGX
Welfare benefits		
No. of people in supported households	0,295	0,900
Share of working welfare recipients	-0,093	0,739
Recipients of rent-subsidies	0,039	0,832
Welfare payments to pensioners	0,784	0,019
Income		
Income per household	0,221	-0,746
Employment		
Rate of unemployment	0,164	0,936
Rate of welfare recipients	0,267	0,912
Employment rate	0,748	0,007
Rate of highly qualified employees	0,745	0,076
Health status		
Life expectancy (males)	0,158	-0,802
Rate of long term care patients	-0,252	0,666
Population		
Population density	0,824	0,105
Share of foreigners	0,732	
Rate of single-households	0,749	0,396
Outmigration	0,842	-0,114
Inmigration	0,873	-0,197
Net balance of migration	0,670	-0,364
Education		
No. of students	0,712	0,102
School leavers without certificate	-0,078	0,767

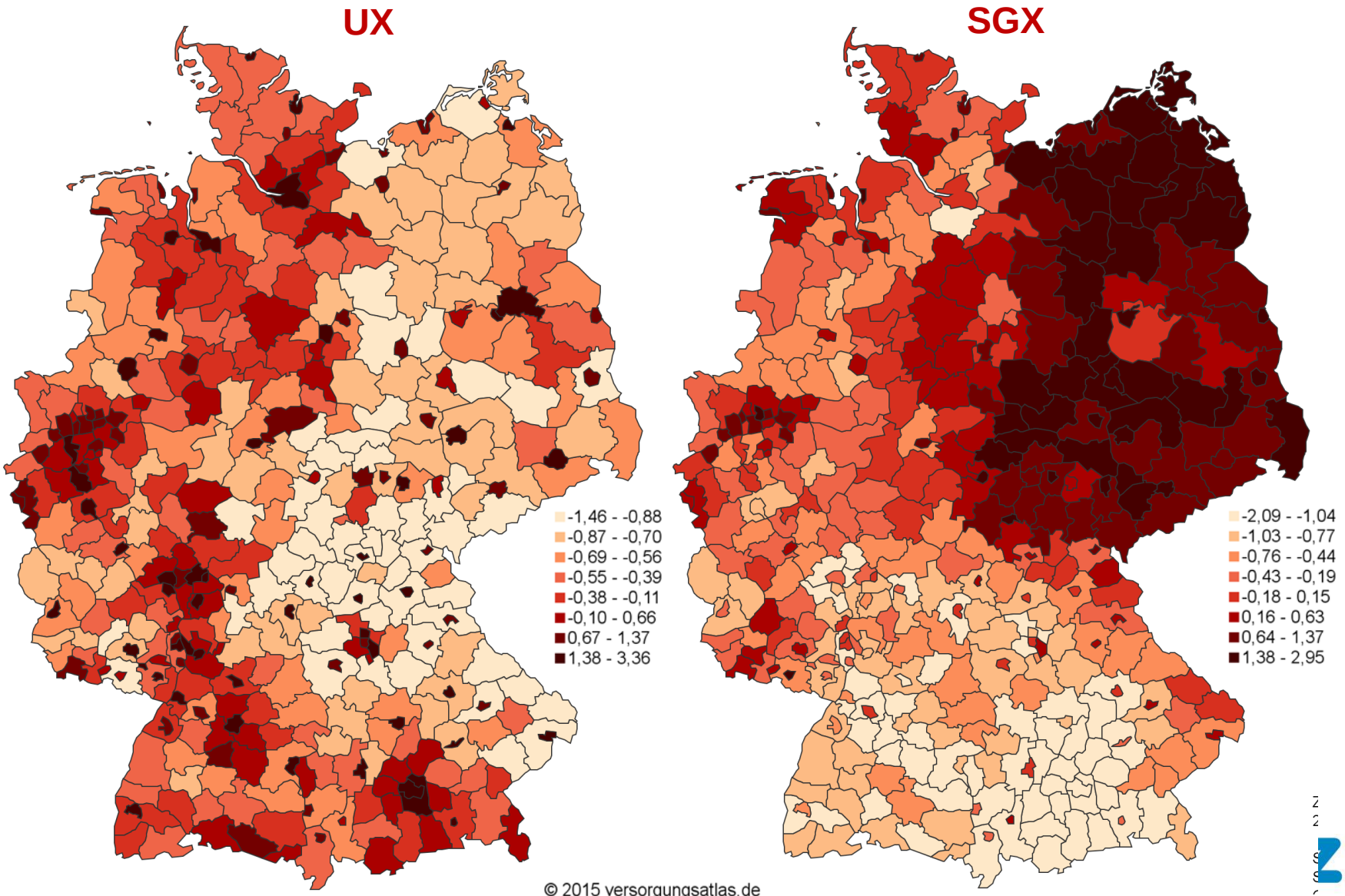
Socioeconomic Health Index (SGX):
Social and health deprivation

Urbanisation Index (UX):
Characteristics of urban population

Source: Data are from „Indikatoren und Karten zur Raum- und Stadtentwicklung. INKAR. 2012“

