

# ESTIMATION OF FAIRNESS OF DISTRIBUTION OF HUNGARIAN HOSPITAL BEDS BY CALCULATING GINI COEFFICIENT

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## OBJECTIVES

We aimed to analyze the changes in the hospital beds and its spatial inequalities as well as to estimate the fairness of their distribution by calculating Gini coefficient in Hungary between 2000-2024.

## METHODS

Data on hospital beds in operation and population were obtained for the period 2000-2024 from the Hungarian Central Statistical Office database. We determined the number of hospital beds in operation per 1,000 population and 1,000 square kilometers nationally and by each county. We calculated the corresponding Gini coefficient values and drew the Lorenz curve for the years 2000 and 2024. The fairness of distribution of beds was calculated by both population and service area.

## RESULTS

In Hungary, the number of hospital beds per 1,000 population decreased from 8.3 to 6.4 (-23.0%) between 2000-2024. In 2000 and 2024, the number of hospital beds per 1,000 population was the highest in Budapest (13.1; 9.3), while the lowest in Pest County (4.1; 2.2). Hospital beds per 1,000 square kilometers decreased from 896.9 to 659.0 (-26.5%) in Hungary between 2000-2024. In 2000 and 2024, the number of hospital beds per 1,000 square kilometers was the highest in Budapest (45,055.3; 29,847.1), while the lowest in Somogy County (399.7; 280.3). The distribution of hospital beds based on population showed near-perfect equality both in 2000 ( $G=0.0010$ ) and 2024 ( $G=0.0998$ ). Based on service area, the distribution of hospital beds remained highly unfair ( $G=0.8170$ ;  $G=0.8053$ ).

## CONCLUSIONS

In Hungary, the number of hospital beds per 1,000 population showed a decreasing tendency (-23.0 %) between 2000 and 2024. The distribution of hospital beds on a population basis showed equality, but on a service area basis, usual inequality, both in 2000 and in 2024.

