Uludağ Üniversitesi Eğitim Fakültesi Dergisi / Journal of Uludag University Faculty of Education
e-ISSN: 2667-6788 https://dergipark.org.tr/tr/pub/uefad
Yıl **2024,** Cilt **37**, Sayı **3**, **1190**-**1208** | DOI: https://doi.org/10.19171/uefad.1514323 **Araştırma Makalesi | Research Article**

Exploring Ethical Dilemmas in the Use of Artificial Intelligence in Academic Writing: Perspectives of Researchers

Akademik Yazım Sürecinde Yapay Zekâ Kullanımı: Araştırmacıların Etik İkilemler Konusundaki Görüşleri

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Abstract

The use of artificial intelligence in academic writing prompts a profound reconsideration of fundamental ethical issues, including property, accuracy, and privacy. This study aims to explore the ethical dilemmas in academic writing, focusing on the perspectives of social sciences researchers. It employed a case study design and used a maximum diversity sampling method, engaging 34 researchers. Data collection utilized open-ended questions, guided by Mason's framework of computer ethics, encouraging participants to provide detailed responses. Data were analyzed using descriptive analysis, focusing on themes of property, accuracy, and privacy. The findings reflect the participants' diverse views on the ethical implications of using artificial intelligence in academic writing. Specifically, the necessity of disclosing sources when artificial intelligence generates information and the importance of ethical citations were emphasized. The results initiate significant discussions on the ethical use of artificial intelligence in academic writing and contribute to the relevant literature.

Keywords: Academic writing, Artificial intelligence, Academic ethics

Özet

Akademik yazım sürecinde yapay zekânın kullanımı, bilginin sahipliği, doğruluğu ve gizliliği gibi temel etik konuları derinlemesine yeniden düşünmeye sevk etmektedir. Bu araştırma, akademik yazım sürecinde yapay zekâ kullanımının etik boyutlarını incelemeyi amaçlamaktadır. Çalışmada, sosyal bilimler alanındaki araştırmacıların görüşlerini içeren bir durum çalışması tasarlanmıştır. Örneklem seçiminde maksimum çeşitlilik yöntemi kullanılmış olup, 34 araştırmacı çalışmaya katılmıştır. Veri toplama sürecinde, Mason'un bilişim etiği çerçevesinde hazırlanan, açık uçlu sorular kullanılmış ve katılımcılardan uzun paragraflar halinde yanıt vermeleri istenmiştir. Veriler, betimsel analiz yöntemi ile analiz edilmiş ve fikri mülkiyet, doğruluk ve gizlilik temalarında açıklanmıştır. Bulgular, katılımcıların yapay zekânın akademik yazımda kullanılmasının etik etkilerine ilişkin çeşitli görüşlerini yansıtmaktadır. Özellikle, yapay zekânın oluşturduğu bilginin kaynaklarının belirtilmesi gerekliliği ve atıfların önemi araştırmada vurgulanmıştır. Sonuçlar, akademik yazım sürecinde yapay zekânın etik kullanımı konusunda önemli bir tartışma başlatmakta ve ilgili literatüre katkı sağlamaktadır.

Anahtar Kelimeler: Akademik yazım, Yapay zekâ, Akademik etik

Kabul Tarihi / Received: 11.07.2024 | Onay Tarihi / Accepted: 03.09.2024

1. Introduction

1.1. Problem Statement

Thanks to techniques such as artificial intelligence, deep learning, and natural language processing, it provides guidance by offering an interactive learning environment for writing scientific articles, thus contributing to academic writing. However, these contributions provided by artificial intelligence bring various concerns about the ownership, accuracy and confidentiality of information.

The presentation and use of texts produced and edited by artificial intelligence without citing the source may lead to plagiarism problems. This situation violates the principle of academic honesty by damaging the originality of the academic work. The traditional understanding and ethical standards on the right of authorship in academic texts require re-evaluation with artificial intelligence and academic research on this issue. Being accepted as an author in academic studies requires a certain level of intellectual contribution. The extent to which the texts, analyses and findings generated by artificial intelligence will be accepted as the author's contribution is still under debate (Gribincea, 2020). Many international academic journals and institutions have set criteria for authorship. These criteria state that authors should contribute to the research design, data analysis, obtaining the findings, and interpreting the results. It should be clarified how effective artificial intelligence is in these processes. Indeed, publishing houses have started to require a statement of how much artificial intelligence has contributed in which parts at the beginning of the article submission process. There is a need for academic research on the issue of who will own the copyright and intellectual property of the content produced by artificial intelligence.

