Journal of Information Systems and Informatics
Vol. 7, No. 1, March 2025 e-ISSN: 2656-4882 p-ISSN: 2656-5935
DOI: 10.51519/journalisi.v7i1.1035 Published By DRPM-UBD

Evaluating the Efficacy of AI Tools in Systematic Literature Reviews: A Comprehensive Analysis

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Abstract

Artificial Intelligence (AI) tools can revolutionize literature review practices by transforming the research landscape towards more efficient and reliable review processes. While conducting literature can be challenging and time-consuming, there is a plethora of AI powered tools which uncover potential solutions to the challenge. AI tools may reduce the time spent on repetitive tasks, allowing scholars to focus more on critical analysis and interpretation. Due to the rising abundance of AI tools, it is difficult to decide which AI tools are best for individual research problems or projects. While concerns exist around the ethical and quality consequences of using AI. The study aims to explore the usage of AI tools on the systematics literature review process, specifically focusing on their effectiveness in various stages and ethical concerns. IEEE and MDPI Journal papers from 2020 to 2024 were reviewed using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. RobotReviewer, Covidence and EPPI-Reviewer are AI tools commonly used. These AI tools are designed to support different aspects of the systematic literature review process by offering capabilities such as problem formulation, literature search, inclusion screening and quality assessment. AI tools demonstrate improved effectiveness of literature searches, screening processes and data extraction. Language and content presentation, incorrect citation and plagiarism, grammar and spelling errors may be ren when utilizing AI. Concerns related to data quality, biases, and the need for human oversight were identified.

Keywords: Artificial Intelligence, Systematic Literature Review, Software tools, PRISMA

1. INTRODUCTION

The Systematics literature review (SLR) is a rigorous way of gathering and integrating facts from several research, resulting in a whole data that is larger than the sum of its parts [1]. Conducting systematics literature reviews makes a substantial contribution to the conceptual, methodological, and thematic development of multiple disciplines [2]. However, conducting research projects takes time and effort, with most of it dedicated to the creation of a literature review [3]. SRL can emerge as part of conceptual or empirical investigations, or as standalone studies that are curated in a variety of ways [4]. Traditionally, literature reviews were used to summaries previous research and establish a state of

knowledge on a certain issue, as well as to justify and inform future study. However, as the quantity of research and utilization of scientific information in decision-making has increased, scientific methodologies have been created to extract new evidence from the synthesis of primary studies [5]. This process consists of synthesizing, summarizing, integrating, evaluating, commenting, and critiquing publications on a certain topic [5].

Traditional literature reviews focus on broad review topics and lack a defined methodical process for choosing, evaluating, and synthesizing research that are biased in a number of ways [6]. Systematic literature reviews are an approach to evaluate current research on a certain issue [7]. Adhere to a defined process for discovering, selecting, and critically analyzing all relevant studies to reduce biasness while increasing credibility and dependability [8].The method is diverse to traditional literature review as, traditional approach does not have a defined process and are time-consuming, tedious, and vulnerable to errors [17].

Several literature review techniques have been created and promoted as a means of addressing the biases by formulating systematic literature review (SLR) [9]. A SLR is a procedure that identifies literature in a particular field of research based on search and inclusion criteria [10]. Consequently, SLR adheres to guidelines for the inclusion and exclusion of primary findings, avoiding preconceived biases [11]. Using SLR, researchers may critically evaluate and assess the variety of current materials pertaining to knowledge and comprehension in a particular topic [12]. High quality, rigor, transparency, and relevancy are also ensured by using a designed SLR approach [9]. Without gathering or examining any primary data, several studies on SLR literature reviews have been carried out [13]; [14]; [15]; [16]; [17].