* Extraction method: principal component analysis
Rotation method: varimax with Kaiser-normalisation

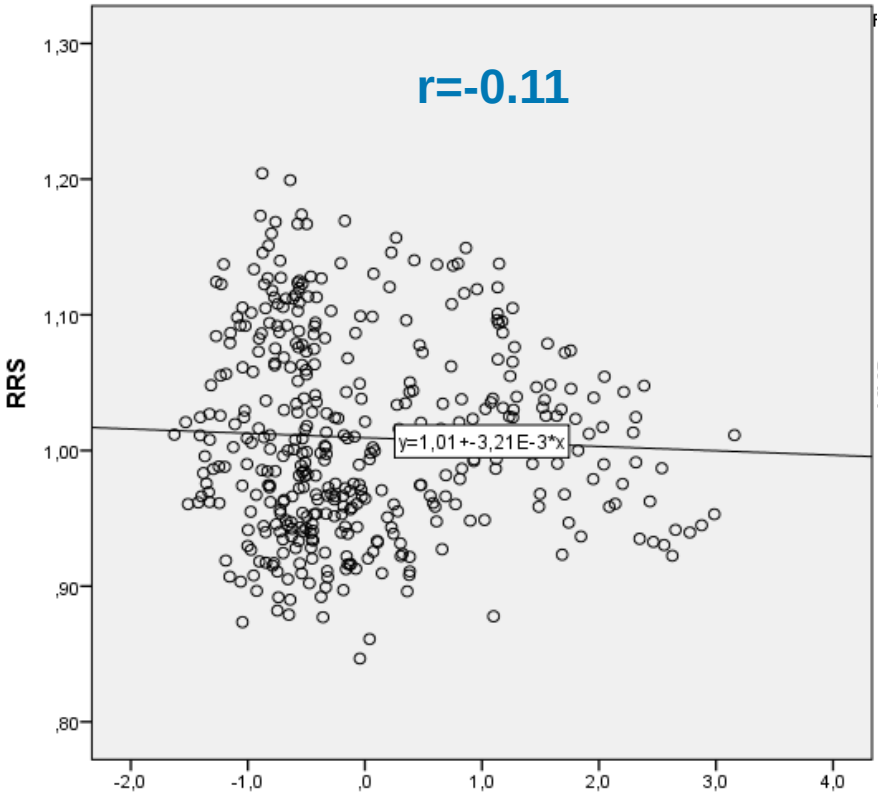
Results – Small area variation



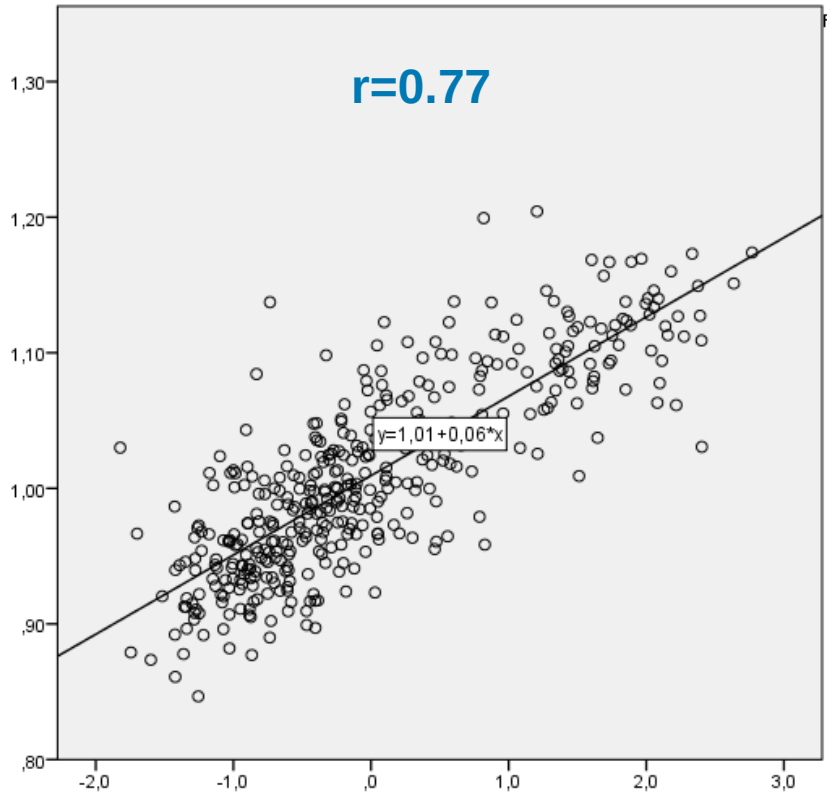
Results - Correlation to indicators of need

1) Morbidity (RRS, relative risk score)

