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## Literature Review as Research Methodology: Aid of Ai (Artificial Intelligence)

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### **Abstract:**

Artificial Intelligence inaugurates to transfigure traditional research practices in many areas. The fusion of AI tools in the research process can strengthen adeptness, accuracy, and depth in reviewing existing literature. This paper inspects the involved landscape of the operating literature review, indicating the benefits, challenges, and righteous considerations confederated with using AI in this context. By delving into case studies and examining trends, this review aims to offer researchers and academicians a comprehensive understanding of how AI can be employed as a valuable tool in literature review procedures. This exploration seeks to illuminate the harmony between traditional research methodologies



and the innovative possibilities that AI offers. By illuminating the evolving role of artificial intelligence in research, this paper will provide a roadmap for researchers and scholars seeking to harness the benefits of AI as an essential element in their literature review methodology.

**Keywords: Artificial Intelligence, literature review, Research methodology**

## **Introduction:**

Traditional methods of literature review can be receptive to errors. Technology may overpower human objectivity or sift through immense scientific research into day-to-day life. Here, scrutinize what a literature review is, why it's so crucial, and how you can grab artificial intelligence tools to make the literature review process more productive, Considering that the motive of using AI in this context is in the rise stage of development, we put forward a comprehensive research plan for AI-based literature reviews in our field.so With this agenda, we would like to consolidate to construct science research and an extensive advantageous discourse on shaping the future of AILR in research. So firstly

- **What is a Literature Review?**

'The literature' is the body of academic research that has been published and disseminated through publications such as books, academic journals, practitioner journals, websites, and other sources. It's a shorthand way of referring to the sum of published knowledge about a particular subject. However, as you'll discover in more detail in Chapter 4, the idea of there being a coherent body of literature around a particular subject such, as social works is becoming more problematic as more and more publications appear in a variety of formats and contexts.

- Literature Reviews in Social Work Robin Kiteley and Christine Stogdon



- **How does the involvement of AI work to overpower literature review**

So, with the help of machine learning algorithms, AI can now interpret and originate texts that nearly mimic the style and frame of human-written literature and poetry, etc. Researchers, scholars, and even others can efficiently methodize findings and directly generate automatic or machine-generated citations. It solves the difficulties of manually formatting references. Let's delve into it with an example of 'Generative AI,' which can assist in summarizing or characterizing a specific paper. Additionally, it can analyse multiple papers, articles, and texts to address specific research questions.

- **AI-supported literature review process**

A literature review is an essential and exhaustive determination of existing literature in a distinct area of research. It plays a crucial role in research methodology, assisting researchers in identifying gaps in existing knowledge. Here are some modes and ways in which AI can be leveraged in the literature review process:

- 1) Mechanized search and retrieval:**

AI algorithms can help automate the process of inquiring for applicable literature by expertly scanning databases, journals, and repositories. Natural Language Processing (NLP) algorithms can resolve search queries, entitling more precise and targeted results.

- 2) Content synopsis**

AI-operated text and tools can assist researchers in extracting key clues and data from lengthy articles, journals, and other research papers. As mentioned above, the example of 'Generative AI' enables them to grasp the crux of findings and contributions, thereby helping in creating robust content.

- 3) Topic tailoring**

The utilization of AI techniques, such as Latent Dirichlet Allocation (LDA) or other topic modelling algorithms, can aid in identifying predominant themes and topics within a body of literature.



#### 4) The Anatomy of Citation

AI tools can figure out citation patterns to establish seminal works, distinguished authors, and the advancement of insights over time. In today's time, we see multiple websites, applications, etc. Which can provide accurate citation and the quest will remain in doubt about assurance.

'Citation Machine: Freely helps to cite or generate research papers and bibliographies. It consists of APA, MLA, CHICAGO, and TURBIAN, along with a plagiarism check (paid).

#### 5) Quality Estimation

AI can aid in assessing the quality and soundness of research articles, helping researchers hierarchize and select the most significant and credible sources. If we see, with an example of Raxer Oi: provides a reliable research assistant, saving time spent on probing relevant resources and allowing individuals to focus more on reading. It studies the plethora of research papers, survey papers, wikis, videos, and lectures related to your research topic or research question that you were looking for.