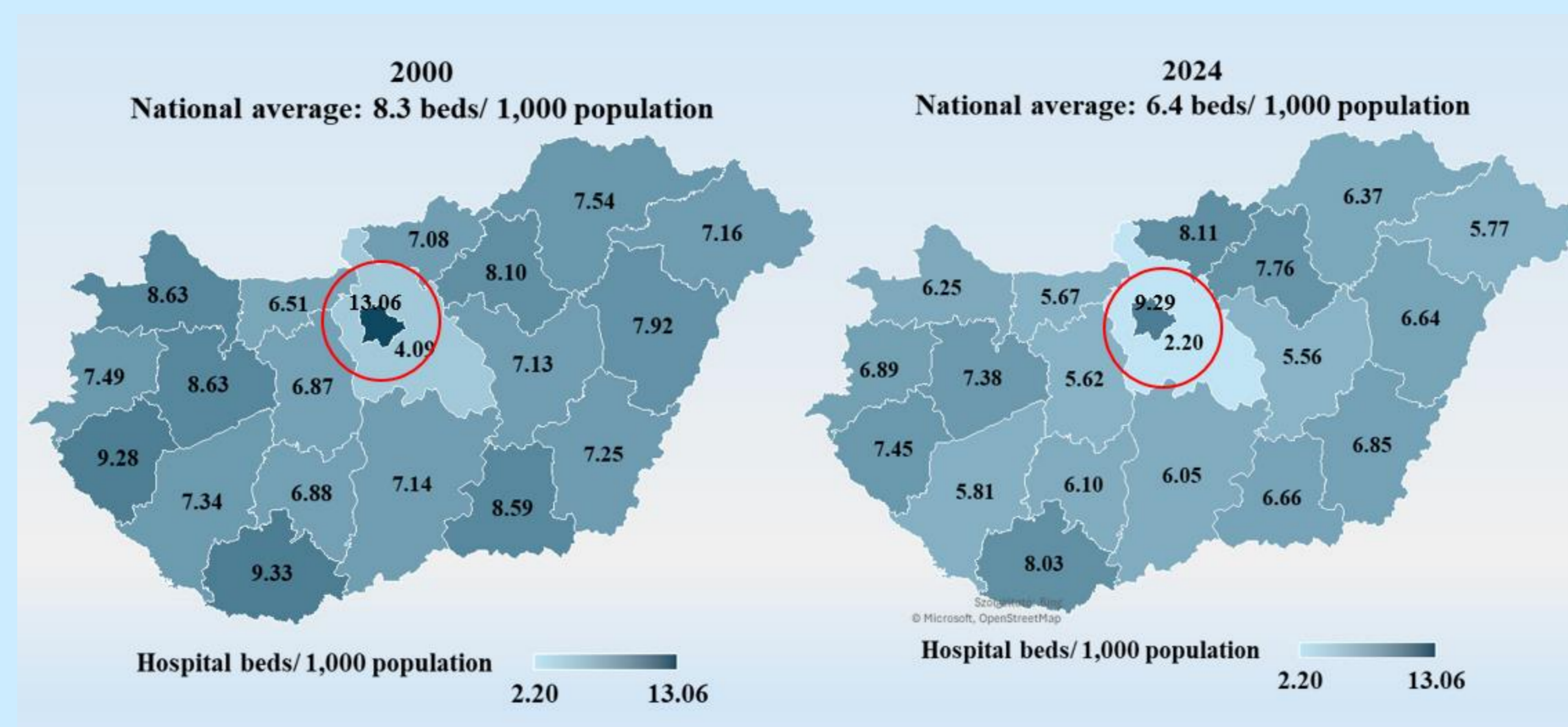


Figure 1. Spatial disparities in the number of hospital beds per 1,000 population in Hungary

