



AI and Research Vistas in Social Science

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DOI : <https://doi.org/10.5281/zenodo.20050484>

ARTICLE DETAILS

Research Paper

Accepted: 03-04-2026

Published: 18-04-2026

Keywords:

AI, Machine language, Big Data, NLM,

ABSTRACT

Artificial Intelligence (AI) has emerged as a game-changer, revolutionizing the way researchers collect, analyze, and interpret data in the field of Social Science. This is transformative technology by accelerating the pace of discovery and expanding the horizons of what is possible in understanding human behavior, society, and culture. AI is already having an impact on our work and livelihoods. As with other periods of technological change, efficiency gains are likely to mean job losses and an increase in unemployment. If we want to have any chance of reaching goals of inclusive development. The application of AI as a tool for analysis includes use of Big Data , Machine Language MLfor Predictive models . NLP for Sentiment Analysis. Further the AI offers many opportunities in interdisciplinary research. The use of AI needs judicious approach as it creates challenges such as job loss and addiction to machines and becoming machines as masters. The use off AI by criminals crates various socio economic issues offer fertile land for researchers.

Introduction

Artificial Intelligence (AI) has emerged as a game-changer, revolutionizing the way researchers collect, analyze, and interpret data in the field of Social Science. This is transformative technology by accelerating the pace of discovery and expanding the horizons of what is possible in understanding human behavior, society, and culture. At present we don't yet know exactly how AI will shape our field but it is already having an impact on our **work** and livelihoods. As with other periods of technological



change, efficiency gains are likely to mean job losses and an increase in unemployment. If we want to have any chance of reaching a future that we want, whether that be social equity or environmental sustainability, we do as social scientists need to raise our collective voice. (Geoff Mulgan)⁵. The framing of AI falls into a familiar pattern of technological utopianism which is an optimistic belief that technology is the primary driver of progress and the key to solving society's problems. Much of my work as a researcher in sustainable design and retrofit has been spent critiquing this tendency and to problematise the idea that technology on its own can serve as a simple, catch-all solution to complex socio-economic and environmental issues.

The increasing human-like capabilities of AI are also attracting attention in social science research, leading to various studies exploring the combination of these two fields. The first direction is focused on *AI for social science*, where AI is utilized as a powerful tool to enhance various stages of social science research. While the second direction is the *social science of AI*, which examines AI agents as social entities with their human-like cognitive and linguistic capabilities. This paper introduces a fresh perspective to reassess the relationship between AI and social science, provides a cohesive framework that allows researchers to understand the distinctions and connections between AI for social science and social science of AI.

- 1. AI and Big Data based Research:** AI is able to process vast amounts of data with speed and precision is perhaps its most prominent feature. In the context of social science research, this capability has paved the way for novel research methodologies. The traditional methods surveys and interviews, while valuable, often suffer from limitations such as sample bias and subjective responses tapping into a wide range of sources, including social media, online forums, and even sensor data, to gain insights into human behaviour.
- 2. NLP and Sentiment Analysis :** The researchers can gauge public sentiment towards various issues, products, or policies. This technology has been particularly instrumental in understanding political trends, consumer preferences, and the dynamics of online communities. It allows researchers to track and analyze large volumes of text data, providing insights into the evolving opinions and emotions of the people.
- 3. Machine Learning and Predictive models:** The use of AI-driven models using ML in financial economics, can predict stock market movements or economic recessions with greater accuracy. In sociology, these models can help anticipate shifts in social behavior and demographics, enabling policymakers to make more informed decisions. Researchers can use AI tools for social science



research to create predictive models that forecast outcomes based on historical data and current trends.

4. **Data Visualization and AI:** AI is playing a crucial role in data visualization. Complex social science data can be challenging to communicate effectively, but AI-powered visualization tools can turn abstract numbers and statistics into interactive graphics and dashboards. This makes it easier for both researchers and the general public to grasp and engage with complex social phenomena. As AI tools become more accessible and user-friendly, individuals without extensive data analysis backgrounds can engage in meaningful research. This inclusivity fosters diverse perspectives and opens the door to innovative research questions that might otherwise have been overlooked
5. **AI and New Vistas of research:** The use of AI in social sciences is ushering in a new era of evidence-based understanding. From behavioral psychology to cultural anthropology, AI and social science are forming a powerful synergy. AI simplifies large-scale data interpretation but also enables meta-analysis of previous studies, helping answer complex questions such as: Can generative AI improve social science? The early signs are promising. By bridging qualitative and quantitative approaches, AI helps in mapping global migration patterns due to events like covid or war .AI in social sciences is opening new vistas that were previously inaccessible due to methodological constraints. AI shift underscores the role of AI in research as not just a technical asset but a transformative influence, changing how we pose questions and draw conclusions in the social sciences
6. **Interdisciplinary Research:** Social science is inherently multidisciplinary, drawing on insights from psychology, economics, anthropology, and more. AI can sift through vast bodies of literature and identify connections between seemingly disparate fields AI in social science research is not without challenges. Ethical considerations around data privacy, algorithmic bias, and the responsible use of AI loom large.

Future Course: A way Ahead

As social researchers, have a responsibility to think deeply and critically about the adoption of AI technologies, and how they could, or should, shape our work and our lives. That means asking some crucial questions, such as in whose interest has AI been designed, invested in, developed and rolled out? How it is going to make impact on jobs and its impact on environment as data centres creates heavy use of water. Another are of concern is its human connection and experience. AI will increase screen time and disconnect with real people. On wider social background the issue of inclusion and representation is



vital. The danger of control of humanity by machines can not be ruled out. This accelerates the digital divide and power concentration.

Limits of AI

The AI is supportive tool and the qualitative job have limits in using it. It also poses the issues of Ethics and Responsibility. The end of private life and confidentiality will give a dangerous weapon in the hands of AI owners.

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