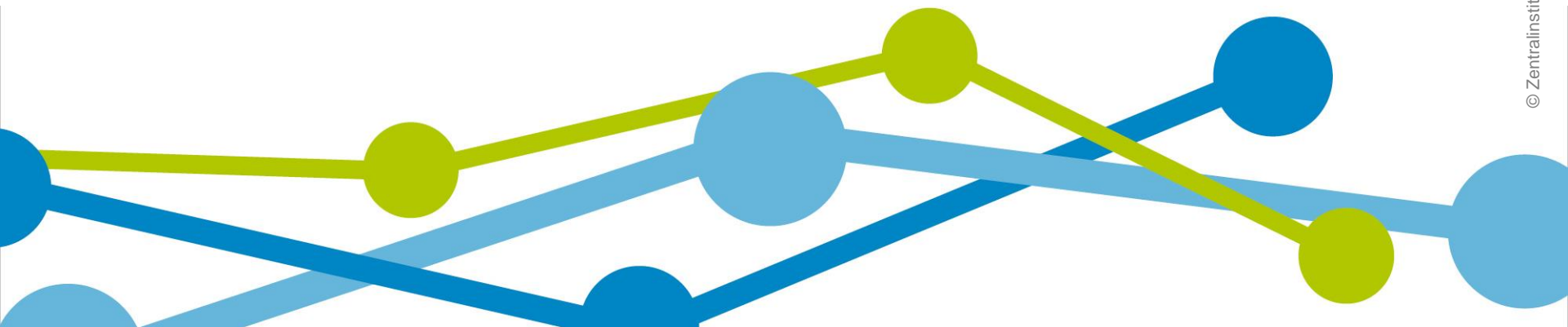


# Regional Variation in Utilization of Ambulatory Secondary Prevention Services in Germany

Benjamin Goffrier / WIC Policy Conference / April 15, 2016



# Structure

1. Theoretical Model
2. Applied Methods
3. Results
4. Discussion

# Theoretical Model

## – Foundation

### Research Question

To what extent can the number of individually utilized secondary preventive services be explained by regional variation on district level?