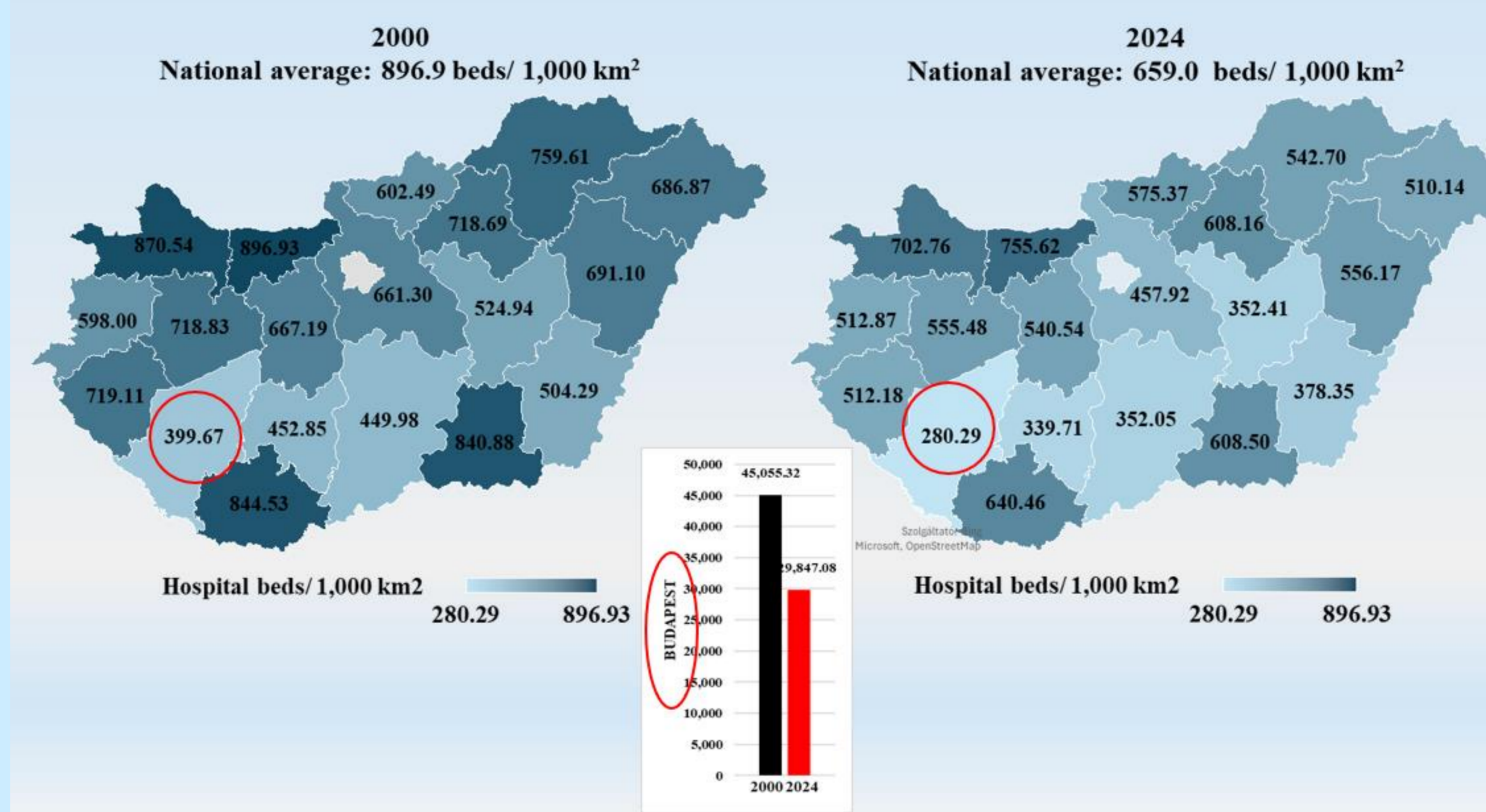


Figure 3. Spatial disparities in the number of hospital beds per 1,000 km² in Hungary



Figure 2. Changes in Hungarian hospital beds by county per 1,000 population in 2000 and 2024

