An Investigation of Artificial Intelligence Tools in Editorial Tasks among Arab Researchers Publishing in English

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Abstract

The proliferation of artificial intelligence (AI) has impacted scholarly publishing. This study explores the use of AI tools by Arab researchers who publish in English. A survey was conducted to gather information on AI tool adoption in research conception, writing, editing, and publishing. It collected responses from 84 participants, who provided insights into their usage patterns, challenges encountered, and ethical considerations when using AI. The findings reveal diverse adoption rates of AI tools, with high usage for language correctness and content enhancement such as grammar and spelling checking. The ethical implications of AI tool usage, including the need to ensure data quality, prevent plagiarism, and maintain ethical standards, were emphasized by respondents. Tools such as Grammarly, Endnote, and QuillBot were recognized for their utility in addressing common challenges. However, certain research-related tasks, notably research design, exhibited lower AI tool integration. The study underscores the gap between awareness and adoption of AI tools, indicating potential barriers to their utilization. Challenges such as cost, integration issues, and concerns about the accuracy and appropriateness of AI-generated content were identified. These findings offer insights for researchers, institutions, and publishers to enhance editorial processes, promote ethical AI tool usage, and bridge the gap between awareness and adoption.

Keywords: Artificial Intelligence, Editorial Tasks, AI Tools, Research Conception, Editing, Academic Publishing, Ethical Considerations.

Introduction

Advancements in artificial intelligence (AI) across various sectors have provoked transformative changes, and scholarly publishing is no exception. Throughout history, the practice of writing and publishing has been predominantly dependent on manual procedures in the process of the creation of manuscripts, their evaluation, and their subsequent distribution. The advent of the digital age, along with advancements in AI, has introduced technologies that have fundamentally transformed the writing, revision, and dissemination of scholarly work, transforming editorial tasks through technology (Xu et al., 2021). AI tools now not only optimize the writing process through grammar checks and style improvements but also boost the publishing ecosystem by enhancing peer reviewing and literature accessibility. The integration of AI into this field entails the convergence of technical advancement and the continuing pursuit of knowledge dissemination (Gunning & Aha, 2019).

From detecting a grammatical or spelling error to selecting a suitable journal, AI tools play multidimensional roles in scholarly publication (Razack, Mathew, Saad, & Alqahtani, 2021). AI algorithms can automate the process of drafting, synthesizing, editing, formatting, and publishing. Moreover, AI can assist in performing other critical processes of research formulation, such as hypothesis generation, idea extraction, and summarization. AI technologies have been identified as disruptive advancements that are transforming academia and scholarly publication (Haque, Dharmadasa, Sworna, Rajapakse, & Ahmad, 2022). Semantic Scholar, for example, is an AI-powered search that mines more than 200 million academic papers sourced from publisher partnerships, data providers, and web crawls, enabling users to reproduce the search. Scholarch uses deep learning technology to read articles, reports, and book chapters, breaking them down into small sections and highlighting key information such as important findings, limitations, and comparisons with earlier studies (Koltovskaia, 2020). Grammarly is an AI-powered writing assistant that detects errors in grammar, spelling, punctuation, and style with a great level of accuracy and simplicity (Syafi'i, 2020). It also has a plagiarism checker and can help with citation formatting. Wordtune uses AI to assist in rewriting and rephrasing sentences, making the generated content clearer and more concise.

A recent review released by the UK Research and Innovation (UKRI) highlights the potential role that research can play in ensuring a prosperous future with AI and emphasizes the importance of investing in AI technologies and infrastructure to achieve this goal, suggesting that there is potential for "AI to allow us to do research differently, radically accelerating the discovery process and enabling breakthroughs" (UKRI, 2021). Advancements in AI-based writing tools have revolutionized scholarship by providing researchers with efficient and accurate assistance in generating and auto-editing written content. This not only saves time but also enhances the quality of their work, allowing them to focus on more critical aspects of their research (Khan, Osmonaliev, & Sarwar, 2023). AI is, in fact, leveraging researchers' efficiency and productivity (Beer, 2019). The advent of "Industry 4.0" (Kagermann, Wahlster, & Helbig, 2013) signifies a transformative era in which AI is playing a significant role; academic institutions should consider the ethical considerations and responsible implementation of AI in the realms of research practices, cultural dynamics, and governance (Samuel, Chubb, & Derrick, 2021; Samuel & Derrick, 2020).