There are guidelines developed and advocated for conducting systematic reviews using traditional literature review methods. Examples include the PRISMA guidelines and the PICO framework. PRISMA consists of 27-item checklist, and a four-stage flow diagram designed to assist scholars in improving the reporting, transparency, and accuracy of their systematic reviews [18]. This 27-item technique employs traditional flow strategy with no technologies to remedial the time-consuming processes. Meaning there is no AI tool available to assist researchers in complying with all PRISMA's requirements [19].While checklists like PRISMA improve the transparency and reporting quality of systematic reviews, biases might occur during the review process [20]. Systematic reviews published in journals with low impact factors demonstrated less adherence to PRISMA, implying that higher-impact publications might be enforcing better reporting standards [21]. This means that researchers who use PRISMA may report biases in their results. Some researchers who do not register their systematic review processes have poorer PRISMA adherence, implying a lack of commitment to transparency and scientific rigor [21]. Some studies propose undertaking longitudinal research to see how

reporting completeness varies over time, particularly following the implementation of new rules or editing practices [20].

This study argues that scholars who are using methods such as PRISMA, manually filter hundreds of research papers to choose relevant papers, even in the face of the abundance AI tools. There is difficulty in selecting the best AI tools to support literature review process. Conducting literature review still requires significant human work to uncover meaningful material from massive text files. This takes a significant amount of time due to the need to analyze several literature study [22]. This process is also tedious and prone to mistakes due to unbalanced data [23]. While conducting literature reviews can be challenging and time consuming, there are plethora software tools made available by AI. AI is a computer platform that resembles the human mind and has the capacity to solve complex issues using advanced algorithms that can provide remarkable outcomes [24].

AI has significantly impacted the field of research in many ways [25]. In research AI enables researchers to conduct literature reviews more efficient [26]. By giving priority to pertinent research, this technology provides a way around the tedious and time-consuming manual screening of numerous studies [27]. AI-based technologies can carry out one or more review process phases, such as formulating the problem, searching the literature, screening candidates for inclusion, evaluating quality, extracting data, or analyzing and interpreting findings [28]. AI tools may reduce the time spent on repetitive tasks, allowing researchers to focus more on critical analysis and interpretation.

Utilizing AI tools to streamline the literature review process may also assist emerging scholars such as postgraduate students to not prolong their study period. A case study of postgraduate studies provided a research tool (ResearchBuddie) that combined multiple generative AI technologies to assist with postgraduate research, teaching and learning in Africa [29]. By Identifying suitable AI technologies and research processes for creating the ResearchBuddie artefact, scholars suggested that the ResearchBuddie tool, which includes generative AI technologies such as ChatGPT, Elicit, and Research Rabbit, could aid in research activities and address issues faced by postgraduate students [29]. The ResearchBuddie tool was shown to have the ability to accelerate the writing process, improve proposal quality, and facilitate literature reviews. Due to a lack of expertise, postgraduate students were seen to struggle with generating proposals. Some of the challenges indicated are addressed in Figure 1.

There is an abundance of AI tools and accompanying software's to conduct literature reviews available for scholars a. However, the abundance of the tools makes it difficult to decide which AI tools are best for individual research problems or projects. There is also a lack awareness made available for scholars to learn about these tools. Using the AI tools concerns that exist to conduct SLR. The

ethical and quality consequences of employing AI tools exist. Hence, this paper presents an overview of existing AI tools to conduct SLR. By exploring the usage of AI tools on the systematic literature review process. Given the existing gap this study in-tends to answer this research question: "what are the existing AI tools effective to conduct research and their ethical concern.?" To address this, we developed a research path guided by two objectives: (O1) To explore existing AI tools used to conduct literature review and (O2) to explore how AI tools impact ethical consideration.