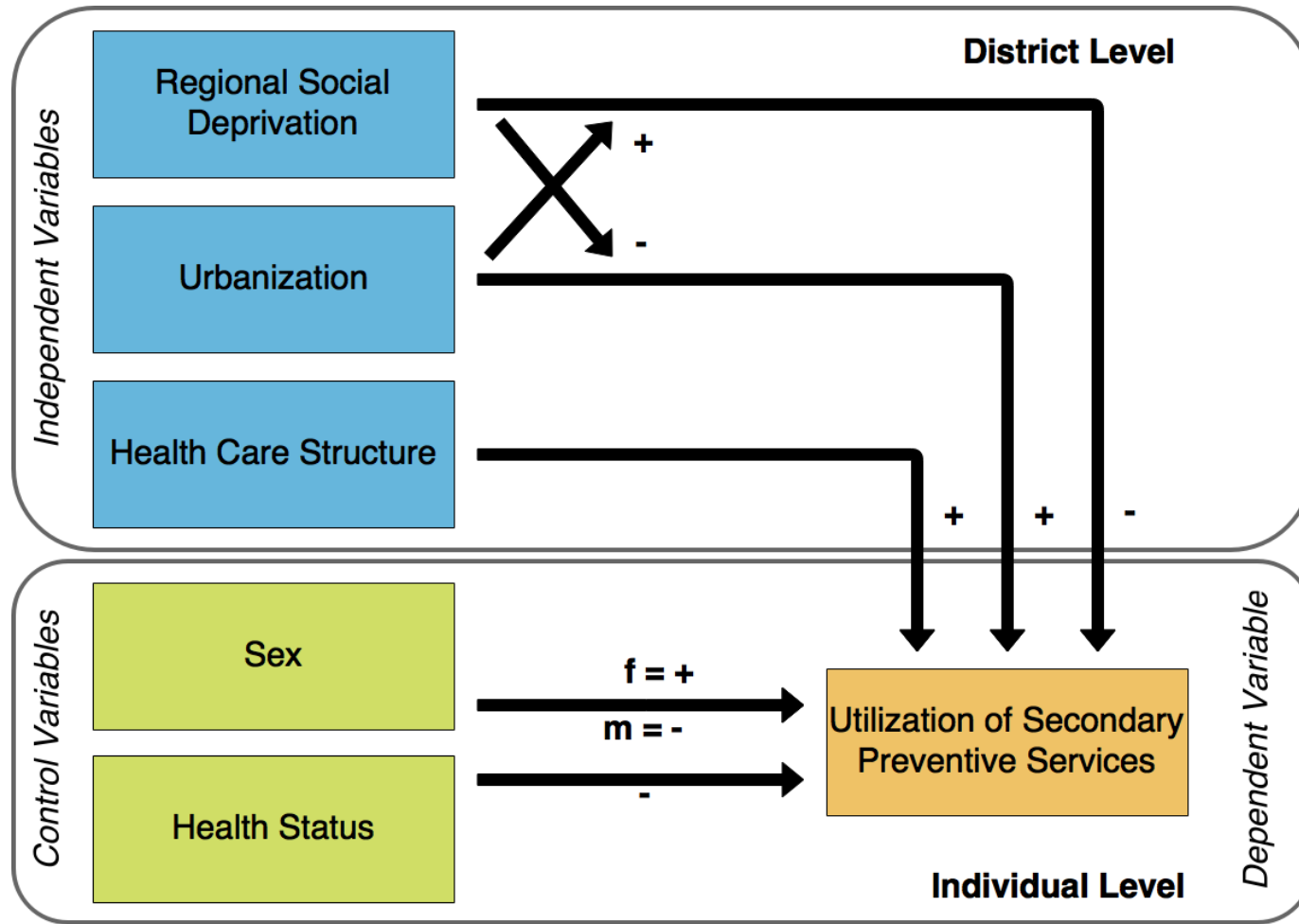
### Theoretical Approaches

utilization of secondary preventive services = health behavior

ecological approach

# Theoretical Model

## - Hypotheses



# Applied Methods

## – Data Sets

Regional Social  
Deprivation

Urbanization