This study reports an investigation of the emerging role of AI tools in assisting Arab researchers publishing in English. The study was designed to uncover the frequency, benefits, and challenges of AI utilization in performing editorial tasks and to offer insights for educators, institutions, and software developers. With a quantitative survey supplemented by open-ended questions, the following research inquiries were addressed:

1- To what extent are Arab researchers, engaged in publishing in the English language, aware of the available AI tools and their functionalities?
2- What AI-powered tools are employed by Arab researchers engaged in English-language publishing throughout the phases of research conception, editing and proofreading, academic writing, and academic publishing? What is the frequency of their usage, and what are the associated benefits?
3- What rationales underlie the choices made by Arab researchers publishing in English regarding the utilization or non-utilization of AI tools in editorial tasks?

Literature Review

Advancements in Artificial Intelligence: Exploring Machine Learning and Deep Learning Techniques

John McCarthy first coined the term artificial intelligence (AI) at the Dartmouth Workshop in 1956, and that was often regarded as the birth of AI (Marr, 2018). AI is a multidisciplinary field of computer science that aims to create systems or machines capable of performing tasks that typically require human intelligence (Copeland, 2020). These tasks include problem solving, recognizing patterns, acquiring knowledge, understanding language, and making decisions. Recent years have witnessed remarkable advancements in AI, profoundly affecting various domains of life (Brynjolfsson, Rock, & Syverson, 2019; Mazali, 2018), and integrating into daily life in various forms such as personal assistants, automated mass transportation, facial and voice recognition, and driverless automobiles. AI systems can be categorized into two main types: ANI (Artificial Narrow Intelligence) and AGI – Artificial General Intelligence. ANI represents a level of AI that possesses human-like intelligence and can understand, learn, and perform any intellectual task that a human can. AGI would have the ability to transfer knowledge and skills from one domain to another, exhibit creativity, and adapt to novel situations (Brynjolfsson & Mcafee, 2017; Goertzel, 2014; Yampolskiy, 2015).

Machine learning and deep learning techniques, particularly artificial neural networks (ANNs), have played a crucial role in advancing AI (Chowdhury, 2003; Jordan & Mitchell, 2015). They have enabled AI systems to learn, reason, and perform complex tasks with human-like capabilities (Beath, Becerra-Fernandez, Ross, & Short, 2012). Machine learning and deep learning are subfields of AI that have seen substantial growth and implementation in recent years. They are based on the idea of training algorithms to learn from

data and make predictions or decisions without being explicitly programmed. Deep learning, in particular, has been highly influential due to its ability to model complex patterns using ANNs with multiple layers. ANNs are a foundational component of deep learning and are inspired by the structure of the human brain, consisting of interconnected nodes (neurons) organized into layers.

One of the remarkable aspects of deep learning and ANNs is their capacity to learn and reason in a way that resembles human cognition. Deep neural networks can process and interpret data hierarchically, enabling them to capture intricate features and representations. ANNs can be trained on large datasets to recognize patterns, make predictions, and perform various tasks (Chowdhury, 2003; Jordan & Mitchell, 2015; Mahesh, 2020).

AI Tools in Editorial Tasks

Funders of scholarship, including government agencies and private foundations, have recognized the transformative potential of AI in various aspects of the research process and are actively exploring how AI can revolutionize research methods, processes, management, and evaluation. This recognition stems from the understanding that AI technologies can significantly enhance the efficiency, accuracy, and scope of research activities, and it has resulted in the development of a variety of AI tools designed to assist researchers. Related AI tools are based on machine learning and deep learning techniques and are adept at analyzing huge datasets and extracting valuable insights (UKRI, 2021), automating routine tasks in research, such as cleaning data, reviewing literature, and designing experiments, and conducting predictive analytics, helping researchers anticipate trends, outcomes, and potential breakthroughs (UKRI, 2021). By delegating editorial tasks to AI tools, researchers can focus on more creative and complex aspects of their work. The design of AI tools draws inspiration from the concept of improving writing skills by utilizing a range of features embedded within each tool, all while preserving the central role of the author in the writing process (Lu, 2019).

Nearly all empirical studies on the topic have focused on evaluating the effect of AI on academic writing and scholarly research. An accumulating body of research has investigated the use of AI by non-native English speakers, given the challenges they face in academic writing and scholarly research. Nazari, Shabbir, and Setiawan (2021) examined the efficacy of AI-based writing tools among English as a second language postgraduates. Students who used AI-powered writing tools produced better academic writing due to constant formative feedback. They also noted that tools improved the students' learning behavior and technology acceptance. Garlinska, Osial, Proniewska, and Pregowska (2023) investigated how online cloud-based writing tools are transforming the domain of writing instruction. These tools offer functionalities such as real-time feedback, collaborative editing, and plagiarism checks, which enhance the writing product of students and inspire them to engage in critical thinking and independent reasoning. Nykyporets (2023) study showed that such features both improve the quality of written work and promote learning and technology acceptance among students.