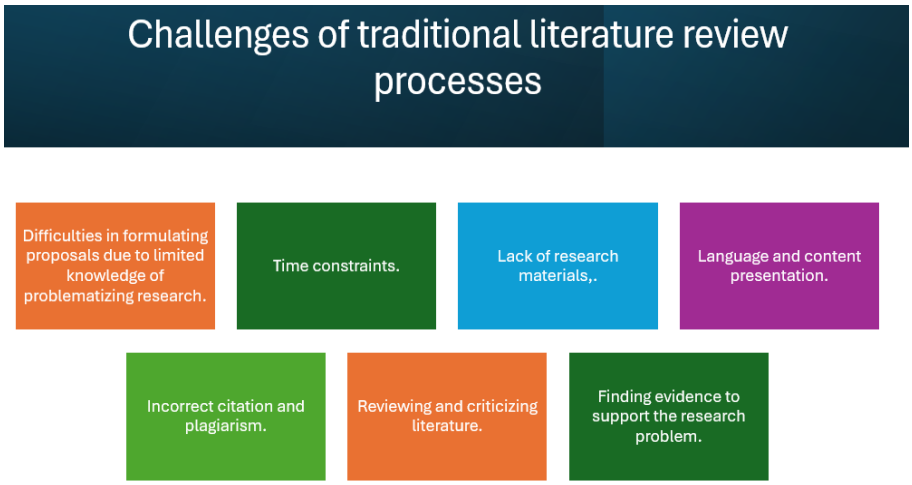

Figure 1: Challenges of traditional literature review adopted from [29]

This paper outlines the methodology followed, including search parameters, study selections and inclusion criteria. It then presents the findings from reviewed studies, subsequent discussion as recommendations and conclusions.

2. METHODS

Conducting an SLR is a fundamental aspect of research that serves multiple purposes. Scholars engage in literature reviews to deepen their understanding of a specific field, establish a solid foundation of existing knowledge, and identify gaps that may lead to new theories or research directions [12]; or perhaps to provide firm foundation to provide knowledge, develop a new theory or summarize new field or find new research directions [15]. Additionally, literature reviews can inform policy and practice by summarizing relevant findings and advancing knowledge within the academic community [16];[30]. Systematic literature reviews are essential not only for advancing academic knowledge but also for bridging the gap between research and practical application. In addition to facilitating ongoing conversations and debates in their disciplines, they allow researchers to place their

work within a larger scholarly perspective [31]. Following rigorous procedures for determining search criteria and selecting articles for inclusion. This study adopted SLR methodology. The study applied the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to assess the credibility and relevance of the review findings as a research strategy. The PRISMA methodology made it possible to use a peer-reviewed, consistent sequence for article selection, search strategies, data extraction, and data analysis processes [18]. The objective of the PRISMA statement is to enhance the clarity and thoroughness of reporting in systematic reviews [18]. PRISMA provides a visual representation of a systematic review's flow diagram, which encompasses the process of searching databases and registers.

The study workflow is based on the PRISMA four-phase diagram, as indicated in Figure 1. Four-phase include (1) Identification of the studies via databases; (2) The screening of titles and abstracts identifies relevant papers, which are subsequently evaluated by full text review (3) determining the eligibility of studies and (4) specifying all study included for analysis.

2.1. Identification of studies

Because of high-quality journals and publications, as well as for the analysis, the databases used to identify articles were MDPI and IEEE databases. The selection criteria included peer reviewed journal articles focused on AI, published in English language. Open-access journals published within 5 years between the year 2020 to 2024, the studies conducted in the education sector. The search terms used are "Artificial Intelligence" OR "AI", "systematic review "OR "literature" OR "research "AND "tools". Open-access journals were chosen as a secondary criterion for the identifying process. The search was performed in August 2024 while seminars, or conference proceedings were excluded. Seminars and proceedings were not included due to their lower quality [17]. To evaluate the quality of the publication, only journals with multiple citations were used. Using the keywords specified, the databases yield a total of 198 of which 72 are from MDPI and 126 are from IEEE.

2.2. Screening titles and abstracts

To avoid duplicate publications during the screening phase, the extracted abstracts and titles were imported into Endnote. The selected reviewed papers were then analyzed, through screening titles that met the identification criteria and those that had AI tools. The primary goal of analyzing literature review articles is to aggregate, review, organize, compare, and critique selected literature [16]. Coding and concept-centric analysis are two other techniques for analyzing the literature review.

While coding identifies new areas of investigation, it is concept-centric and highlights literature review findings based on themes [32]. The findings of this study explored usage of AI tools, specifically focusing on their effectiveness in various stages and their ethical concerns.