While artificial intelligence technologies offer opportunities for the accuracy of scientific knowledge and verification of information, they can also cause the spread of false or misleading information. Artificial intelligence models are generally trained by data sets created from information on the internet and respond accordingly. The reliability of the sources used by artificial intelligence in knowledge generation directly affects the accuracy of the information. Academic sources should be carefully selected and used. In cases where the information on the internet is of low quality or contains incorrect information, the results produced by artificial intelligence may be misleading. In addition, artificial intelligence models may produce inaccurate, erroneous, or non-existent results due to algorithmic errors or biases. This may jeopardize the accuracy of the information.

The privacy of the data used by artificial intelligence and the ethical issues it poses are among the most important topics of discussion today. Artificial intelligence models are often trained using large amounts of personal data. When the confidentiality of this data is not adequately protected, there is a risk of violating users' privacy. For example, if sensitive data such as medical records, financial information or personal communications are used for training AI algorithms, this information may become accessible to unauthorized persons. Such situations not only jeopardize the privacy of individuals, but also damage the trust of organizations and individuals. Moreover, concerns about the misuse or malicious use of this data raise ethical issues. When privacy violations occur without the consent of data owners, they are considered as unethical use of artificial intelligence applications. This situation can lead to serious consequences both legally and socially. Studies to be carried out in terms of ethical and privacy issues related to artificial intelligence systems are of critical importance in terms of setting standards.

1.2. Literature Review

Ethics, in its broadest definition, is a philosophical discipline that encompasses the principles of morality, including distinguishing between right and wrong, good and evil. For the IT world, Mason (2017), in his article "Four Ethical Issues of the Information Age", identified key ethical issues such as privacy, integrity, ownership and accessibility. These issues are known as the PAPA framework. There are various criticisms that Mason's framework does not fully address the complexity of modern information technologies. For example, issues such as the ethical use of big data and algorithmic transparency have been added to the framework to address contemporary issues in information ethics (Korobko, 2021).

AI ethics encompasses various ethical considerations related to the design and use of AI systems (Kooli, 2023). The main elements of AI ethics include fairness, data privacy, security, ethical algorithms, decision-making, reliability, and transparency in AI (Safdar et al., 2020). Studies on the ethics of artificial intelligence first focused on the basic principles, then on human-like behaviours, and finally on the development of artificial intelligence in a human-oriented and socially beneficial way (Gao et al., 2024). According to the results of the related literature review, there are problems in the main topics of the Collingridge dilemma, artificial intelligence transparency, privacy protection, justice and equality, algocracy and super intelligence (Gao et al., 2024; Kooli, 2023). The proposed solutions include transparency, bias mitigation and interdisciplinary cooperation in AI deployment.

The basic principles of academic ethics in research and article writing are based on the philosophy of scientific ethics. Scientific ethics is a set of interdisciplinary principles that require compliance with fundamental values such as honesty, impartiality, transparency and responsibility in the research and publication process. Protecting the integrity of participant data, human subjects, and the research process is a central principle of research ethics (Pugsley, 2016). Ethical codes of conduct and ethics education are necessary to minimize future ethical dilemmas in research with human subjects (Schwester, 2020). Researchers should ensure integrity and quality by providing full and informed participation of participants, voluntary participation, and respect for anonymity and confidentiality. Ethical approval must be obtained from the Ethics Committee before the research to control the authenticity of each research and to examine it impartially. Research ethics requires the inclusion of ethical principles in research practices at all stages of the research, from the problem situation to the writing of the conclusion and discussion section. The principles that regulate research conduct include respect for personal rights, justice and fairness, and non-harm (Cubelli, 2020).

The impact of artificial intelligence on academic writing is increasingly felt, and these technologies are used in many different fields. Especially in language processing and text production, artificial intelligence tools facilitate the work of researchers. Artificial intelligence is used in academic writing for tasks such as searching literature, organizing sources, editing texts, automatically generating content, and translating. Among the prominent artificial intelligence tools in this field are systems such as GPT-4, Jenni, Poe and Scite. Language models such as GPT-4 have the capacity to produce complex and fluent texts and help researchers in a wide range of fields (OpenAI, 2022). While some tools correct spelling and grammatical errors, some software provides considerable convenience in editing sources and creating bibliographies. These artificial intelligence tools allow researchers to work more efficiently by increasing the speed and accuracy of academic writing.