**Federal Institute for Area Research**

**Data Set: INKAR**

**2012**

Health Care Structure

**Federal Physician Registry**

**2013**

Sex

Health Status

Utilization of Secondary  
Preventive Services

**Complete Nation-Wide Claims Data on  
Ambulatory Physician Services**

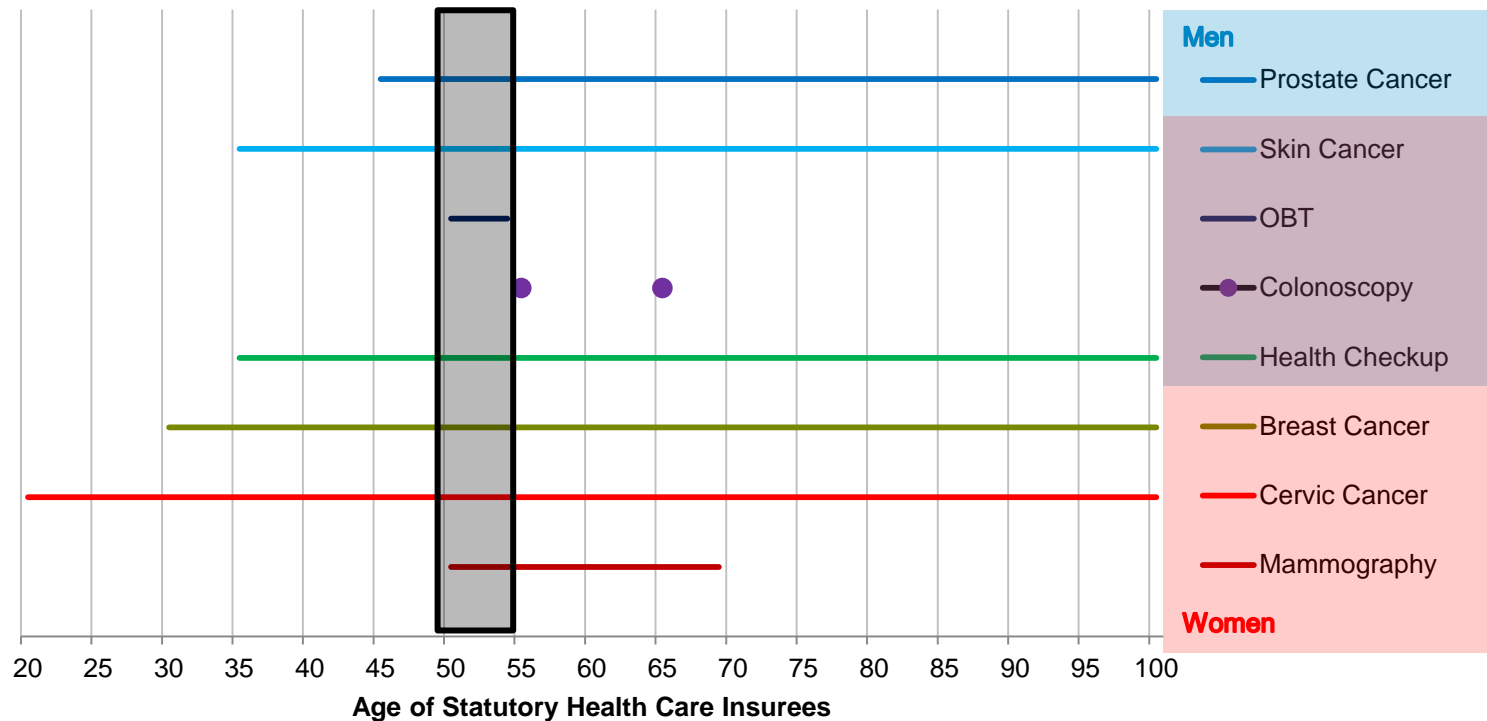
**2013**

# Applied Methods

## – Operationalization of Utilization

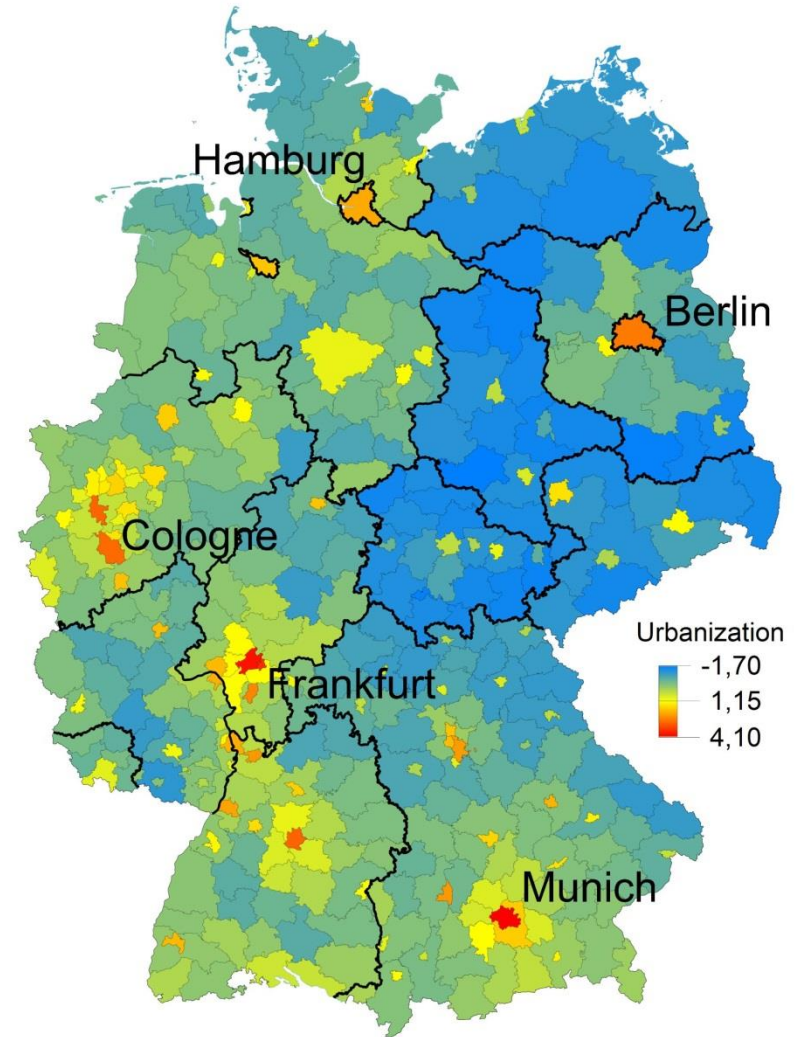
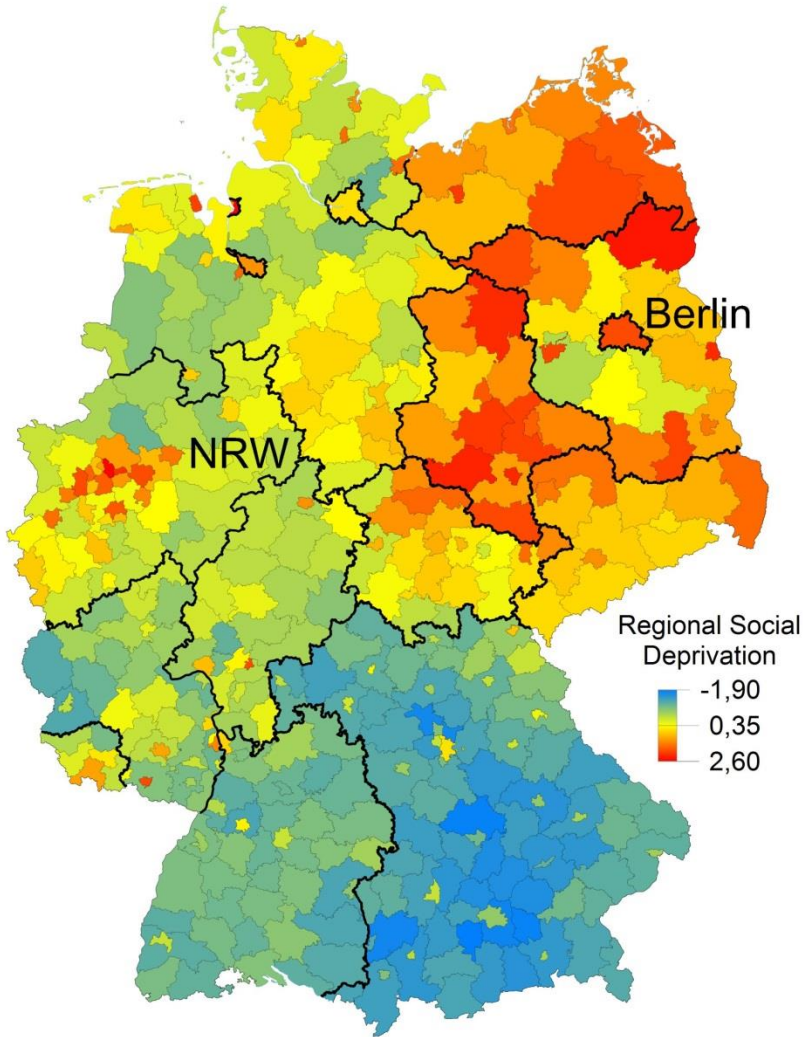
Utilization = Number of all utilized secondary preventive screenings in 2013