UX



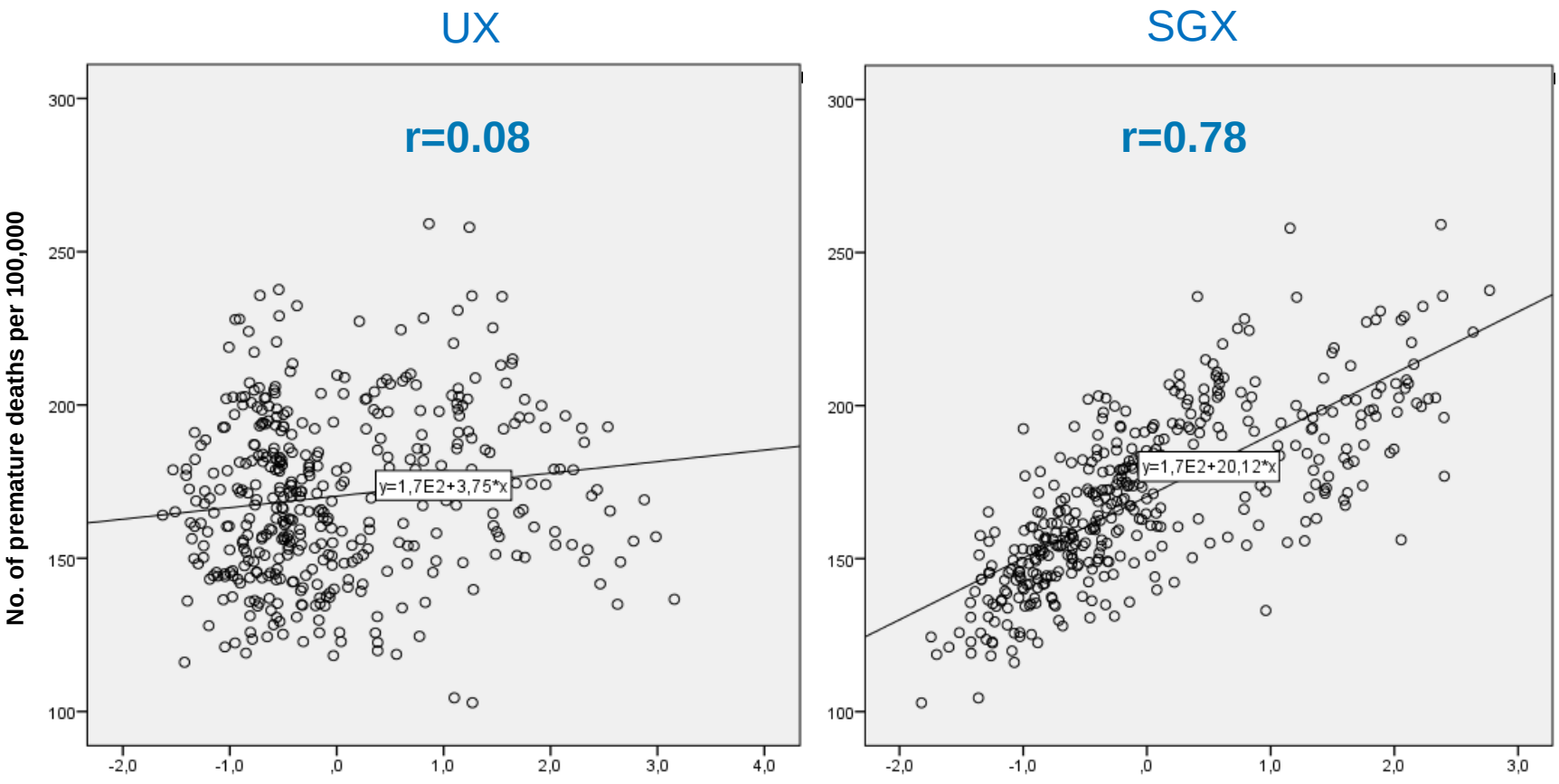
SGX



Source: Ambulatory claims data 2010

Results - Correlation to indicators of need

2) Mortality (premature death rate)



Source: Mortality statistics 2010

Results - Correlation with indicators of need

3) Health services utilisation

Measures of utilisation	Correlation coefficient (p-value)	
	UX	SGX
Inpatient care		
Admissions per 100,000	-0.28 (<0.001)	0.62 (<0.001)
Ambulatory care		
Total claims	0.40 (<0.001)	0.39 (<0.001)
GP claims	-0.13 (<0.01)	0.47 (<0.001)
Specialists claims	0.57 (<0.001)	0.11 (<0.05)
Specific fee-items		
Drug substitution (01950)	0.57 (<0.001)	ns
Multiple chronic diseases (03212)	-0.19 (<0.001)	0.65 (<0.001)
Psychotherapy (Ch. 35)	0.65 (<0.001)	-0.35 (<0.001)

***Sources**: DRG-Statistics 2010, ambulatory claims data 2010*

Summary and conclusions

- Identification of area-level socioeconomic patterns with distinct associations to need indicators:
  - UX: specific needs for care linked to urban living conditions, utilisation of ambulatory specialist care
  - SGX: overall population morbidity, utilisation of inpatient and GP care

- **Need for care may not only depend on socioeconomic deprivation**
- **Specific needs of urban populations**
- **Suggestive meaning of UX and SGX in planning of SHI-physicians to ensure need related health services warrants future study**

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Thank you for your attention

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