The use of artificial intelligence in research and article writing is a research area with various dimensions. The development and implementation of AI systems pose complex ethical challenges such as fairness, privacy, transparency, and human subjectivity (Zhang & Andwari, 2022). The evolution of AI ethics has gone through various stages, from endowing AI with human-like characteristics to

emphasizing the development of human-centred AI systems. Considering the post-classical stage of scientific development and the inclusion of alternative ethical-theoretical approaches, there is a need to establish ethical frameworks for AI systems (Saveliev et. al., 2021). Academic institutions are addressing the need to provide professionals and students with the knowledge and skills to develop and oversee ethical AI systems through initiatives such as postgraduate certificate programmes in AI. According to the study by Evgenev (2019), for AI to effectively generate knowledge, a highly efficient technology is required that allows knowledge carriers to build knowledge bases without the involvement of programmers. While discussions on AI ethics have been predominantly shaped by Western perspectives, there is a call for the inclusion of non-Western ethical-theoretical approaches to provide new perspectives on AI ethics research and practice. New theories are emerging in this context. The Connectivism Theory emphasizes that learning occurs due to individuals' interactions with their environment and these interactions (Goldie, 2016). According to this theory, knowledge is on networks. Siemens aims to explain the processes of people learning and sharing information through the internet and social networks. Given the diverse and changing nature of AI ethics, it is clear that the field needs a multidisciplinary approach that brings together philosophical, methodological and technical considerations to address the ethical implications of AI development and application.

The fundamental principles of AI ethics focus on ensuring integrity, transparency, and fairness in the use of these technologies. As AI becomes increasingly integrated into academic work, establishing ethical guidelines has become more important. Clear rules should be established on how AI should be used in academic writing to prevent issues such as plagiarism and the misrepresentation of authorship (Delgado et al., 2024). The ethical implications of AI-generated content should be considered, and researchers and institutions must use these tools responsibly (Fardim et al., 2023). Additionally, AI applications should be designed to avoid biases that could disadvantage minority groups and should be aimed at promoting fairness within academic settings (Ghotbi, 2024). Therefore, AI developers, researchers, and ethics committees need to collaborate to create a framework that supports the ethical use of AI in academic writing (Fardim et al., 2023). Comprehensive regulations are needed to address the ethical challenges posed by AI and to balance innovation with ethical considerations (Khan, 2024). While these principles guide the ethical use of AI, they also create a tension between technological advancement and the potential for misuse. Continuous dialogue among stakeholders is essential to effectively address these challenges.

The aim of this study is to examine researchers' views on the use of artificial intelligence in the academic article writing process. The research question was determined as follows: *"What are the views of researchers on ethical dilemmas related to artificial intelligence during academic writing?"*

2. Method

2.1. Research Design

This study used a case study approach, which allows learning about many situations such as educational, socio-cultural and organizational situations (Yin, 2009). In case studies, it is important to define the situation to be analyzed and exclude other issues from the research scope to ensure the validity. This study has a single case study design in which the opinions of faculty members about ethical dilemmas related to artificial intelligence during academic writing are handled as a case.

2.2. Study Group

Maximum variation sampling method was adopted in the selection of participants, who were selected from researchers who use and do not use artificial intelligence in their research. The study was conducted in the institution at which both researchers were employed. Invitations were sent to 167 researchers via email, and 34 voluntarily participated in the study. In the study, pseudonyms such as P1, P2, P3, … were used to protect the anonymity of each participant. Participants who worked as instructors and researchers at the Faculty of Education during the 2023-2024 academic year were included in the study. Participants were informed about ethical principles and volunteering.

2.3. Data Collection Tools

In the study, open-ended questions were prepared by considering Mason's principles of intellectual property, accuracy and confidentiality in the context of information ethics. Two experts in management information systems and social studies education analyzed the questionnaire. Afterwards, the questionnaire was subjected to final adjustments due to a pilot study conducted with a research assistant. The open-ended questions were prepared electronically and were emailed to the participants. The data were collected in the spring term of the 2023-2024 academic year. The participants were asked to answer the questions in long paragraphs, and this goal was partially achieved. The necessary permissions were obtained from the Ethics Committee before the implementation of the data collection tools. Ethics committee permission (Date: 22.03.2024, Decision No: 10) was obtained from Bursa Uludag University, Social and Human Sciences Research and Publication Ethics Committee.

