What are the effects of workforce automation across race and gender in the United States?

November 22 2023

Credit: Unsplash/CC0 Public Domain

Advances in areas such as robotics and artificial intelligence enable the automation of a range of occupational tasks, leading to fundamental

changes in the nature of work. New research published in the *American Journal of Economics and Sociology* indicates that the effects of job automation vary across race and gender and, without targeted interventions, will likely result in increasing inequality.

The research analyzes two distinct measures of automation job displacement risk for more than 1.4 million Americans across 385 occupations. The findings show that the intersection of race and gender has a significant effect on automation risks.

For example, when compared with white males, Black, Hispanic, and Native American males face 5.8%, 3.9%, and 2.8% higher job automation risks, respectively, when all other variables are held constant. Asian males, however, are at a 0.9% lower risk. Compared with white males, white females have a 1.6% lower risk, and Black females have a 1.1% lower risk.

Hispanic females have a 0.5% higher risk, and Asian females have a 0.8% higher risk. Native American females were not correlated with a higher or lower risk of automation than white males. Age, disability, and country of birth were also significant factors for job automation risk.

The study also underscores the importance of education in reducing automation risks and the need to address existing racial and gender disparities in educational attainment. For instance, holding all other variables constant, Black females had a 1.1% lower automation risk than white males. However, once education is considered, the relative risks change considerably. A white male with a Bachelor's degree, for example, has a 21.3% lower job automation risk compared with a Black female with a high school degree.

"This study offers valuable insights into the complex interplay of race, gender, education, and other factors with automation risks in the

American workforce. It highlights the importance of tackling discrimination and educational gaps based on race and gender," said corresponding author Ian P. McManus, Ph.D., of Emerson College.

"It also emphasizes the need to adopt policies that ensure equitable opportunities and outcomes for all workers, especially those facing greater economic vulnerability and social exclusion due to this technological transformation."

More information: Workforce Automation Risks Across Race and Gender in the United States, *American Journal of Economics and Sociology* (2023). DOI: 10.1111/ajes.12554. onlinelibrary.wiley.com/doi/10.1111/ajes.12554

Provided by Wiley