#### 6) Identifying research gaps

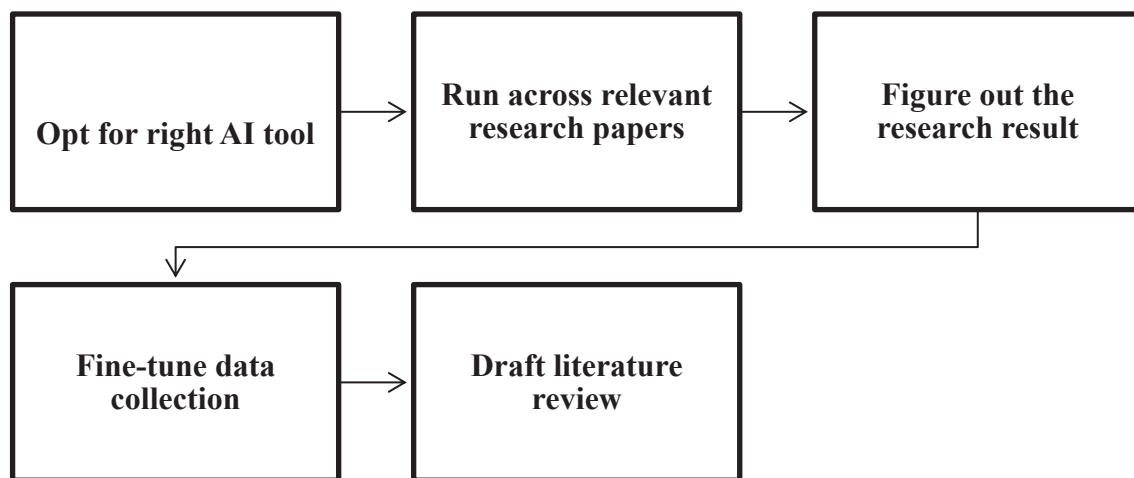
Natural Language Processing (NLP) algorithms can aid in identifying gaps in existing research questions or literature by considering the frame and structure of publications. This helps researchers understand areas that require further examination.

#### 7) Language adaptation/ interpretation

AI-generated language translation tools can simplify the assessment of language and literature published in obscure languages, thereby expanding the scope of multilingual translation facilities in literature reviews. Internet-based language translation applications and web resources are considered semi-reliable resources to take help. It enriches in involving the international languages to enhance literature review to a greater extent.



Additionally, ethical contemplation, such as prejudices in algorithms, should be considered to ensure the integrity of the literature review process. So, using AI at a personal or professional level will always demand great attention from researchers because it includes a concentrative literature review process along with AI's advantages and disadvantages (pros/cons). Let's go towards a simple process.

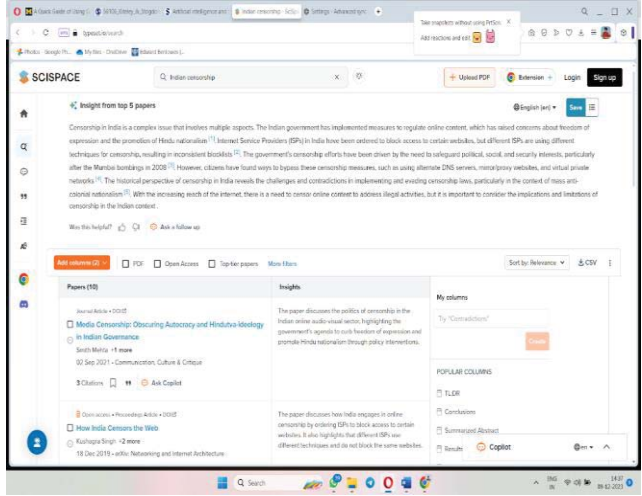
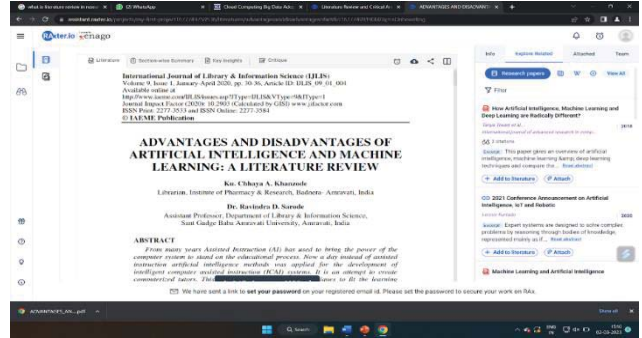
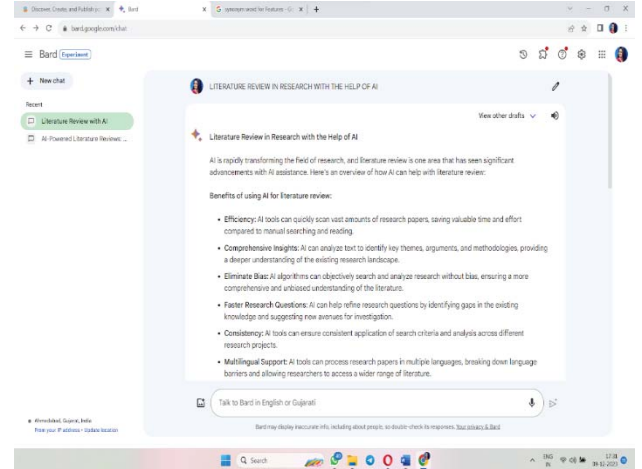