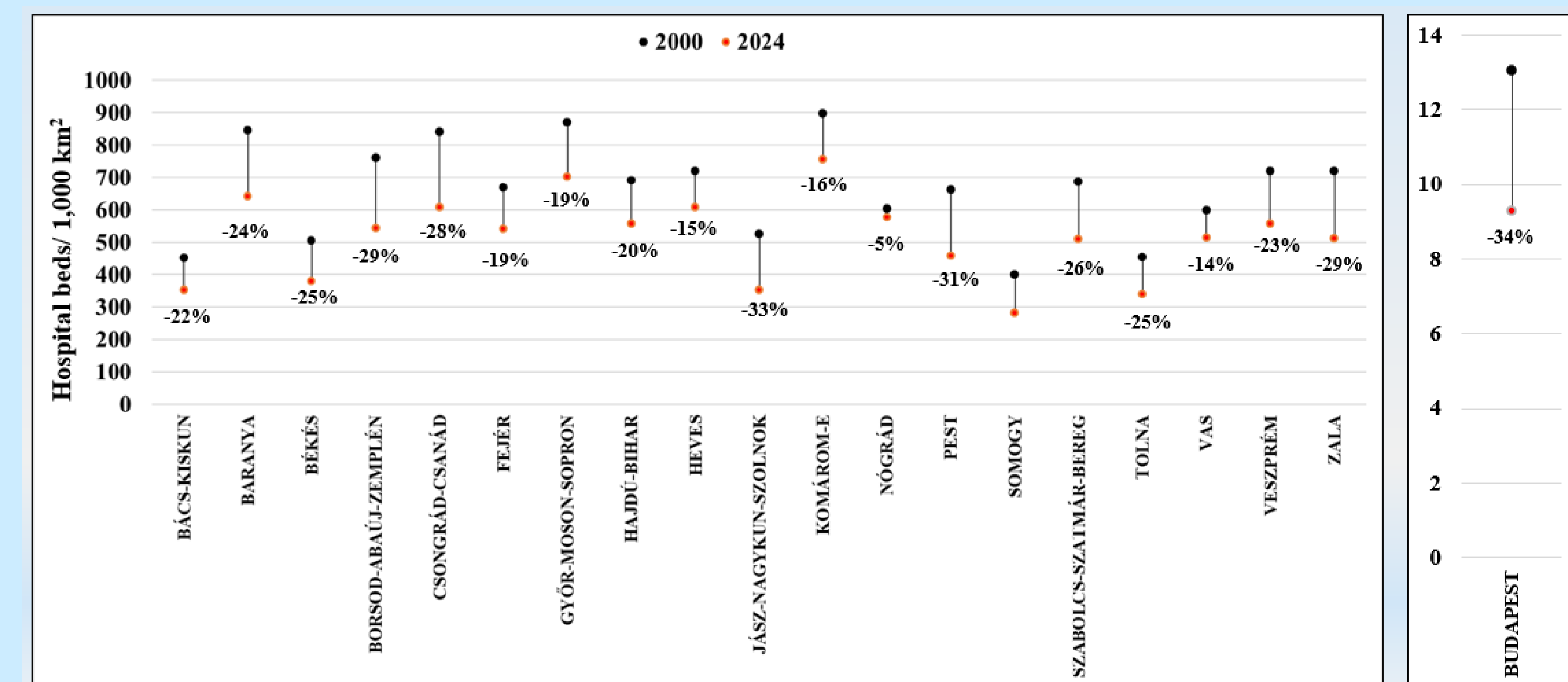


Figure 4. Changes in the number of Hungarian hospital beds by county per 1,000 km² in 2000 and 2024

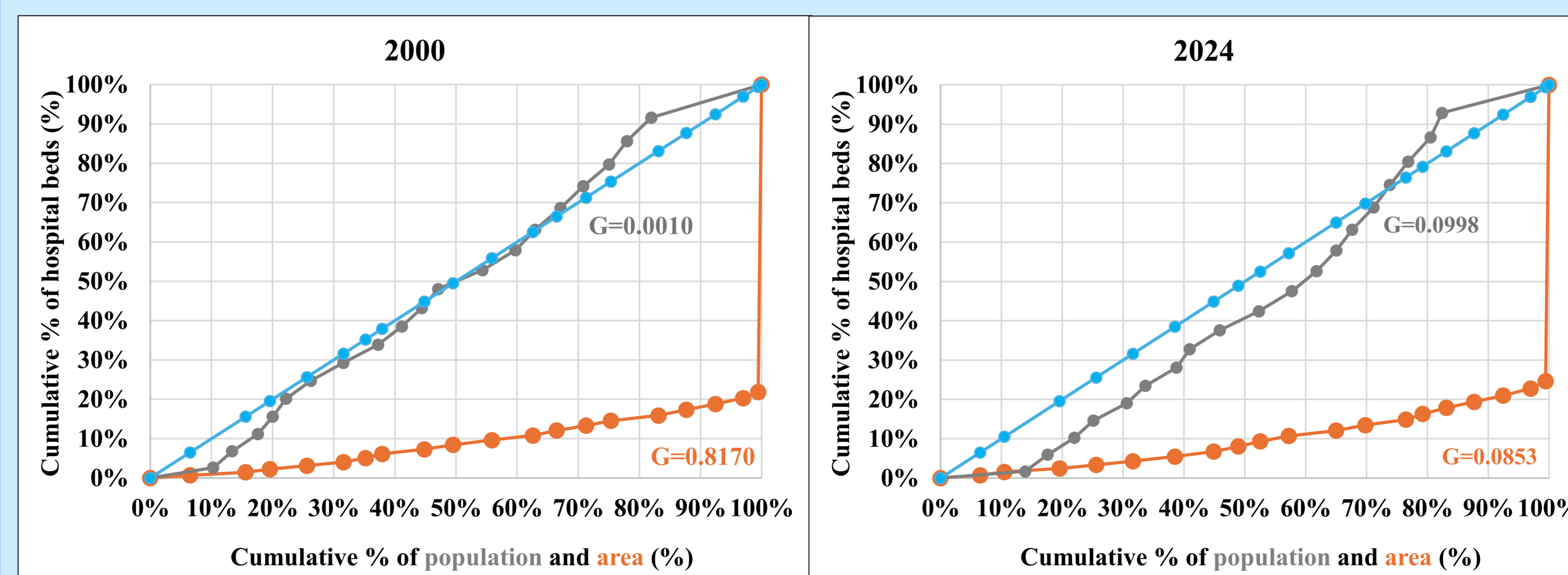


Figure 5. Distribution of hospital beds by population and area in Hungary: Lorenz curves for 2000 and 2024

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