Navigating Biases, Accuracy, and Ethics in Generative AI: Implications for Social Sciences

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Abstract

This study investigates the complex relationship between generative AI and social sciences, focusing on three critical issues: biases in AI systems, assessment of AI-generated text accuracy, and ethical-legal challenges associated with AI use. The research is grounded in the conceptual frameworks of algorithmic fairness (Mehrabi et al., 2021) and responsible AI development (Dignum, 2019). Using a mixed-methods approach, 50 AI experts and 200 non-expert users have responded so far to online surveys which explore their perceptions and concerns surrounding these issues. Quantitative data were analyzed using descriptive (i.e. means, standard deviations and frequencies) and inferential statistics (i.e. chi-square tests and t-tests), while qualitative responses underwent thematic analysis (Cohen's kappa > 0.80). Key findings include: 78% of AI experts consider bias a significant issue in current AI systems; 62% of non-experts express concern about AI-generated content biases. For accuracy assessment, 73% of experts advocate for a combination of quantitative metrics and human evaluation. Ethically, 89% of experts and 67% of non-experts support increased AI regulation. The study also revealed a significant gap between expert knowledge and public understanding of AI capabilities and limitations. Experts identified training data (89%) as the primary source of AI bias, while non-experts showed limited awareness of the technical aspects of AI systems. The results underscore the need for interdisciplinary approaches to mitigate AI biases, improve accuracy assessment methods, and develop comprehensive ethical frameworks for AI in social sciences. This study contributes to the growing body of literature on AI ethics and provides valuable insights for policymakers, researchers, and practitioners working at the intersection of AI and social sciences. Future research directions can include longitudinal studies on AI perception and case studies of AI implementation in specific social science domains.

Keywords: Generative AI, Social Sciences, Bias, Accuracy Assessment, AI Ethics

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