- **Role of AI in systemic literature review**

A systematic literature review is an in-depth description of factual studies directed to provide an answer to the specific research question. It develops validation-based synthesis by indicating a thorough research strategy that recognizes, screens, and analyses all the relevant publications. Previously, systematic reviews were mainly done in manual mode. Researchers used to fetch through the vast number of research articles, choose the ones that were admissible based on destined criteria, extort data, and synthesize the outcome(result). This burdensome method needs a lot of time, and resources are also subject to prejudices sometimes.

Let's have a complete idea of how AI automates operates the systematic Literature Review task. Let's move further and discuss a few examples from internet-based AI tools and their ability and integrity, which still can't be as reliable as the human mind can but we can't avoid ignore the the capacity of AI.



AI-based tools	Key aspects	Potential of AI
<p><b>Scipace</b></p>	<ul style="list-style-type: none"> <li>AI research assistant, SciSpace Copilot, elucidates the text and mathematical content in the paper and responds to any follow-up questions you may have.</li> <li>75+ different languages</li> <li>create custom columns and draw specific insights</li> </ul>	
<p><b>Raxter.io</b></p>	<ul style="list-style-type: none"> <li>Reduce time rush on the wondering for relevant resources</li> <li>Probe more on a plethora of research papers, surveying papers, wikis, online lectures</li> </ul>	
<p><b>Google Bard</b></p>	<ul style="list-style-type: none"> <li>It was Disciplined on a huge dataset of text &amp; code to generate text, e-text, translation languages, and write different forms of creative writing.</li> <li>will answer all your questions in a descriptive informative way.</li> </ul>	



<p><b>Google Scholar</b></p>	<ul style="list-style-type: none"> <li>• Better information on academic research</li> <li>• latest research papers, scholarly literature, articles, conference papers, and theses</li> <li>• It also allows scholars to find relevant publications and citations easily</li> </ul>	
<p><b>Mendeley</b></p>	<ul style="list-style-type: none"> <li>• Organize, share, and cite your research papers properly in one place helps you organize your PDFs, create better bibliographies, and annotate documents easily.</li> <li>• It enables researchers to collaborate on projects and discover relevant articles based on their interests</li> </ul>	
<p><b>Grammarly</b></p>	<ul style="list-style-type: none"> <li>• It offers equipment to highlight and fix misspelled words, imperfect grammar, and punctuation mistakes.</li> </ul>	



The most crucial part of the whole research process is the literature review. It helps to assess prior research, findings of knowledge, research gaps, and the setting up of a basis for more distant investigations. It may take a while. So, this process creates trust issues and may leave researchers feeling lost in a sea of data. Here, we have compared two citations from different sources. How the buildout of AI tools has made things better is undoubtful. The first citation box reveals AI-generated citations and others through word-based

Let's crack the difference.