2.3. Eligibility

The eligibility criteria were predetermined, and the essential findings from the selected inquiries were coded and retrieved to synthesize and answer the study's objective. (O1) To explore existing AI tools used to conduct SLR and (O2) how AI tools impact ethical consideration. The searches were done in August 2024. Keywords, titles and abstracts were used to retrieve the vast number of publications that were related to the scope of study. Followed by full text documents assessment for eligibility to remedial studies that were not relevant to the scope of study. Criteria that qualify the selected papers were "AI tool", Systematics literature review and "Education context". The selected papers supporting these activities were sorted and illustrated in Figure 2. The PRISMA method evaluates the credibility and application of systematic review results by ensuring transparent and comprehensive reporting. Table 1 lists the eligible journals chosen and included in the analysis of this article.

Table 1: Journals selected for this study

ID	Year	Author(s)	Title
P_ID1	2024	Erduran, S. & Levrini, O.	The impact of artificial intelligence on scientific practices: an emergent area of research for science education
P_ID2	2023	De La Torre-López, J., Ramírez, A. & Romero, J. R	Artificial intelligence to automate the systematic review of scientific literature
P_ID3	2023	Fabiano, N., Gupta, A., Bhambra, N., Luu, B., Wong, S., Maaz, M., Fiedorowicz, J. G., Smith, A. L. & Solmi, M	How to optimize the systematic review process using AI tools
P_ID4	2022	Wagner, G., Lukyanenko, R. & Paré, G.	Artificial intelligence and the conduct of literature reviews
P_ID5	2022	Müller, H., Pachnanda, S., Pahl, F. & Rosenqvist, C.	The application of artificial intelligence on different types of literature reviews - A comparative study
P_ID6	2020	Harrison, H., Griffin, S. J., Kuhn, I. & Usher-Smith, J. A	Software tools to support title and abstract screening

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

ID	Year	Author(s)	Title
			for systematic reviews in healthcare: an evaluation

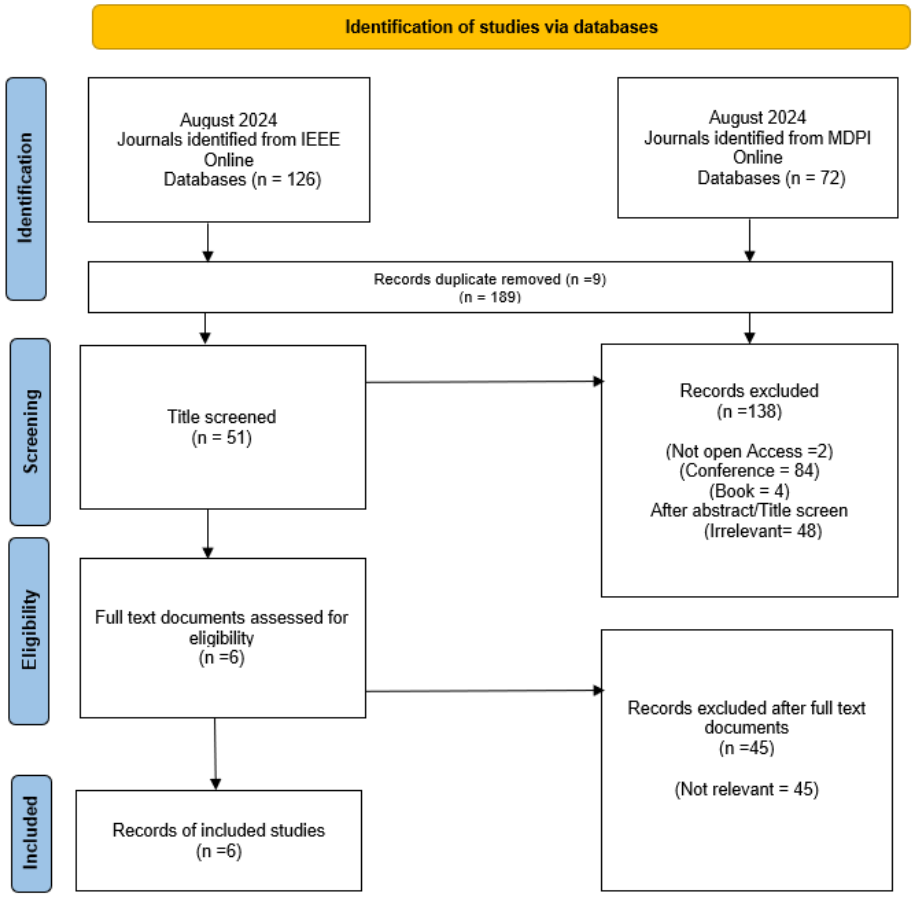

Figure 2: Identification of the selected studies adapted from PRISMA 2020[18]

