

# **The influence of age and age structures on the values of demographic and epidemiological indicators during the COVID-19 pandemic**

## **Abstract**

The main goal of this work is to demonstrate the importance of age and age structures in the analysis of the course of the COVID-19 pandemic. The results should provide a comparison of several European countries (Czechia, Austria, Germany, Slovenia, Italy, and Spain) between 2020 and 2022. Specifically, the work is focused on the influence of age structures on the values of summary epidemiological indicators, on the contributions of age groups to changes in life expectancy and on the change in summary epidemiological indicators of the pandemic after the introduction of vaccination. To fulfil these goals, the method of direct standardization, the method of decomposition of the change in life expectancy according to Pollard and the method of decomposition of the difference of gross measures according to Kitagawa were used. The primary source of pandemic data was the COVERAGE-DB database, which contains the numbers of confirmed cases of the disease, deaths from COVID-19 and vaccinated persons, sorted by gender and age. The results of the analyses showed a significant influence of the age structure of the population with confirmed infection on the values of the summary epidemiological indicators. It was also shown that the age groups from 70 to 90 had the largest share of the decrease in life expectancy at birth between 2019 and 2020.

**Key words:** COVID-19 pandemic, age, age structure, standardization, decomposition