2.4. Data Analysis

This study adopted the descriptive analysis method to analyze open-ended questions. In the context of information ethics, which constitutes the conceptual basis of the study, themes such as intellectual property, accuracy and confidentiality were determined. The responses to the open-ended questions were compiled around the three themes using Google Sheets. The participants' responses were written line by line under the relevant themes, and the answers written under different theme headings, which will be added to the findings, were coloured in different colours. Two researchers analyzed the data separately to identify and compare direct quotations and relationships between the themes. The collected data were labelled as positive and negative responses in a column on the right side of the relevant theme. The themes were labelled for the data by the two researchers, and each of them was coded in different colors. In this way, the themes were visually separated. The reliability and validity of the themes were ensured by using the peer review method, and five texts that at least one of the researchers deemed unnecessary were removed from the findings.

2.5. Validity of the Study

In the later stages of the research, it was observed that some participants did not fully understand the questions. This situation was considered an issue that could affect the study's validity. Thereupon, the researchers conducted new interviews with the participants to improve the comprehensibility of the questions and member checking was performed (Creswell & Miller, 2000). The additional findings from these interviews provided a better understanding of the research questions. They allowed for a more comprehensive reflection of the participants' actual experiences. In the conclusion and discussion section, necessary adjustments were made in line with these

additional findings; the research results and interpretations were restructured within the framework of the participants' perspectives that were more clearly understood.

3. Findings

3.1. Property

The participants' views differ on the ownership of information about the use of artificial intelligence in academic articles and research. Some of the academicians and researchers participating in the research state that the owner of the information is already their own. Hence, the rights of use belong to them. In this direction, the participant named K3 stated that *"The owner of an idea created through artificial intelligence is the researcher himself"* and K11 asked *"What knowledge? The information we create with our hands and upload it to the internet? Of course, we are the owners and we have the right to use it".* Similarly, P22 stated that *"Considering that AI can produce content according to existing information sources but does not produce new information, I think it is important to reach the original source of the information and attribute the information to them"* and P26 stated that the information does not belong to artificial intelligence, but belongs to the data and databases that artificial intelligence utilizes.

The majority of the participants thought that artificial intelligence will create an ethical problem in terms of ownership of information. P13 expressed his opinion on the subject: *"I do not think there is a problem in using it in resource research, but I think that taking the information it creates directly is actually plagiarism from artificial intelligence".* On the other hand, P29 stated that:

> *"The information created by artificial intelligence is also based on existing sources, so I believe that making use of artificial intelligence may cause ethical violations. In addition, science is the work of producing knowledge, and if artificial intelligence is to do this, I do not understand which part of it scientists will contribute to".*

In parallel with this understanding, the participants pointed out the necessity of giving attribution when using artificial intelligence. Related to this issue, P1 said *"If information produced by artificial intelligence is used, it should be referenced"; P14 said "I do not take those parts unless they are referenced".* Also P23 said:

> *"There is now an undeniable digital world reality in the world. All academic contents such as printed articles, books, theses, etc. are printed and published in digital environments. Most of them also have open access permission. Many academic researches can be accessed when literature search is performed in digital environments. Artificial intelligence can synthesize the information in the sources it accesses in the digital world. It can present the information of different researchers together. In this context, it is necessary to write the prompts accordingly when scanning the literature in artificial intelligence environments. For example, it may be requested to create content by specifying the sources you use. In this way, intellectual property rights are respected. As long as the names of the researchers are given, information can be used by citing references in accordance with academic requirements. Artificial intelligence can provide convenience at this point, but attention should be paid to intellectual property and references should be given to the people who contribute to the production of information".*

In addition to these views, another view is that artificial intelligence should be included as an author. Participant K24 expressed his opinion as follows:

> *"I do not think it is appropriate to use the texts created by artificial intelligence one-to-one because I think that the owner of these texts is artificial intelligence, for example, I think that*

we should give citations when we benefit from artificial intelligence, just as we benefit from a book, article or other source and give citations".