The publicly accessible AI tools designed for research writing, whether offered as free or premium software, can be classified into four categories aligned with various phases of the research process including AI Tools in Research Conception, Al Tools in Academic Writing, AI tools in Editing and Proofreading; and AI tools in Academic Publishing. The current study obtained data based on this categorization.

AI Tools in Research Conception

AI tools can play a critical role in various stages of the research conception process. AI-driven data analysis and pattern recognition benefit hypothesis generation, assisting researchers in formulating hypotheses based on existing data and research trends. AI-powered tools significantly expedite literature reviews (Wagner, Lukyanenko, & Paré, 2022) by automating the identification and collection of relevant papers and articles (Extance, 2018), thereby ensuring a comprehensive examination of existing knowledge (Dos Santos, da Silva, Couto, Reis, & Belo, 2023; Extance, 2018). In the domain of meta-analysis, AI facilitates the systematic synthesis of findings from multiple studies, allowing valuable insights into overarching trends and effect sizes (Christopoulou, 2023; Collins, Dennehy, Conboy, & Mikalef, 2021). Furthermore, AI tools for summarization condense extensive literature into concise summaries, facilitating the extraction of key ideas and research gaps (Collins et al., 2021). Idea extraction tools analyze textual data to extract hidden patterns and novel concepts, assisting in identifying innovative research directions. AI also aids research design by optimizing experimental parameters and sample sizes, contributing to the creation of systematic study designs that enhance the validity and reliability of outcomes (Christopoulou, 2023; Collins et al., 2021; Dos Santos et al., 2023; Extance, 2018).

Al Tools in Academic Writing

AI tools have revolutionized academic writing processes in various ways. AI-powered assistant writers can enhance the quality of scholarly manuscripts and the efficiency of their production by offering real-time suggestions for grammar, style, and overall clarity (Cotos, 2015; Koltovskaia, 2020; Syafi'i, 2020), thereby assisting researchers and students in producing well-structured documents. An extensive body of research has documented the impact of language translation AI tools on research by significantly broadening

accessibility through seamless translation of academic content across languages, enabling researchers to engage with a diverse array of materials (Groves & Mundt, 2015; Kol, Schcolnik, & Spector-Cohen, 2018; Lee, 2020) (Aiken & Balan, 2011; Ali & Fard Kashani, 2014). AI-driven converters have streamlined the conversion of informal writing into academic text, helping individuals transform drafts and informal notes into formal, scholarly prose. Paraphrasing tools utilize AI to rephrase sentences and paragraphs while preserving the original meaning (Maulidia & Sulistyaningrum, 2021), promoting the production of original diction, and minimizing plagiarism risks. Data interpretation AI tools assist researchers in comprehensively analyzing and visualizing data, simplifying the process of drawing meaningful insights and conclusions (Alpa. K, 2013; Kumar & Goyal, 2016). AI tools can also generate effective titles and keywords for research papers (Li, 2021; Onan, Korukoğlu, & Bulut, 2016), enhancing visibility in academic databases and advancing broader engagement with findings. Lastly, AI-based reference management tools ensure accurate and consistent formatting of citations and references according to various academic citation styles, simplifying the often-complex task of proper referencing (Ivey & Crum, 2018; Nilashi, Ibrahim, Sohaei, Ahmadi, & Almaee, 2016).

AI Tools in Editing and Proofreading

In the realm of editing and proofreading, AI tools have supported researchers in a new era of precision and efficiency. A vocabulary enhancer, a remarkable AI-driven resource, provides invaluable assistance by suggesting more precise and suitable word choices, thereby enhancing the richness and depth of academic writing. NLP and rule-based engines have enabled the development of language checking tools that can assist in identifying errors in grammar, sentence structure, punctuation, capitalization, and abbreviations. Grammarly, a widely used tool in this category, is available in both free and premium versions and can be used as a plug-in on a browser or popular word processing software such as Microsoft Word (Fitria, 2021; Syafi'i, 2020). Spell checker AI tools work thoroughly to detect and correct spelling errors, maintaining the overall accuracy of written content. The consistency AI checker reviews academic writing to ensure uniformity in terminology, formatting, and stylistic elements throughout the document. Finally, citation checker AI tools thoroughly scrutinize manuscripts to guarantee the precision and completeness of citations and references.

AI Tools in Academic Publishing

In the domain of academic publishing, AI tools have emerged as instrumental resources, streamlining various facets of scholarly communication. Journal finder AI tools assist in identifying suitable academic journals for manuscript submission, considering factors such as research topic and impact factor. Semantic Scholar is a research tool that uses AI to facilitate scientific literature searches (Fricke, 2018; Hannousse, 2021) with the guidelines of their target journals, facilitating the publication process (Khalifa & Albadawy, 2024). These tools can be used to ensure that a manuscript is formatted correctly, including the citation style, reference list, headings, and other formatting requirements. Additionally, AI-driven peer review tools aid journal editors in identifying appropriate peer reviewers based on their expertise and research domains, thereby ensuring the precision and relevance of the peer review process. Ethical compliance checker AI tools assist researchers in verifying that their manuscripts adhere to ethical standards and guidelines, including issues related to plagiarism and citation. Technical compliance checker AI tools are also used to review manuscripts to ensure that they meet the technical requirements of target journals, including aspects such as formatting, word count, and reference style.