Population = All Statutory Health Care Insurees aged 50 to 55



# Applied Methods

## – Operationalization of Regional Social Deprivation & Urbanization



# Applied Methods

## – Hierarchical Regression Analysis

### hierarchical multivariate linear regression analysis with fixed effects

variables on several aggregate levels

strength and direction of effects

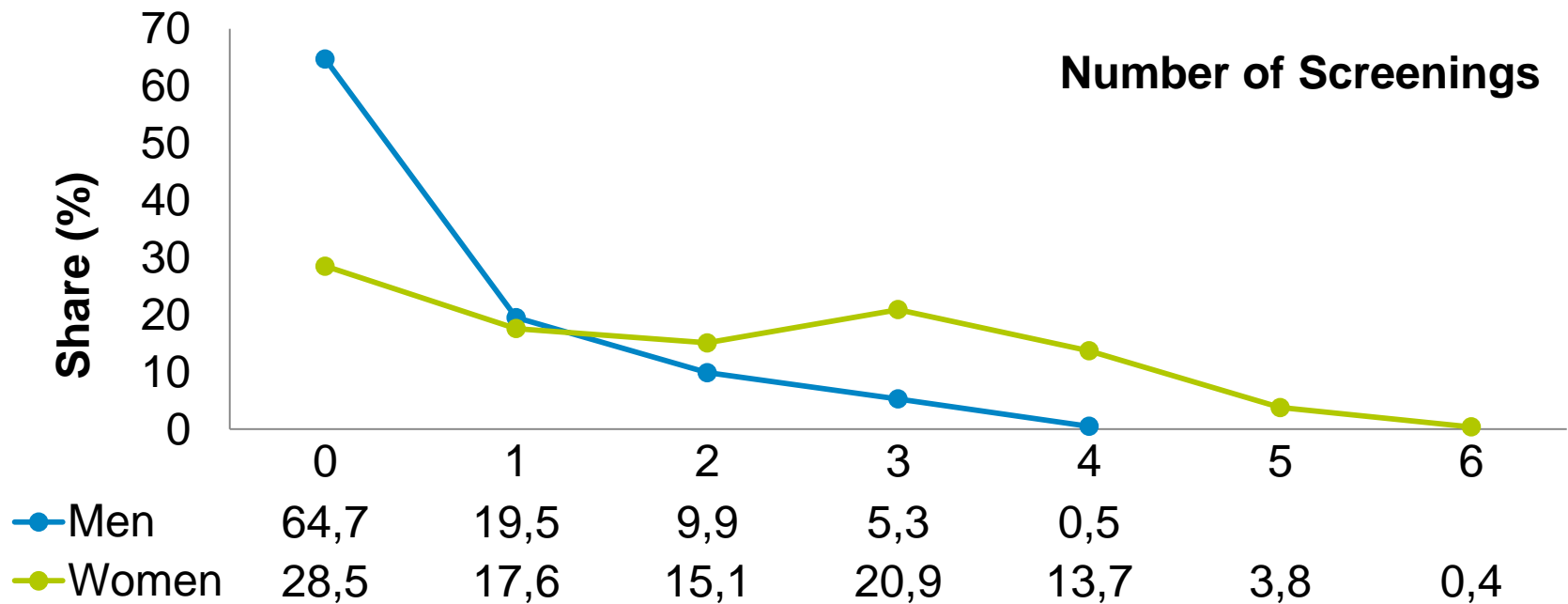
share of variance explained by the model



# Results

## – Descriptive Statistics

	Men		Women		Total
<b>Number Screenings</b>	1.718.816	20,48%	6.673.707	79,52%	<b>8.392.523</b>
<b>Number Population</b>	2.994.670	45,57%	3.576.519	54,43%	<b>6.571.189</b>