According to Leider, a systematic literature review contributes to the body of knowledge by employing the literature review rather than establishing theory [13]. However, some scholars argued that literature review studies make a contribution by analyzing a body of knowledge and proposing new hypotheses about a phenomenon or explaining a gap in the literature [32]. While Webner, the most cited literature review study concluded that a literature review must provide a solid foundation for improving knowledge and construct a new theory in order to identify new research methods [15]. This study intends to understand and review AI tools through the the use of systematic literature review in order to advance the research [30]. Unlike Webster and Watson, who suggest organizing the results of a

literature study by concepts or topics. This research organized the results of the chosen study by authors.

3. RESULTS AND DISCUSSION

3.1. AI Tools in Systematic Literature Reviews

P_ID1 studied the ”impact of Artificial Intelligence on Scientific Practices: An Emergent Area of Research for Science Education" [33]. Scholars investigate how AI affects scientific methods, notably those in education. They analyze how AI tools are altering scientific procedures, producing new concerns for science education, and emphasize the importance of incorporating AI-informed practices into curriculum to keep students up to date on scientific outcomes. The research examines the scientific literature on AI's function in physical and natural sciences, using the National Research Council's (NRC) 2012 framework of scientific processes. This method examines how artificial intelligence impacts current scientific research and the consequences for secondary science teaching. The AI tools used in their study were merely based on a specific field of study such as AI tools for protein detection and AlphaFold AI tools. The employment of AI in particular scientific field has been tremendously beneficial, it has resulted in discoveries that would not have been achievable using traditional approaches. Scholars discovered that AI speeds discovery, improves forecasting accuracy, and widens the ability to evaluate large datasets. However, concerns were raised about potential biases in datasets used for machine learning, which might impair the accuracy of AI predictions.

P_ID2 in their study of AI to automate the systematic review of scientific literature provided a summary of AI tools developed over the previous 15 years to assist scholars undertaking systematic reviews of scientific publications. The authors conducted a thorough literature search, identifying 34 primary studies from over 9,000 references found through both automatic and manual searches. They examined various studies in order to better comprehend the aim of employing AI to solve certain tasks, focusing on the suggested techniques' inputs, outputs, and algorithmic decisions. AI tools utilized in their study to automate various stages of the systematic literature review (SLR) process included. The planning step for clustering algorithms such as Lingo3G, which find research topics fast and match papers to ideas. Lingo3G, is a document clustering technique, groups related publications based on title and abstract [34].

Text mining, machine learning, and natural language processing techniques are used for performing tasks such as paper selection, data extraction, and meta-analysis. Then reporting phase performed techniques for automating creating of report parts and showing results.

Researchers indicate that AI-based screening approaches can cut screening time by up to 60% and save over 80 hours [35];[36]. However, just two tools for document selection, Abstrackr and EPPI-Reviewer, are widely used in the medical field. The authors revealed that some SLR problems are significantly more extensively researched than others utilizing AI tools, and that some machine learning techniques introduced in the early phases are still in use. They also uncovered current research addressing new machine learning methodologies in which humans can be more involved.

P_ID3, explored how AI tools might optimize the systematic review process, increasing efficiency and quality when synthesizing research findings [37]. The authors did a thorough analysis of the many AI tools available for systematic reviews, classifying them based on their functionality at different phases of the review process. The paper discusses numerous AI tools, like OpenAI ChatGPT, which may help generate research questions and summarize data. While Elicit.org was discussed as a tool for developing well-structured study questions, Distiller SR has been verified as a method for literature screening [38].