One view is that ethical problems are hidden in the intentions of researchers, regardless of the technology. Also P20 said:

"Artificial intelligence tools have recently been rapidly included in the scientific publication writing process as in many fields. Of course, this rapid adaptation brings along some problems. In fact, artificial intelligence tools are tools that take the convenience and benefit provided by the technologies used before them one step further. In this sense, I do not think that it is different from the old technologies in terms of ownership of information. A person who wants to commit an ethical violation in this regard can find a way to do it regardless of the technology. In addition, it would be useful to take the necessary measures during the development of these tools. This is also a systemic problem".

Similarly, P5 expressed his thoughts on the subject as follows:

"I do not think that using artificial intelligence as an auxiliary tool, referring to the relevant literature and integrating the findings in question with the author's own expressions and readings will cause a problem in longerim. I do not think that academics with quality and ethical problems will take this problem into consideration anyway. It is noteworthy that ethical problems occur mostly in ordinary universities with low quality, since academics are essentially a profession of respectability, ethical PROBLEMS come to the fore in academics who are not concerned about respectability".

In parallel with these views, some participants P21 said *"I think that the right of use does not belong to the researcher and that it is an easy way out*" and P32 said *"Simplicity. It is like eating food without labor"* and expressed that the use of artificial intelligence is laziness.

3.2. Privacy

Participants' responses on the issue of privacy regarding the use of artificial intelligence in academic articles and research differed. Some participants thought that artificial intelligence would not cause any problems related to confidentiality in academic research and article writing. P3 expressed his opinion on the subject as follows:

"I believe that the relevant data will remain confidential as a result of the necessary encryption. I have no doubt that it will be protected. However, it is not known where the existing technology will take us, so I have doubts that this technological progress will reach a point that will decipher artificial intelligence".

Parallel to this view, P2 said:

"In order to get useful answers, you need to talk about yourself and your purpose as detailed as possible. Therefore, I think they are not platforms that those who have privacy concerns can use. As in every programme/software/application, artificial intelligence tools also have privacy and security problems or will have them at some point in the future. Therefore, it is necessary to use them with this in mind".

P15 said *"I believe that the data produced by artificial intelligence does not contain personal data, so it does not pose a problem in terms of privacy. I do not have enough information about access control and storage of the data sought."* Also P25 said *"Information increases as it is shared"* and P30 said *"In general, it produces controlled content about personal data and protection barriers".* They expressed that they did not have any concerns about privacy.

One opinion on this issue is that people's perception of privacy has been broken due to the advancement of technology. In this line, P5 expressed:

> *"This issue is not open to much discussion. All states, deep structures, security units, rectorates, deanships, organizations such as YÖK already access all our data, control our emails and use them to maintain their own economic structures. I do not think that this will create a problem in the context of artificial intelligence".*

Similarly, P8 stated:

> "*We are gradually handing over all our data to big data. There is no way to prevent this. We are just delaying it a little. In this respect, we will continue to upload data by trying to hide personal data until people give all their information spontaneously".*

P13 stated that *"Unfortunately, I have passed the dimension of worrying now because I have given permission to access data more than necessary". Also* P32 said *"In these technological conditions, nothing remains hidden"*.

A dominant view of the participants on privacy was that the use of artificial intelligence in academic research was inconvenient. P10 stated that:

> *"It is definitely inconvenient to use personal data on any platform for any reason. Unfortunately, personal data are stored and have commodity value. There is even talk of data colonization today. For this reason, it is quite risky that every data has an economic value, especially the use of personal data for advertising and marketing purposes".*

Similarly P17 said *"It is inconvenient for artificial intelligence to access article data while writing an original article. It damages the originality of our article. When others use our data, it causes plagiarism"* and P19 said *"I think that it leaks information about privacy and protection of personal data, or that these data are monitored and recorded by someone".* The participants expressed their concerns about the privacy of artificial intelligence.

Another view of the participants on privacy is that it is necessary to develop mechanisms to control artificial intelligence in the protection of personal data, control of artificial intelligence access to data, storage and use of data. Similarly, P4 stated that:

> *"Steps should be taken as soon as possible to prevent violations of rights and victimization in this new field by determining laws and principles both in the scientific community and in other areas where artificial intelligence is used. For example, artificial intelligence will access the data of various studies on a subject and perform a meta-analysis. In this case, it must be ensured that the databases where the relevant data are stored and the original researcher must be contacted through these databases and permission or approval must be obtained. Or the researcher should share with the users which artificial intelligence programs are allowed access by a database to which they decide to upload their data. If such measures are not taken, negativities such as publishing in another journal or media with the data of a study in the publication process may arise".*