Methodology

Research Design

The study adopted a mixed method research design with a descriptive approach as the data was collected through both open ended and closed-ended questions. The descriptive methods helped in arranging the qualitative data in the NVivo software and conduct a content analysis. Since the study examined AI tools for academic publishing, its focus was on machine learning and AI based algorithms. This method suited this study as this was an inquiry into the attitude and AI potential of researchers.

Research Tool

A survey questionnaire was used as the research tool to collect data for this study. The survey was entitled "An Investigation of Artificial Intelligence Tools in Editorial Tasks Among Arab Researchers Publishing in English" (https://www.surveymonkey.com/r/Altools) The survey aimed to gather information about the usage of AI tools in editorial tasks among Arab researchers who publish in English. It was designed according to the AI tool categorization.

Sampling

The participants consist of individuals with expertise in various fields, including the humanities, medical sciences, computer sciences, and business administration. They are located in a range of Arab nations: Saudi Arabia, Kuwait, Egypt, Jordan, and the United Arab Emirates. For each AI tool in each category, participants were requested to describe their use of it by choosing one of the following options: "I use them regularly," "I

sometimes use them," "I have heard of but never used them," or "I have never heard of them." A total of Eighty-four participants (N=84) responded to the survey. They were all Arab researchers publishing in English, and their publications varied from five to twenty-five publications.

Results

In surveys, content validity refers to the degree to which the questionnaire content matches the theoretical content. An external reviewer extensively examined the survey to ensure content validity. Expert opinion guided the use of a content validity ratio to determine which items to exclude or modify (Cho et al., 2022; Onan et al., 2016). Additionally, we assessed the scale's usefulness in data collection to establish the instrument's validity. Factor analysis can also be used to estimate the content and construct the validity of a survey. The reliability of the survey employed was assessed by calculating reliability coefficients. Cronbach's alpha for the closed-ended items was 0.77, indicating internal consistency. Table 1 summarizes the ANOVA test and two factor analysis.

Table 1*: ANOVA Test: Two-Factor without Replication.*

Source of Variation	SS	df	MS	F	P-value	F crit
Participants	664.1494	84	8.001799	16.87653	2.2E-167	1.277054
Survey items	325.8506	21	15.5167	32.72614	7.9E-110	1.561844
Error	826.4221	1743	0.474138			
Total	1816.422	1847				

Participants were also encouraged to share their thoughts, suggestions, and any additional comments in open-ended questions.

Quantitative Results of Closed ended Questions

Table 2 below summarizes the descriptive statistics of the results for the closed-ended questions regarding AI usage. For each item, the mean, standard deviation, and sample variance are reported.

Table 2*: AI Tool Usage in the Research Conception Phase.*

Task	Regular use	Occasional use	Known but not used	Unknown	Mean	Std. Deviation	Sample Variance
Hypothesis Generation	10.71%	28.57%	53.57%	7.14%	2.42	0.78	0.61
Reviewing Literature	7.14%	50%	35.71%	7.14%	2.57	0.73	0.54
Drafting Meta-analysis	7.14%	21.43%	57.14%	14.29%	2.25	0.74	0.55
Summarization	28.57%	28.57%	39.29%	3.57%	2.82	0.89	0.80
Idea Extraction	14.29%	21.43%	46.43%	17.86%	2.35	0.9	0.81
Research Design	3.57%	25.00%	53.57%	17.86%	2.14	0.75	0.56

This information reveals varying levels of AI usage across different phases of the research conception phase. For the "hypothesis generation" task, approximately 10.71% of respondents reported regular AI usage, with an additional 28.57% using it sometimes. A majority, 53.57%, had heard of AI but never used it, and 7.14% had never heard of it. The mean score of 2.42 suggests moderate usage, with some respondents reporting higher and lower levels of AI integration. The standard deviation of 0.78 indicates a certain degree of variability, and the sample variance of 0.61 further illustrates the spread of responses around the mean. Regarding the "reviewing literature" task, 7.14% of respondents reported regular AI usage, while a substantial 50% used it sometimes; 35.71% had heard of AI but never used it, and 7.14% were unfamiliar with it. The mean score of 2.57 indicates a relatively higher level of AI adoption compared to hypothesis generation. The standard deviation of 0.73 suggests less variability in responses, and the sample variance of 0.54 reflects a narrower spread of responses around the mean.