# Results

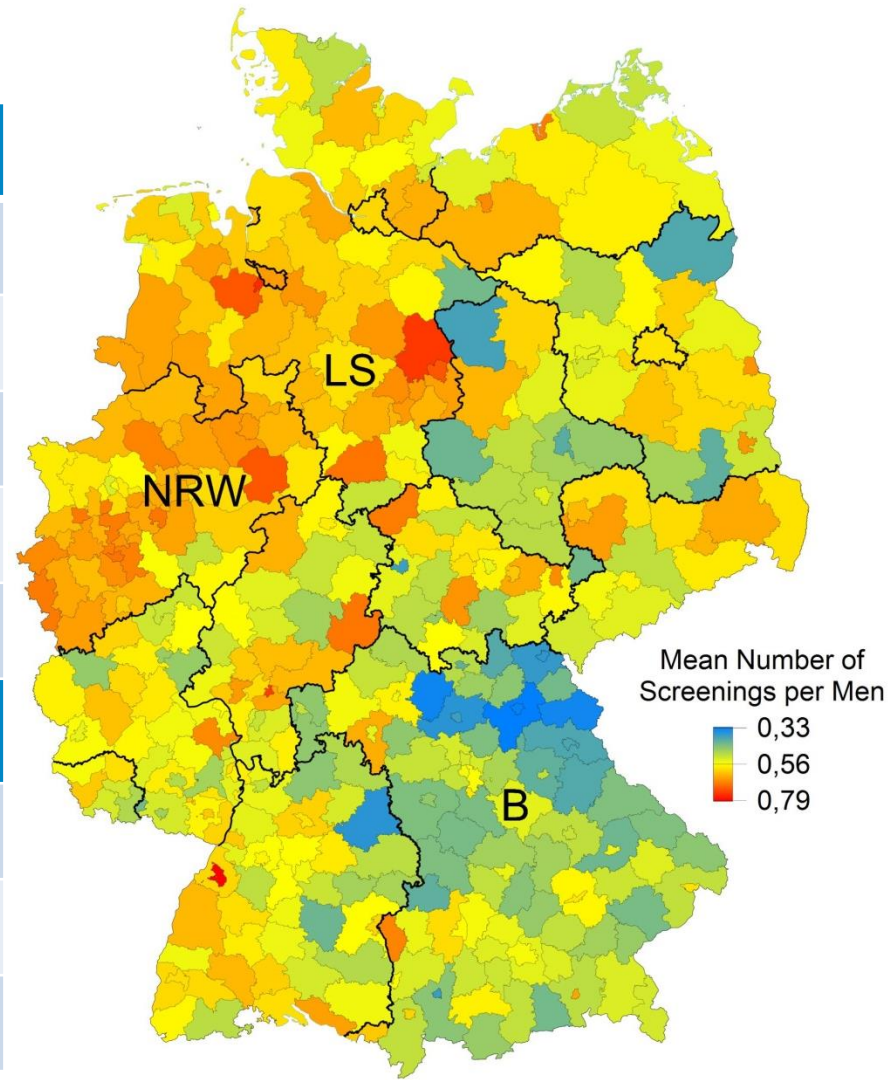
## – Complete Hierarchical Model

	Estimation	Sign.
Constant Term	0,6646	<0,001
Sex	1,0904	<0,001
Health Status	0,4937	<0,001
Deprivation	0,0388	<0,001
Urbanization	-0,0045	0,433
Deprivation * Urbanization	-0,0210	<0,001
	Estimation	Sign.
Residual	1,4704	<0,001
Constant Variance-Term	0,0107	<0,001
Share of Explained Variance		19,3%

