Health Outcomes of Risk of Automation at Work: Evidence from Germany

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Abstract

Automation is transforming work at a rapid pace, and its significance goes far beyond labor and labor markets. However, little is known about its societal consequences. This study contributes to the growing literature on sociodemographic outcomes of technological change by investigating the impact of risk of automation at work on subjective and objective health measures of German employees. We merge the German Socio-Economic Panel (GSOEP) (2013-2018) with the substitution potentials for occupations - a proxy for automation risk - from the Occupational Panel for Germany (Grienberger et al., 2022). Our main explanatory variable – high risk of automation – follows the task-based approach of Author et al. (2003) and builds on the distribution of different tasks within occupations. We define occupations with more than 70 percent of routine tasks as those being at a high risk (Dengler and Matthes, 2015). Our estimates from the linear probability models suggest that employees working in occupations with a high risk tend to be worse off in terms of self-reported health, health satisfaction and are more likely to end up taking days off due to illness. No effects on anxiety and visiting a doctor are found in the pooled sample. We also conduct several robustness checks (alternative model specifications, heterogeneity analyses) with results remaining mostly consistent with our main findings, while uncovering some heterogeneity in effects among the analyzed groups. Overall, the results of this study highlight potential threats of automation to health and the need for policy measures which might prevent its negative spill-over effects.

Key words: automation risk, digitalization, tasks, population health, GSOEP, Occupational Panel for Germany