Chapter 13
How Can We Use Artificial Intelligence in Social Sciences

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ABSTRACT

This chapter explores the transformative impact of Artificial Intelligence (AI) on the social sciences, examining how technologies like machine learning, natural language processing (NLP), big data analytics, and neural networks reshape research methodologies, data collection, and theoretical frameworks across disciplines such as sociology, psychology, political science, anthropology, and economics. The chapter investigates the ethical, methodological, and epistemological challenges of AI integration. Using a qualitative methodology, it analyzes literature and case studies to assess AI's capabilities and limitations. Findings show AI-powered tools enhance data processing and prediction, but also raise concerns about data privacy, algorithmic bias, and the opacity of AI models. The chapter concludes that AI should complement, not replace, traditional methods, with a focus on transparency, ethical safeguards, and interdisciplinary collaboration.

INTRODUCTION

In the digital age, Artificial Intelligence (AI) has emerged as a transformative force across diverse academic disciplines. The book *The Power of Words in an AI-Driven World* explores the multifaceted relationship between AI and society, emphasizing its implications for communication, ethics, and human development.

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Within this broader context, the present chapter focuses specifically on AI's evolving role in the social sciences, a field traditionally grounded in theoretical inquiry and human-centered methodologies.

Historically, social science research has relied on qualitative and quantitative methods to explore human behavior, institutional structures, and societal change. From early ethnographic fieldwork to statistical modeling in economics and political science, these methods were shaped by theories emphasizing context, meaning, and reflexivity. However, beginning in the late 20th century and accelerating rapidly after the 2010s, AI technologies began to challenge and expand these paradigms. With the development of machine learning (ML), natural language processing (NLP), and big data analytics, researchers gained new tools to analyze vast and unstructured datasets, enabling more profound and more scalable insights into complex social phenomena (Domingos, 2015; Kitchin, 2014).

The last decade has seen unprecedented growth in integrating AI into social science research. From predicting election outcomes through social media analysis to mapping global migration patterns using satellite data, AI now facilitates previously unimaginable research due to methodological or logistical constraints (Lazer et al., 2020; Xie, 2023). Moreover, the post-pandemic digital acceleration has further underscored the urgency of incorporating AI-driven approaches in understanding rapidly evolving social dynamics (UNESCO, 2023).

This chapter explores the application of AI in child therapy and the ethical importance of cultural sensitivity in AI design. While it highlights how AI can be humanized and applied in compassionate contexts, the chapter broadens the scope to examine AI's broader methodological, epistemological, and ethical implications across core social science disciplines such as political science, sociology, psychology, and economics.

By tracing both the **historical development** of AI in social research and its **contemporary manifestations**, this chapter critically examines its dual role as both a powerful enabler and a source of disruption. While AI technologies enhance social science inquiry's precision, scope, and speed, they also raise profound concerns about **algorithmic bias**, **transparency**, and the **epistemological shift** from theory-driven to data-driven knowledge production (Jasanoff, 2021; Binns & Veale, 2024).

Ultimately, this chapter aims to assess how social sciences can adapt to and shape the use of AI to improve research outcomes and preserve the discipline's normative commitments to equity, reflexivity, and human agency in a digital world.

The rapid evolution of Artificial Intelligence (AI) has induced transformative shifts in various academic fields, particularly within the social sciences. Historically, social science research has been anchored in qualitative and quantitative methodologies to examine human behavior, societal structures, and economic phenomena. However, AI-powered tools have significantly altered the research landscape by