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ARTIFICIAL INTELLIGENCE (AI) TOOLS IN SOCIAL SCIENCE RESEARCH: THE PROSPECTS AND PROBLEMS

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ABSTRACT
With the rapid advancement of Artificial Intelligence (AI), its tools have emerged that support researchers in improving accuracy, efficiency, and relevant literature review. AI has emerged as a transformative force in social sciences research, reshaping traditional research practices and enhancing scholarly productivity. The increasing complexity of social data, growing volume of scholarly literature, and demand for timely research outputs have made AI tools indispensable for researchers. AI-supported tools assist at every stage of the research process, including literature search, review of related literature, research design, data collection, data analysis, academic writing, citation management, and research ethics. This paper examines the usefulness of AI tools in social sciences research, such as ChatGPT, Google Scholar, Scite, Copilot, SciSpace, Elicit, ResearchRabbit and SPSS, Grammarly, reference management tools, and plagiarism detection system.

Keywords: *ICT, AI Tools, Social Sciences Research, Literature Review, Data Collection, Data Analysis.*

Introduction

Today, Information Technology (IT) or Information Communication Technologies (ICT) and software technologies, especially, Artificial Intelligences (AI) are playing a pivotal role for the development of a nation. Without quality of research, it's not possible. So, modern AI technologies are playing a crucial role in research by enhancing efficiency, accuracy, and collaboration. ICT provides to researchers with easy access to digital libraries, online databases, e-journals, and research networks, enabling faster literature search, data collection and analysis including research reporting.

AI supports research activities by assisting in literature review, data analysis and academic writing. Together, ICT and AI streamline the research process, reduce time and cost. AI research tools are software applications that use Artificial Intelligence techniques—such as Machine Learning (ML), Natural Language Processing (NLP), Deep Learning to support, automate, and enhance various stages of the research process.

AI tools are now widely used by researchers for searching scholarly literature, organizing references, analyzing qualitative and quantitative data, and preparing research outputs. In social sciences—where both qualitative and quantitative approaches dominate—AI provides methodological support without replacing the intellectual role of the researcher. This paper explores the usefulness of very important AI tools in social sciences research and their contribution to improving research quality and productivity.

Meaning and Definitions of AI Research Tools:

Meaning: AI research tools are intelligent digital tools that help researchers do research faster, better, and more accurately.

Definitions: The followings are some of the definitions on AI Tools discussed. They are:

- **AI research tools** are used; to assist different academic disciplines research scholars, especially social sciences-in discovering, analyzing, organizing, and synthesizing scholarly information.
- **AI research tools** refer to computer-based applications that automate or augment research activities such as literature review, data interpretation, hypothesis formulation, and report writing through machine learning and natural language processing.
- **AI research tools** are advanced computational tools designed to support scholarly research by enabling semantic search, automated summarization, citation analysis, and intelligent data processing.
- AI research tools are information retrieval and knowledge-management systems that employ artificial intelligence to improve access to, evaluation of, and interaction with scholarly literature.
- AI research tools are smart computer tools that help researchers-to find, understand, and write research faster and more accurately.

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Characteristics of AI Research Tools:

- Use Machine Learning (ML) and NLP
- Perform semantic search
- Provide automatic summaries and insights
- Assist in citation and reference management
- Support decision-making in research

Importance of AI Tools in Research

- AI tools play a crucial role in modern research by improving efficiency, accuracy, and quality.
- AI tools reduce human errors, save time and cost, and support academic writing, citation management, and plagiarism detection.
- They help researchers in fast literature searching, identifying research gaps, designing methodology, and analyzing large datasets.
- On the whole, Artificial Intelligence need and useful in social science,, to enhance research productivity and innovation.

Artificial Intelligence and Social Sciences Research

Artificial Intelligence refers to computer systems capable of performing tasks that normally require human intelligence, such as learning, reasoning, pattern recognition, and language processing. In social sciences research, AI supports decision-making and enhances analytical capabilities.

AI tools do not replace researchers but act as research assistants, helping scholars handle large volumes of data, identify patterns, and synthesize information. The integration of AI into research practices represents a shift toward data-driven and evidence-based social inquiry.

Types of AI Tools Social Science Research:

There are many types of AI tools are using in academic writings in general, social sciences research in particular. AI Tools are using in research- to gather accurate identifying the research are or topic, finding research gaps, relevant review of related literature, , to prepare research design, hypotheses, framing the objectives, and for research process.