For the "drafting meta-analysis" task, 7.14% of respondents reported regular AI usage, and 21.43% used it sometimes. The majority, 57.14%, had heard of AI but never used it, while 14.29% had never heard of it. The standard deviation of 0.74 indicates some variability, and the sample variance of 0.55 shows that responses are somewhat dispersed around the mean. For the "summarization" task, 28.57% of respondents reported regular AI usage, and another 28.57% sometimes used AI for this purpose. However, 39.29% had heard of AI but never used it, and only 3.57% were unaware of it. The mean score of 2.82 indicates a relatively high level of AI usage for summarization. The standard deviation of 0.89 suggests variability in responses, with a range of usage reported. The sample variance of 0.80 demonstrates that responses are somewhat dispersed around the mean. For the "idea extraction" task, 14.29% of respondents reported regular AI usage, and 21.43% used it sometimes.

A significant portion, 46.43%, had heard of AI but never used it, while 17.86% had never heard of it. As regards the "research design" task, only 3.57% of respondents reported regular AI usage, with 25.00% using it sometimes. The majority, 53.57%, had heard of AI but never used it, and 17.86% were unfamiliar with it. The mean score of 2.14 indicates relatively low AI usage for research design. The standard deviation of 0.75 suggests some variability, and the sample variance of 0.56 reveals that responses are somewhat dispersed around the mean.

This analysis of AI use in research conception reveals diverse patterns. Some tasks show higher levels of AI adoption, such as summarization and writing literature review. In these tasks, a significant proportion of respondents reported regular or occasional use of AI tools, indicating a relatively advanced level of adoption. On the other hand, initial research tasks such as "hypothesis generation" and "idea extraction" exhibited lower AI adoption rates, with many respondents either having heard of AI but never used it or being entirely unaware of it. This suggests that AI's potential benefits are more noticeable in later research stages. Furthermore, across all tasks, there was a notable degree of variability in AI usage among the respondents. The "research design" task stands out as having the lowest AI adoption, with only a small percentage of researchers reporting regular AI usage.

It is evident that awareness of AI is relatively high across the surveyed respondents in most tasks. For instance, for the "hypothesis generation," "writing the literature," and "idea extraction" tasks, a substantial proportion of researchers reported having heard of AI, even if they had not yet incorporated it into their workflow. This indicates that AI has gained recognition among researchers as a potentially valuable tool in the research process. However, awareness does not always translate into usage. Despite being aware of AI, a significant number of researchers have not yet employed AI tools in their work, suggesting that there may be barriers or challenges to adoption. The "research design" task, in particular, lags in both awareness and utilization of AI, indicating a potential area for increasing awareness and promoting the benefits of AI for this task.

Table 3 offers a detailed analysis of the utilization of AI tools in the academic and scientific writing phase.

Table 3: *AI Tool Usage in the Writing Phase.*

Task	Regular use	Occasional use	Known but not used	Unknown	Mean	Std. Deviation	Sample Variance
Assistant Writer	17.86%	50.00%	25.00%	7.14%	2.79	0.82	0.68
Language Translation	35.71%	39.29%	21.43%	3.57%	3.07	0.85	0.72
Informal to Academic Text Conversion	28.57%	28.57%	32.14%	10.71%	2.75	0.99	0.98
Paraphrasing	32.14%	32.14%	32.14%	3.57%	2.89	0.94	0.89
Data Interpretation	10.71%	21.43%	42.86%	25.00%	2.18	0.93	0.87
Title and Keyword Generation	7.14%	14.29%	53.57%	25.00%	2	0.85	0.72
Reference Management	28.57%	28.57%	28.57%	14.29%	2.71	0.88	0.78

The information reveals that starting with the "assistant writer" task, 17.86% of respondents reported regular usage of AI tools for assistance in writing, while a substantial 50.00% mentioned occasional use. Moreover, 25.00% had heard of AI tools designed for this purpose but had not yet incorporated them into their workflows, while a smaller proportion of 7.14% had never heard of such tools. The mean score of 2.79 reveals a moderate level of AI tool adoption for assistant writing tasks. The standard deviation of 0.82 highlights the presence of variability in responses, indicating that researchers' usage patterns vary, with the sample variance of 0.68 reflecting the dispersion of responses around the mean.

Moving on to "language translation," 35.71% of the respondents reported regular usage, with an additional 39.29% indicating occasional use of AI tools for translation. Approximately 21.43% had heard of these tools but had yet to employ them, while a mere 3.57% were unaware of their existence. A particularly noteworthy finding is the relatively high mean score of 3.07, signifying a substantial adoption rate for AI tools in language translation tasks. Regarding the "informal to academic text conversion" task, 28.57% of respondents reported regular and the same number of occasional usages, reflecting a balanced pattern of adoption. A significant 32.14% had heard of AI tools for this conversion but had not yet integrated them into their work, while 10.71% remained unfamiliar with such tools. The standard deviation of 0.99 indicates a relatively high degree of variability in responses, highlighting diverse usage patterns among researchers.

