Human Capital and Algorithms: Determinants of AI Use

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Abstract

This article analyses how patterns of artificial intelligence (AI) tool use in Spain vary across sociodemographic, socioeconomic and knowledge-based sources of heterogeneity. Drawing on human capital, digital divide and privacy-calculus perspectives, we analyse data from the 2025 Barometer 3495 of the Centro de Investigaciones Sociológicas (N = 4,004). We distinguish four blocks of predictors: personal characteristics, labour-market position, social stratification and self-perceived knowledge of AI tools. Using ANOVA, linear regression and a multilayer perceptron neural network, we show that AI use is highly stratified. Younger, more educated, higher-income and higher-class respondents, as well as students and highly qualified professionals, report substantially greater use. Self-perceived knowledge of AI tools is by far the strongest predictor, explaining more than one quarter of the variance and outweighing all sociodemographic factors. The findings document pronounced knowledge and age gaps in AI adoption and highlight implications for inclusive AI-based service design and public policy.

Track: Consumer Behaviour