Some of the following AI research tools:

- ChatGPT: As we know well, ChatGPT is very popular AI tool, which is used by the different sections of the people of the society, to full-fill their needs, especially business, scientists, researchers and many others. The ChatGPT-openAI, which is the latest version of GPT 5.2 is used for generating research ideas/thinking, refining research questions, summarizing research articles, and explaining theoretical concepts. It assists researchers in drafting outlines, understanding complex theories, and preparing literature review summaries. With this tool, most of the time will be saved, supports academic writing and also it improves the conceptual clarity.
- Google Scholar: This is a very popular AI tool world-wide. It provides different types academic research information. Google Scholar uses AI-driven algorithms to retrieve scholarly articles, theses, books, and conference papers. It provides citation counts, related articles, and author profiles.
- Elicit: This is another important tools for research. Elicit is an AI-powered research assistant designed for systematic literature reviews. It extracts key information such as research methods, variables, and findings from academic papers.
- ResearchRabbit: ResearchRabbit visualizes citation networks and research trends, enabling researchers to explore relationships among studies and authors. This AI tool helps understand research gaps, identifies popular authors and it supports research.
- Scite.ai: Scite analyzes citations to show whether a study supports, contradicts, or merely mentions previous research.

Research Design and Data Collection

AI tools assist researchers in developing questionnaires, interview schedules, and research instruments. Chatbots and online survey platforms integrated with AI help in collecting large-scale data efficiently.

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AI Tools used in Data Analysis:
AI Assisted NVivo: NVivo is widely used for qualitative data analysis, including interviews; focus groups, and social media content. AI features assist in auto-coding and theme detection. Basically, this tool is used in- Speeds up qualitative analysis, Improves consistency in coding

- Statistical Software For Social Sciences (SPSS-1975): The SPSS with AI Features: supports statistical analysis in quantitative social sciences research. AI-enhanced features help interpret results and suggest appropriate statistical tests. The SPSS is mainly used for data analysis, i.e. complex statistical analysis.
- Grammarly: Grammarly improves grammar, clarity, academic tone, and coherence in research writing. AI-based plagiarism alerts help maintain originality.
- Reference Management Tools: Tools such as Zotero, EndNote, and mendelooly assist in organizing references and formatting citations in APA, MLA, and other styles. This AI Tools saves time in reference management and prevents plagiarism.

The Prospects:

- **Enhanced Research Efficiency**: This AI tool- automates time-consuming tasks, such as- literature search, data cleaning, and reference management and Researchers can focus on critical thinking and innovation.
- **Improved Literature Discovery**: These AI tools are based semantic search and recommendation systems, Automatic summarization of large volumes of research.
- **Advanced Data Analysis**
  - Handles big and complex datasets
  - Supports predictive analytics, text mining, and sentiment analysis
  - Benefit: Deeper insights and improved accuracy in findings.
- **Support for Interdisciplinary Research**
  - Integrates data from multiple disciplines
  - Encourages collaborative and cross-domain research
  - Assistance in Academic Writing
  - Improves language quality and clarity
  - Helps structure research papers and reports
  - Benefit: Higher-quality scholarly communication.
- **Increased Research Accessibility**
  - Assists researchers with limited resources
  - Enables multilingual translation and inclusive research
  - Benefit: Democratization of knowledge creation.

The Problems
The following problems are occurred in Social science Research, while using AI tools. They were discussed below in brief:

- Bias and Discrimination: AI tools can inherit biases from training data, leading to skewed research outcomes. It's important to validate AI-generated content against credible sources to avoid perpetuating stereotypes.
- Plagiarism Concerns: AI-generated content can resemble existing work, increasing plagiarism risks. Researchers ensure originality and maintain research integrity
- Data Misinformation: AI tools may generate inaccurate data and information. Always cross-check AI output with reliable sources to avoid spreading misinformation in your research.

The Challenges

- Accuracy & Integrity: AI can fabricate information or citations, requiring careful human verification.
- Ethics: Concerns exist regarding plagiarism and the appropriate level of AI involvement in core academic tasks.
- Accessibility: Disparities in resources (internet, electricity) can limit AI's benefits, especially in the Global South.

The Future of AI in Research

- Artificial Intelligence (AI) is rapidly transforming the global research eco-system. In the coming years,

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- AI will not only support research activities AI is becoming a fundamental tool, expected to design experiments, conduct peer reviews, and improve reproducibility, ushering in an era of faster scientific breakthrough..
- The future of AI involves the expansion of the technology`s role in day-to-day life, from performing data analysis and research to assist with human care.

Conclusion

AI tools have become indispensable in social sciences research by enhancing efficiency, accuracy, and scholarly communication. From literature search and data analysis to writing and research ethics, AI supports researchers at every stage of the research process. However, AI should be used as a supportive tool rather than a substitute for human intellect. Responsible and ethical use of AI ensures that social sciences research remains credible, inclusive, and impactful in the digital age.

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