AI tool usage for "paraphrasing" exhibited a balanced pattern, with 32.14% of respondents reporting regular and 32.14% occasional usage. A significant 32.14% had heard of these tools but had not yet employed them, while only 3.57% were unaware of such tools. Regarding "data interpretation," 10.71% of respondents

reported regular AI tool usage, with 21.43% using them sometimes. A substantial 42.86% had heard of AI tools for data interpretation but had not yet integrated them into their work, while 25.00% had never heard of them. The mean score of 2.18 suggests relatively lower AI tool adoption for data interpretation tasks. Variability in responses is apparent, with a standard deviation of 0.93 and a sample variance of 0.87. Only 7.14% of respondents reported regular AI tool usage in "title and keyword generation," with 14.29% using them occasionally. A majority, 53.57%, had heard of AI tools for this purpose but had not yet integrated them, while 25.00% had never heard of them. For "reference management," 28.57% of respondents reported regular AI tool usage, with an equal percentage using them occasionally. Another 28.57% had heard of AI tools for reference management but had not yet employed them, while 14.29% were unfamiliar with such tools.

Table 4 summarizes the use of AI tools in the editing and proofreading phase.

Table 4: *AI Tools in the Editing and Proofreading Phase.*

Task	Regular use	Occasional use	Known but not used	Unknown	Mean	Std. Deviation	Sample Variance
Vocabulary Enhancer	46.43%	17.86%	28.57%	7.14%	3.04	1.02	1.05
Grammar Checking	50.00%	28.57%	21.43%	0.00%	3.21	0.78	0.60
Spelling Checking	50.00%	32.14%	17.86%	0.00%	3.28	0.75	0.57
Consistency Checking	21.43%	28.57%	28.57%	21.43%	2.5	1.06	1.12
Citation Checking	21.43%	28.57%	32.14%	17.86%	2.54	1.02	1.05

The results in Table 4 show that "vocabulary enhancer" AI tools were widely adopted in the editing and proofreading phases, with 46.43% of the respondents reporting regular usage and an additional 17.86% using them occasionally. While a notable 28.57% had heard of these tools but had not yet incorporated them into their editing workflows, a smaller proportion of 7.14% had never heard of such tools. The mean score of 3.04 signifies a high level of adoption for vocabulary enhancer tools, reflecting their perceived value in enhancing written content. "Grammar checking" AI tools also enjoyed significant adoption, with 50.00% of respondents reporting regular usage and 28.57% indicating occasional use. Notably, no respondents reported never having heard of grammar- checking tools, indicating widespread awareness. The mean score of 3.21 highlights a very high level of adoption for grammar checking tools, underlining their importance in ensuring grammatical accuracy.

Similar to "grammar checking, "spelling checking" AI tools exhibited substantial adoption, with 50.00% of respondents reporting regular usage and 32.14% indicating occasional use. No respondents reported never having heard of spelling checking tools. The mean score of 3.28 underscores the very high level of adoption for spelling checking tools, emphasizing their significance in ensuring spelling accuracy. "Consistency checking" AI tools were moderately adopted, with 21.43% of respondents using them regularly and 28.57% occasionally. Another 28.57% had heard of these tools but had not yet integrated them into their editing and proofreading processes. A noteworthy 21.43% had never heard of consistency checking tools. "Citation checking" AI tools also demonstrated moderate adoption, with 21.43% of respondents using them regularly and 28.57% occasionally. An additional 32.14% had heard of these tools but had not yet integrated them, while 17.86% had never heard of citation checking tools.

Table 5 illustrates AI tools in the Academic publishing phases for various tasks.

Table 5*: AI Tools in the Academic Publishing Phase.*

Task	Regular use	Occasional use	Known but not used	Unknown	Mean	Std. Deviation	Sample Variance
Journal Finding	17.86%	21.43%	35.71%	25.00%	2.32	1.043	1.1
Journal Style Formatting	14.29%	21.43%	35.71%	28.57%	2.21	1.02	1.04
Journal Peer Reviewing	10.71%	3.57%	35.71%	50.00%	1.78	0.94	0.89
Ethical Compliance Checking	10.71%	10.71%	25.00%	53.57%	1.78	1.02	1.04
Technical Compliance Checking	7.14%	17.86%	28.57%	46.43%	1.67	1.04	1.04