Xtrct uses semantic search to filter eligible criteria and discover the most relevant papers. These AI tools are designed to automate time-consuming processes in systematic reviews, such as developing research questions, screening literature, and summarizing findings, therefore speeding the whole process. The tools were shown to reduce the time required for systematic reviews from an average of 67 weeks to as little as 2 weeks, while also enhancing the quality of research synthesis. However, the usefulness of these tools varies, and AI does not provide equal help for all manual labor. The authors emphasize that, while AI tools can considerably shorten the time necessary for systematic reviews, questions concerning quality control and ethical consequences remain. The authors underline that AI should complement, not replace, human knowledge.

"How to optimize the systematic review process using AI tools" P_ID4 studied how artificial intelligence (AI) might improve the efficiency and efficacy of literature reviews in research, particularly for information systems [28]. The authors conducted a comprehensive evaluation of AI tools used at various phases of the literature review process, examining their functionality and possible advantages. AI tools such as TheoryOn for ontology-based construct searches [39], Litbaskets for search strategy design [40], LitSonar for search query execution across databases [41], ASReview for literature screening prioritization [23], RobotReviewer for experimental research quality assessment [42], Nvivo and ATLAS.ti that offer AI-powered features for qualitative data analysis and many others were discussed. These AI tools were also discovered to be developed to automate repetitive operations in literature reviews, such as searching, screening, and data extraction, allowing researchers to concentrate on more sophisticated analytical tasks. While AI tools can dramatically cut the time necessary for literature

reviews, concerns regarding algorithmic biases and the need for human oversight persist. However, not all SLR writing phases are suitable for automation, and the efficiency of these tools varies. To provide openness in AI decision-making processes, ethical aspects must be considered.

P_ID5, conducted a study to "evaluate the application of AI in automating systematic and semi-systematic literature reviews to improve research efficiency and quality." Comparison research was done to evaluate several AI tools used in literature reviews, with an emphasis on their features and efficacy across review kinds. The research explored RobotReviewer, which automates quality evaluation for literature [42]. Dextr is a semi-automated tool for literature screening [43]. Data extraction and text categorization are carried out using technologies such as machine learning (ML) and natural language processing (NLP) [44]. The technologies mentioned are intended to automate repetitive processes in literature reviews, such as screening articles and grading quality, allowing researchers to concentrate on more difficult analytical tasks. While AI tools can improve productivity, there are issues about biases in algorithmic decision-making, and the tools vary in efficacy depending on the type of review. The study emphasizes that full automation is not possible for all activities owing to the requirement for contextual awareness.

A study on Software tools to support title and abstract screening for systematic reviews was conducted by P_ID6 [26]. The authors examine software solutions that al-low titles and abstract screening for systematic reviews in healthcare, with a focus on usability and efficacy. In their study, the authors used a multi-stage strategy, discovering software tools through online searches and literature studies, completing a feature analysis based on user demands, and collecting user feedback via questionnaires. The Six identified tools that scored higher than 75% in their feature analysis were discussed with Abstrackr being highlighted as a tool for screening abstracts. Colandr assist with title and abstract screening. Covidence is a complete tool for systematic reviews. Yet, DRAGON AI tool encourages collaborative screening efforts. EPPI-Reviewer provides significant functionality for systematic reviews. Lastly Rayyan was noted as a quick title and abstract screening tool. The authors propose Covidence and Rayyan for systematic reviewers as appropriate and user-friendly tools. The advice was based on their popularity among survey respondents.

The review found that Covidence and Rayyan had the greatest usability metrics, with all polled researchers indicating a possibility of future usage. Variability in characteristics was seen between tools, which influenced their usefulness for various study contexts. Covidence and Rayyan were especially praised for their usefulness. The study recognizes possible biases in tool selection and highlights the value of user input in assessing software effectiveness. An overview of AI tools to utilize when conducting literature on all the stages through the reviewed selected

papers is listed in Table 2. The table lists the AI tools that can be used to save time when conducting Systematic literature review. The AI tools are themed according to papers reviewed for the study.

