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Regional Differences in Long-Term Care in Germany and Their Relationship with Socio-economic Factors

A study based on the concept of
disability-free life expectancy

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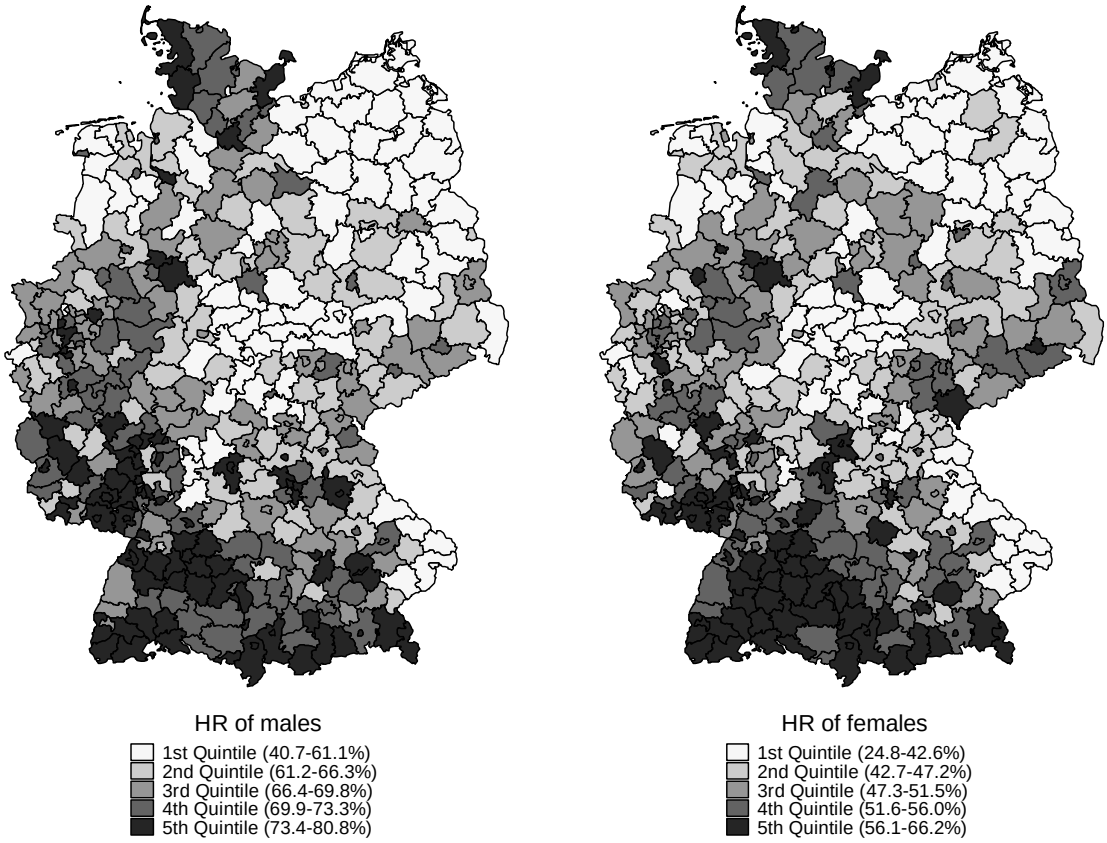
Extended Abstract

The long-term decrease in mortality in ageing societies results in a continuing raise of persons in older and oldest ages. In these highest age groups, degenerative disorders and diseases are highly concentrated. Therefore, aging populations experience an ongoing expansion in the share of persons in poor health. Although an increase in morbidity prevalence can be stated in all highly developed countries, the pace and extent of changes differ between and also within the countries.

This study explores spatial patterns in care need in Germany by using the Health Ratio (HR). We use the German Care Need statistics 2009, an official register of all recipients of help from the German public long-term care insurance, in combination with regional and national life table estimates and socio-economic indicators for the 412 German counties of the regional database of the German National Statistical Office.

We find consistent clusters of regions with low or high HR (e.g. of persons in age 85+, see figure 1), which extend beyond the borders of federal states and are linked to the region's socio-economic background.

Figure 1: Health ratio (HR) in age 85+ of males (left) and females (right) in 2009; categorized in quintiles



Note: Due to the usage of sex-specific standardization, the comparability of the HR between males and females is limited.
Source: Statistische Bundesämter des Bundes und der Länder; Pflegestatistik 2009; own calculation and plotting

Applying meta-regression models, we find effects of regional characteristics on the between-region variance. A high population density, a high mean household income, a low unemployment, and low premature mortality are significantly linked to a high HR (e.g. of persons in age 85+, see figure 2).

One of the strengths of our study is the option to use a total census that allows us to do small-area analyses. Due to the fact that the participation is mandatory, all care (allowance) recipients are covered in the register.

Figure 2: Meta-regression models of HR for males (right) and females (left) in age 85+

		Males		Females	
		Coefficient	***p-value***	**Coefficient**	***p-value***
Constant		64.67	*<0.001*	50.07	*<0.001*
Disposable income of the private households (quintiles)	***1st - lowest***	**Ref**		**Ref**	
	2nd	1.89	*0.111*	-2.08	*0.128*
	3rd	4.02	*0.003*	0.48	*0.754*
	4th	4.48	*0.002*	1.95	*0.237*
	5th - highest	4.75	*<0.001*	2.04	*0.226*
Population density (quintiles)	***1st - lowest***	**Ref**		**Ref**	
	2nd	0.47	*0.599*	0.83	*0.426*
	3rd	2.23	*0.024*	1.68	*0.139*
	4th	3.08	*0.002*	2.69	*0.017*
	5th - highest	6.44	*<0.001*	7.73	*<0.001*
Unemployment rate (quintiles)	***1st - lowest***	**Ref**		**Ref**	
	2nd	-1.49	*0.101*	-2.56	*0.014*
	3rd	-2.48	*0.009*	-3.35	*0.002*
	4th	-3.74	*<0.001*	-4.90	*<0.001*
	5th - highest	-5.58	*<0.001*	-6.74	*<0.001*
Level of premature mortality (quintiles)	***1st - lowest***	**Ref**		**Ref**	
	2nd	-0.42	*0.639*	-0.63	*0.539*
	3rd	0.26	*0.773*	0.46	*0.659*
	4th	-0.50	*0.580*	-1.15	*0.272*
	5th - highest	-1.76	*0.067*	-1.83	*0.099*
Adjusted R^2		35.97%		28.05%	

Source: Statistische Bundesämter des Bundes und der Länder; Pflegestatistik 2009

However, there are also some limitations, mainly resulting from the ecological design of the study. The health outcome (the HR) is a synthetic aggregate measure of data on individual level. In result, we have no direct information about the composition of the population in the regions and therefore we are not able to separate the effects of composition and context. Thus, it is possible to detect correlations only; we are not able to identify causality.

To our knowledge, this is the first study that for Germany shows the existence of regional differentials in care need and the resulting HR. Even more important, we show that these differentials are linked to the regional socio-economic structure which opens the possibility of policy interventions.