Citation machine (AI-powered citation tool)	Word citations
<i>Artificial Intelligence and the Conduct of Literature Reviews,</i> <i>journals.sagepub.com/doi/full/10.1177/02683962211048201. Accessed 21 Dec. 2023.</i>	<i>Kundariya, Harikrishna. "Best AI Tools for Academic Research." Enago Academy, 28 Sept. 2023,</i> <i>www.enago.com/academy/guestposts/harikrishna12/best-ai-tools-to-empower-your-academic-research/.</i>

As long as AI-powered tools can powerfully rationalize the literature review process, there are a few moves you should keep in mind while using and utilizing them:

- **Quality control**
- **Ethical cognition**
- **Stay modified/updated**

AI is potent but not infallible. Make sure that further analysis is done twice and determine that the elected research articles are relevant to the research. Be sensible of ethical concerns, such as plagiarism and AI automatic writing. Somehow the use of AI is frowned upon as an experiment. So, ensure examination of originality and integrity of work, which is pivotal for maintaining academic sincerity.





- **Let's know How AI-based Tools Can soothe the Literature Review Process:**

- ✓ Web-based statistics, information, and data from published books, conferences, preprints, survey reports, lectures, research papers, etc will be obtainable on one platform.
- ✓ Well-organized details, information, and data storage, along with efficient data management, will assist researchers in sorting research data and can be modified at one's convenience. Captaining e-journal websites can exterminate or determine data that can be saved for further reading.
- ✓ Floundering of preserved documents can allow prioritizing articles for reading. While on the other hand, it discarding irrelevant papers and resources.
- ✓ Supplementary costs, journal subscriptions, log-ins, and paid assessments can be avoided.

- **Artificial Intelligence in today's Research/aptitude?**

In this last part of our paper, our purpose is to trigger the study of multiple AI techniques that can be applied in various relevant areas in the present moment's interconnected world. In pursuit of this goal, we explored various AI tools and approaches for crafting a well-established and thoroughly revised research paper. This includes examining their relevance to prominent literature reviews, research methodologies, and deep learning techniques. Hence, the scope of our study in terms of research and applications is also explored through this paper. Now, delving into the pros and cons of this emerging research area, let's analyse the impact of growing up with technology, adopting new educational methods, and envisioning the world in the years to come. The most significant question for humans is, "**Can machines replace humans?**"= YES/NO – So, as we have discussed and examined the advantages and disadvantages of using AI, challenges for us, and future aspects to overcome. This paper seeks judgment about the authenticity of Machine fruits, the integrity of different tools, the results, the comparisons, and the intellectual property of machines.



- **Critical areas for future research and development include:**

- The evolution of AI algorithms aims to be fair, unbiased, accurate, and transparent.
- The integration of human values, ethics, and morals into AI development and implementations.
- The establishment of trust and understanding between humans and AI systems.
- Imagine how AI will crack the walls of human Supreme intelligence.

**Conclusion:** Here, we are done with an open-interpretation question. It is believed that the gradual adoption of AI for conducting literature reviews can significantly reduce time and energy expenditure. So, by following this procedure, you can save time, expect quality work, and take your research to a certain level of constructing AI-based works in off-beat fields like literature. It is to be noted that Remaining in the self-doubts that AI can be an excellent and powerful ally in your research journey, bestowing you with valuable insights and helping to make the literature process more efficient still, it also comes with cons, struggles, and again the biggest challenge of being dependent on internet, assessments, electric connections, money, subscriptions and allowing technology to challenge and overthrown human Intelligence.



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## References

"A Quick Guide to Using GAI for Scientific Research." MIDAS, 15 Dec. 2023, [midas.umich.edu/generative-ai-user-guide/](http://midas.umich.edu/generative-ai-user-guide/).

G, Sumalatha. "Role of AI Tools in Systematic Literature Review." SciSpace Resources, SciSpace Resources, 2 Nov. 2023, [typeset.io/resources/ai-tools-for-systematic-literature-review/](https://typeset.io/resources/ai-tools-for-systematic-literature-review/).

Kiteley, Robin, and Christine Stogdon. Literature Reviews in Social Work. SAGE, 2014.

Kundariya, Harikrishna. "Best AI Tools for Academic Research." Enago Academy, 28 Sept. 2023, [www.enago.com/academy/guestposts/harikrishna12/best-ai-tools-to-empower-your-academic-research/](http://www.enago.com/academy/guestposts/harikrishna12/best-ai-tools-to-empower-your-academic-research/)

Wagner, G., Lukyanenko, R., & Paré, G. (2022). Artificial intelligence and the conduct of literature reviews. *Journal of Information Technology*, 37(2), 209-226. <https://doi.org/10.1177/02683962211048201>