Table 5 reveals that 17.86% of respondents reported using AI tools for "journal finding" regularly, while an additional 21.43% indicated that they sometimes used them. A substantial 35.71% had heard of these tools

but had not yet employed them, and 25.00% had never heard of them. For "journal style formatting" AI tools, 14.29% of respondents reported regular usage, with an additional 21.43% using them occasionally. A significant 35.71% had heard of these tools but had not used them, while 28.57% had never heard of them. "Journal peer reviewing" AI tools showed a lower level of adoption, with 10.71% of respondents reporting regular usage and only 3.57% indicating occasional use. A substantial 35.71% had heard of these tools but had not yet incorporated them into their peer review processes, while a significant 50.00% had never heard of them. "Ethical compliance checking" AI tools also demonstrated a relatively low level of adoption, with 10.71% using them regularly and an additional 10.71% using them occasionally; 25.00% had heard of these tools but had not yet employed them, while a substantial 53.57% had never heard of ethical compliance checker tools. "Technical compliance checking" AI tools exhibited relatively low adoption rates, with 7.14% of respondents reporting regular usage and 17.86% indicating occasional use. A significant 28.57% had heard of these tools but had not yet integrated them, while 46.43% had never heard of them.

Qualitative Results of Open-ended Questions

A comprehensive examination of the open-ended questions in the survey involved the analysis of a total of 3,527 words. The analysis was facilitated by NVivo software (https://lumivero.com/products/nvivo/). This is an open-source web-based system that offers a range of computational tools. These tools include automatic coding, sentiment analysis, reference tracking, relationship inference, word cloud generation, and frequency extraction. The analysis was complemented by a qualitative review and assessment of the responses provided by survey participants. The responses are grouped in the following four questions:

How do AI tools influence editorial tasks when publishing in English?

Based on the word cloud provided via NVivo software, it appears that AI tools have had a significant impact on editorial tasks in English publishing. The qualitative analysis of the responses suggested by the word cloud indicates that AI tools have been helpful in several key areas. Words like "spell," "grammar," and "checks" implied that AI tools are widely used for detecting and correcting spelling and grammatical errors, which enhances the accuracy of text. This was also revealed by the quantitative analysis. Frequent terms such as "time," "helps," and "saved" suggest that AI tools have made the editorial process more efficient, saving researchers time that can be used for other tasks. Words like "editing," "drafting," and "formatting" indicate that AI tools are integral in various stages of writing and editing, streamlining these processes and changing the approach to how editing is done. Frequent use of the word "plagiarism" suggests that AI tools are important for checking the originality of content, which is crucial in maintaining academic integrity.

Words such as "enhance," "improve," and "polishing" appeared frequently in the participants' responses, implying that AI tools contribute to the overall quality of written work by providing suggestions for enhancement and allowing for more thorough polishing of text. The autocode sentiment analysis revealed that a significant number of responses fell into the category of "moderately positive," suggesting that many respondents had a generally positive but not overly enthusiastic view of the impact of AI tools on editorial tasks. Only a few responses are categorized as "moderately negative," which implies that there were some reservations or criticisms regarding the use of AI tools in the editorial process, but these were not predominant.

What main challenges were encountered while using AI tools in editorial tasks?

As depicted in the word cloud analysis, the word "integrated" suggests that users may face difficulties in incorporating AI tools into their existing workflows or systems. The term "expensive" indicates that the cost of AI tools can be a barrier for some users, possibly due to budget constraints or the perception that the value does not justify the expense. Words like "inaccurate" and "non-appropriate" highlight concerns about the reliability of AI tools in providing correct information or appropriate suggestions, which is critical in editorial work. While AI tools offer many benefits for editorial tasks, users also face a range of challenges, including integration with existing systems, cost, accuracy, functional limitations, referencing issues, quality control, and usability. Yet, a significant number of responses fell under the category "moderately negative," which points to the existence of notable challenges or dissatisfaction with AI tools in the context of editorial tasks.

Which specific AI tools or software found to be useful for editorial tasks, and what features or functions made them stand out?

"Grammarly" was a prominent term in the word cloud, indicating that Grammarly is highly regarded for its ability to improve the quality of writing. Endnote is valued for its ability to organize and manage citations and bibliographies. The inclusion of ChatGPT implies that conversational AI models that can generate text and provide writing assistance are considered useful. QuillBot, a paraphrasing tool, is appreciated for its ability to help with rewording and rephrasing content. The presence of words like "academic," "scholar," and "papers" implies that tools that cater to the needs of academic writing and research are particularly valued. Terms like "style," "spell," "grammar," and "syntax" emphasize the importance of tools that can assist with language correctness and stylistic consistency.

What are the ethical considerations in using AI tools in editorial processes?

