

## **Abstract**

There has been a recent surge in research on human capital in general, as portrayed by Unified Growth Theory (e.g., Galor 2005), and on measuring human capital adequately today and in history in particular.

Researchers use today a broad range of human capital proxies. Woessmann (2006) lists some of them: e.g., education-augmented labour input, adult literacy rates, school enrolment ratios, level of education attainment and average years of schooling. Not all of them can be used in an historical perspective since data are often not sufficiently available. The most important historical proxies for human capital in Europe are literacy (taking the form of the ability to ‘read and write’ and signature rates), school enrolment ratios, book production, the number of schools or the number of teachers, and more recently, numeracy. Numeracy has been approximated by the age heaping method in a range of relatively new studies. Therefore, compared to the literature on literacy, research on numeracy is still in its infancy. However, literacy and numeracy have been closely intertwined throughout history and thus this relationship deserves more attention by researchers in the future.

Moreover, to trace back the history of human capital in the long-run, it appears crucial to connect several indicators so that the long-term implications of human capital on the economy may be assessed. Still, evidence on the relationship between numeracy and other proxies has been restricted to few country case studies and has sometimes been limited to cross-country analyses. In this paper, I use a recently constructed and large data set on numeracy covering most of European regions in the 19<sup>th</sup> century and combine it with corresponding regional literacy values of the same time period. Thus, I am able to compare numeracy and literacy data on a regional level and to further analyse the inherent characteristics of numeracy values based on the age heaping strategy.

The results show that there is mostly a high correlation between numeracy and literacy indicators, even though the patterns are not always strictly the same. However, this relationship becomes less evident as one indicator approaches its lower or upper bound. Nevertheless, both indicators are helpful in understanding the long-term development of human capital and their combination enables researchers to get a clearer picture of the impact of human capital on economic growth.