# Results

## – Hierarchical Model Men

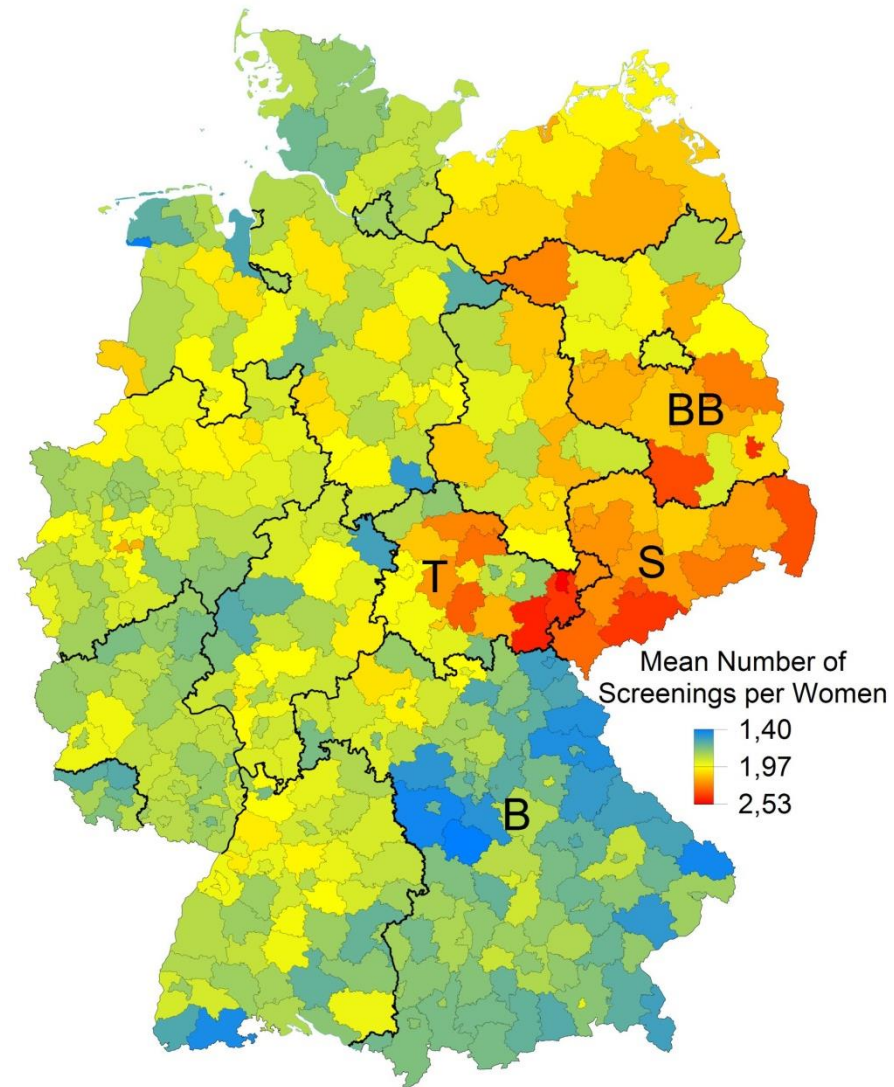
	Estimation	Sign.
Constant Term	0,6152	<0,001
Health Status	0,2655	<0,001
Deprivation	0,0148	<0,001
Urbanization	0,0189	<0,001
Deprivation * Urbanization	0,0005	0,899
	Estimation	Sign.
Residual	0,7652	<0,001
Constant Variance-Term	0,0054	<0,001
Share of Explained Variance	6,9%	



# Results

## – Hierarchical Model Women

	Estimation	Sign.
Constant Term	1,7312	<0,001
Health Status	0,6285	<0,001
Deprivation	0,0563	<0,001
Urbanization	-0,0259	0,002
Deprivation * Urbanization	-0,0389	<0,001
	Estimation	Sign.
Residual	1,996	<0,001
Constant Variance-Term	0,0231	<0,001
Share of Explained Variance		30,6%



# Discussion

utilization patterns vary systematically by sex:

**1.**

men: model does not fit

women: high deprivation & low urbanization = more utilization

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**2.**

east-west-differences confound results

possible explanation: socialization in GDR

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**3.**

individual level factors stronger than district level factors

significant regional variation of utilization

**Thank you  
for your attention**

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