The word clouds suggest that when using AI tools in editorial processes, it is crucial to focus on data quality, prevent plagiarism, maintain transparency and control, make ethical decisions, assure content quality, manage references accurately, and preserve editorial integrity. These considerations are essential to ensuring that the use of AI aligns with the ethical standards of academic publishing. Words like "data," "accurate," "checked," and "assure" emphasize the importance of ensuring the accuracy and quality of the data used by AI tools. This includes the need for fact-checking and verification to prevent the dissemination of misinformation. The terms "plagiarism," "original," and "generate" highlight the ethical imperative to ensure that content produced with the help of AI tools is original and not plagiarized. The repeated appearance of "ethical" and "considerations" indicates the need for careful ethical decision-making when integrating AI into editorial workflows.

Discussion

The results of this study shed light on the usage patterns of AI tools in editorial tasks among Arab researchers who publish in English. Along with other studies (Garlinska et al., 2023; Lu, 2019; Nazari et al., 2021; Nykyporets, 2023), the premise underlying this study is that the development of AI tools contributes to enhancing writing abilities through the incorporation of various features within each tool while also maintaining the author's role in the writing process. The findings of the present study have several implications for both researchers and the broader academic and publishing community.

Among the most significant results of this study is the diverse adoption of AI tools. The study reveals varying levels of AI tool adoption across different phases of research and editorial processes. While some tasks, such as "grammar checking" and "spelling checking," resonate with other related studies (Fitria, 2021; Syafi'i, 2020), which show widespread adoption, others, like "research design," lag behind. This suggests that researchers are more inclined to use AI for tasks related to language correctness and content enhancement but may be less familiar with or hesitant to employ AI in other aspects of their work. A noteworthy finding is that many researchers are aware of AI tools, even if they have not integrated them into their workflows. This indicates that there is recognition of the potential benefits of AI in research and editorial tasks. However, the gap between awareness and adoption suggests that there may be barriers or challenges that prevent researchers from fully utilizing AI tools. In line with Nazari et al. (2021), who asserted that AI tools improved the users' learning behavior and technology acceptance, accumulated experiences will affect AI tool users' learning and accepting behavior.

The cost of AI tools and software has been revealed to be a significant barrier, particularly for individual researchers or institutions with limited budgets. Addressing cost-related issues may promote wider AI tool adoption. The emphasis on ethical considerations in the responses underscores the importance of maintaining ethical standards when using AI for editorial tasks. Ensuring the accuracy and originality of content, as well as preventing plagiarism, is crucial. Researchers and publishers should be cautious in addressing ethical concerns associated with AI-generated content. Integration as a challenge highlights the importance of integration of AI tools into existing workflows. Researchers may face difficulties in incorporating AI into their established processes, emphasizing the need for user-friendly and customizable AI solutions. The identification of specific AI tools such as Grammarly, Endnote, and QuillBot as particularly useful suggests that researchers should explore and choose tools that align with their specific needs. These tools offer features that address common challenges in editorial tasks, such as grammar checking, reference management, and paraphrasing. The low adoption rates in certain tasks, especially in research design, indicate a need for increased awareness and education about the potential benefits of AI tools in these areas. Researchers may not fully understand how AI can assist in tasks beyond language correction and content enhancement.

Conclusion

This study opens avenues for future research, including investigating the reasons behind the barriers to AI adoption, the reasons behind the gap between awareness and adoption of AI tools, exploring strategies to reduce costs, and assessing the long-term impact of AI tools on the quality and efficiency of academic and scientific publication. In conclusion, the findings provide valuable insights into the current landscape of AI tool usage in editorial tasks among Arab researchers publishing in English. These insights can inform researchers, institutions, and publishers about the opportunities and challenges associated with AI adoption, ultimately contributing to the improvement of editorial processes and the quality of academic and scientific publications.

The study's findings offer insightful implications for researchers and institutions regarding the utilization of AI tools in editorial tasks, especially among Arab researchers publishing in English. It is essential for researchers to actively explore and integrate AI tools into various phases of their research and editorial processes, not just for grammar and spelling checks but also for research design and content

enhancement. Researchers have to stay updated on the most recent AI tools and their potential advantages, especially in domains such as data analysis and research planning, which extend beyond linguistic accuracy. Additionally, researchers must ensure the ethical application of AI tools, especially regarding preventing plagiarism and preserving the originality of content. They should exercise caution regarding the precision of the content generated by AI. Institutions should facilitate access to AI tools and software, especially for departments and researchers with limited financial resources. Additionally, institutions should provide researchers with training and support on how to utilize AI tools effectively in their work. This includes educating researchers beyond the editorial duties regarding the potential of AI in various facets of research. Institutions ought to additionally establish and disseminate ethical principles governing the utilization of AI in publication and research, thereby ensuring that the scientific community is aware of the benchmarks that uphold authenticity and integrity.

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