Table 2. AI Tools

ID	AI Tools	Purpose	Title and Abstract	Selection	Screening	RQ	Paper Search	Summary
P_ID2	Lingo3G	Finds research topics fast and match papers to ideas	x					
P_ID2	Abstrackr	Find relevant papers	x	x				
P_ID3	OpenAI ChatGPT	Helps generate research questions and summarize data				x		x
P_ID3	Elicit.org	Develops well-structured study questions				x		x
P_ID3	Distiller SR	Verified as a method for literature screening			x			
P_ID3	Xtrct	Filter eligible criteria and discover the most relevant papers		x				
P_ID3	TheoryOn	Ontology-based construct searches		x			x	
P_ID4	Litbaskets	Perform search strategy design					x	
P_ID4	LitSonar	Search query execution across databases			x			
P_ID4	ASReview	Literature screening prioritization			x			

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

ID	AI Tools	Purpose	Title and Abstract	Selection	Screening	RQ	Paper Search	Summary
P_ID4 & P_ID5	RobotReviewer	Experimental research quality assessment			x		x	
P_ID5	Dextr	Semi-automated tool for literature screening			x			
P_ID6	Colandr	assists with title and abstract screening	x					
P_ID6	Covidence	Complete tool for systematic reviews	x	x	x	x	x	x
P_ID6	DRAGON	Conduct collaborative screening efforts			x			
P_ID2 & P_ID6	EPPI-Reviewer	Provides significant functionality for systematic reviews		x	x			
P_ID6	Rayyan	Can quick screen title and abstract	x					

RobotReviewer, Covidence and EPPI-Reviewer are the AI tools commonly used and popular in conducting literature reviews. A recurring issue in all the studies presented is the ethical and methodological problems raised by incorporating AI into systematic reviews and scientific research. Algorithmic bias, data openness, and the risk of over-reliance on AI tools are all valid issues. These problems underscore the importance of explicit norms and ethical frameworks for the use of AI in research, ensuring that the technology is utilized ethically and that its limits are recognized. Ethical concerns for using AI to conduct systematic reviews and scientific research are listed in Table 3.

AI tools have shown significant productivity improvements, and reduce research rigor, nonetheless quality must be carefully addressed. Human oversight is still required, not just to evaluate AI-generated results, but also to guarantee that the study stays ethical and culturally acceptable. While AI has transformational potential, the ethical issues of prejudice, transparency, and algorithmic decision-

making must be addressed. The future of AI in research will be dependent on the creation of strong norms and frameworks that assure the appropriate and ethical use of these technologies. The necessity for strict regulations controlling the use of AI is obvious, particularly to reduce the hazards associated with biased datasets and algorithmic decision-making.

Table 3. AI Tools ethical concerns to conduct literature

Ethical concerns for conducting literature reviews	
1)	Potential biases in datasets used for machine learning and algorithmic biases
2)	Some AI tools machine learning techniques introduced in the early phases are still less research to conduct literature
3)	Not providing equal help for all manual labor
4)	Quality control
5)	Full automation is not possible for all activities owing to the requirement for contextual awareness.

3.2. Discussion

Traditional methods of conducting systematics literature review have come to a threshold as the emergence of AI tools makes the process more efficient and effective. While conducting literature reviews through traditional methods is time-consuming, tedious, and vulnerable to errors [17]. Meanwhile the use of AI tools to conduct literature reviews and scientific research offers a considerable increase in research productivity and creativity. AI tool for SLR has brought about radical transformation, having an enormous impact on the discipline of document and information analysis, which is based on human ability and critical assessment. All this transformation warrants rigorous comparative assessment of and potential drawbacks of AI utilization [45]. The traditional literature review process, where there is manual research and mental processing, is inherently time-consuming and demands much human capital and lengthy turnaround times [46]. AI tools, on the other hand, utilises machine learning and natural language processing, can mechanize multiple phases of the review process, thereby accelerating the discovery, extraction, and integration of key information [47]. AI-based tools are capable of speeding up the scanning of large research databases, thereby facilitating the recognition of insights that may be challenging to obtain using conventional methods, hence enhancing efficiency [48]. Table 4 shows some of the comparative analysis of AI tools versus traditional review methods in terms of time efficiency and user satisfaction.

