Mortality, Land Size and Soil Quality in five parishes in Scania, Sweden, 19th century

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RESEARCH QUESTION AND MAIN HYPOTHESES

We are interested whether the hazard of dying decreased over time between 1813 and 1914, depending on the soil type and property size of the plot people were living on.

Did the mortality risk in Scania decrease over time during the period between 1813 and 1914, when the soil condition and property size are taken into account?

Hypotheses:

- Mortality risk decreased over time from 1700 onwards due to improvements in health and nutrition status, which in turn leads to improved life expectancy and higher agricultural productivity in subsequent generations;
- Large plot of lands with poor soil condition demanded more labor and energy input to have a sufficient yield;
- Hard labor and poor energetic expenditure, accompanied by malnutrition and poor control of infectious diseases, led to poor health status.

METHODODOLOGY

- Individuals above the age of 5 followed until death or censoring;
- Three periods investigated: (1813 - 1859), (1860 - 1889), (1890 - 1914);
- Six different soil categories plus two categories (unknown, unlinked);
- Square km/property;
- Standard controls (BirthYear, Parish, SES, Sex);
- Estimating the models using Cox regression;
- Database: Scania Economic Demographic Database.

DATA INTERPRETATION

The three maps show the variation in time and space of population density of hamlets (Address Name Codes). The density is defined as person years per squared kilometer, the average yearly density is displayed as averaged by the periods (1813-1859, 1860-1889, and 1890-1914). The density varied considerably between hamlets but it does not show a cluster of hamlets that return no counts in southeastern Sireköping after 1890. All years were placed into 1813-1859 quantiles in order to see density increases over time in the hamlets.

Visualization of a dominate soil type in the five parishes which we would hypothesize to have a low mortality density.

CONCLUSIONS AND FURTHER WORK

Conclusions

- Mortality risk in Scania declined in the period between 1813 and 1914;
- There seems to be no statistically significant association between mortality risk and the interaction between soil and property size;
- We do find evidence that certain soil categories are associated with higher mortality risks.

Further work:

- Thorough study of the changes in the virulence of pathological agents;
- More detailed analysis of soil distribution within property holding;
- Map topology and density is a challenge when working with SEDD’s dataset;
- Spatial and tabular linkage require the variable AddressNameCode and not the variable PropId;
- Geographic information work is required to successfully analyze density at the sub-parish level.

REFERENCES