Literature has shown a numerous advantage of using AI tools as compare to traditional review. Scholars argue that the design science artefacts method, along with AI tools, might reduce the time necessary to perform a literature review compared to traditional methods [55]. These tools have the ability to automate routine processes like literature scanning and data extraction, allowing researchers

to focus on more sophisticated analytical tasks [33];[37];[56];[57]. However, given the abundance of AI-powered tools for conducting literature research, selecting appropriate AI tools may be difficult.

Table 4. Analysis of AI tool versus traditional review
Ethical concerns for conducting literature reviews

Role Descriptions	Traditional Method	AI Tools Method
Content Presentation	Language and content presentation while forming the research demonstrates difficulties, particularly on utilizing the right academic language, citing references wrongly, and plagiarism [49].	Can create related outputs by combining text, graphics, audio, and video files among other data kinds [50].
Research process	Require substantial assistance with the research process, including conceptualizing research problem and identifying research challenges [51].	Can do data collecting and experimentation [52].
Translation	Translating social concerns into scientific problems presents obstacles [53].	Has tools for translating languages [54].
Efficiency	The research procedure is very demanding in time and effort [55].	Can cut screening time by up to 60% and save over 80 hours [35, 36].

The study points out that AI tools should not be considered as a substitute for human and knowledge. Instead, AI tools should be used as complimentary instruments to improve the efficiency and accuracy of research methods. Some of the theoretical strategies related to technology complimentary as an adoption instruments are Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT) or a Task–Technology Fit (TTF). The usability and perceived utility of AI tools in the literature review process correspond with the fundamental principles of the TAM and the UTAUT. TAM, UTAUT, and TTF are frameworks developed by researchers to investigate how users embrace new technologies. UTAUT stands out as an effective framework for explaining technology adoption, with a better ability to explain differences in behavioral intents to utilise technology [58]. While TTF and performance expectation strongly influence how something is utilised [58]. The TTF hypothesis is based on user, task, and technological performance [59].

A SLR can be carried out in accordance with a variety of research literature review guidelines, frameworks and recommendations [9]. For this reason, a well-conducted SLR is required to conduct studies with either AI tools or traditional methods [12]. A gap identified in the literature regarding steps required to conduct literature review using AI tools needs to be clarified [55]. However, in this study the aim was not to conduct steps required to carry out the literature, but to explore

the usage of AI tools for the literature review process, specifically focusing on AI effectiveness in various stages and ethical concerns. Future studies may uncover steps to conduct literature reviews using AI tools.

The stages of conducting literature reviews may be gained from various academic scholars [16];[17];[40];[55]. However, those studies do not specifically address AI tools for conducting literature. AI tools can automate all steps of a SLR [22] and automating the stages of a literature review is not a new concept; the first publication to advocate the use of machine learning was published in 2005 [60]. From the processes of planning, searching, screening, choosing, constructing research questions, discussing interpretations, results, and summarizing articles. AI tools may automate the process of conducting literature reviews, saving time as compared to traditional techniques.

4. CONCLUSION

The application of AI tools in systematic literature reviews and scientific research marks a paradigm change in data processing and analysis. Such tools not only minimize the time necessary for difficult evaluations but also improve forecasting and data extraction accuracy in a variety of disciplines, including other education and other disciplines. However, as several studies have shown, AI's involvement in research should be viewed as complimentary to human knowledge, with complete automation being neither practicable nor ethical in many circumstances. Algorithmic bias, quality control, and the need for openness remain major issues. As AI technology advances, its effective integration into scientific research will be dependent on the establishment of rules that assure ethical usage while maximizing its potential to improve knowledge generation. The incorporation of AI into academia is surpassing mere automation of literature reviews altering research methodologies across several fields. The ability of AI to process and analyse vast datasets at rates and scales that exceed human capabilities is enabling researchers to explore more intricate issues and evaluate innovative possibilities. Future studies may uncover steps and rules to conduct systematic literature reviews using AI tools. Ethical guidelines may be developed in future to allow the refinement of AI and its integration in the research sphere to ensure its effective usage. Further developments on AI tools for literature reviews, can integrate machine learning more effectively to handle complex data analysis tasks.

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