Furthermore, P20 expressed that:

> *"This is a systemic problem. Issues such as data privacy, protection of personal data and control of data access are issues that the developers of the relevant artificial intelligence tool need to adjust. In this regard, lawmakers have a duty to ensure that developers comply with the relevant rules".*

A different opinion on the subject is that artificial intelligence tools can overcome the privacy problem with various plug-ins. P31 expressed his opinions on the subject as follows:

"I do not have information about artificial intelligence's access to personal data within the legal framework. However, since special data is requested when using artificial intelligence, the answer is that they often do not have information on those issues. In other words, I think it may be possible to design the algorithm in a way to protect personal data. As a matter of fact, when we ask personal questions to Siri or ChatGPT, it avoids answering them. I think it is possible to act on the data that is currently accessible on the internet". Similarly, P23 said, *"They can use any kind of information they access. However, I think that an option should be offered to internet users here. Do you approve access by search engines or artificial intelligence, etc. A permission system can be created".*

A different view on confidentiality points to the ethical problem of the scientific world. P23 stated that:

"Some information may need to remain confidential in the digital world. There is private information. People may want to protect this private information. This is extremely natural. We care about the confidentiality of the information that we want to keep confidential in real life in digital environments. We want it to be shared only with the relevant institutions and persons. In the digital world, information can be copied, shared with others and spread very quickly. This process must be strictly controlled by privacy rights. In addition, people who produce information may have some conditions for access to the information they have produced. For example, paid membership, etc. such as. After all, there is a labour in the middle. In this direction, access conditions should be respected. I am in favour of open access. If possible, academically produced information should be made freely accessible to all relevant users free of charge. After the commercialization of academic information (patent, utility model, etc.), those who have intellectual property rights may of course have certain demands regarding access. Artificial intelligence is designed to access information in the digital world. Users do not know what the information is used for. This is a separate question mark. Not knowing the purpose for which this information is used may cause certain injustices for intellectual property owners. Artificial intelligence software utilizes open source information and receives a certain fee from its members, but does not pay any fee to the people whose information it uses. Such companies should pay the necessary fees to the persons, institutions, etc. whose information they use. In artificial intelligence applications, approvals should be obtained from users for the use of their information. It is unethical to violate intellectual property rights invisibly",

criticizes the fact that paid publications are not open access.

3.3. Accuracy

The opinion of some of the participants is that artificial intelligence used in academic research cannot produce accurate and up-to-date information. P11 stated that *"It is not accurate, it is not up-to-date. Texts using artificial intelligence are shallow and contain prejudice"*. Also P31 said:

"I generally see that it does not update the data very often. I would like to state that I do not trust artificial intelligence in terms of the accuracy of the data because I have witnessed that it has made mistakes many times".

One view is that artificial intelligence produces fabricated data on purpose. Related to the subject, P1 said, *"Research shows that it does not always provide accurate information and can also produce fabricated information. Therefore, it is absolutely necessary to check its accuracy."* and P26 said *"There may not be accurate information. They may give references to fabricated sources. It can make additions on its own. In this respect, it should be used in a controlled manner".*

In parallel to this, according to the participants, it is necessary to continue to look at the data produced by artificial intelligence with a critical eye in terms of accuracy. *"I think that artificial intelligence can manipulate data just like researchers are likely to manipulate their data. In this respect, scientific content produced by artificial intelligence should continue to be viewed critically."* (P4). Parallel to this, P22 said *"I believe that it will always need human control."* and P29 said *"I think that it should never be trusted, because there is a very large database. The researcher should always make sure of it"*. P29 pointed out the importance of the human factor with their opinions.

One of the participants' opinions about the accuracy of the data was that artificial intelligence can give up-to-date answers according to the subjects. P14 said *"It should not be trusted too much, but it is very impressive at giving ideas".* Also P15 stated that their opinions were positive as *"I find the data given by artificial intelligence highly accurate and up-to-date".* Participant P18 stated that the data provided by artificial intelligence are accurate, but there are some problems in translating them into Turkish:

> *"It contains mostly accurate data. However, I think there are problems in terms of harmonization with Turkish. I think it gives more logical answers to questions in English. Nevertheless, it is necessary to see the original sources it cites. But I have experienced that it can present up-to-date data. At this point, I can say that it is useful".*

Some participants thought that artificial intelligence can give accurate and up-to-date answers according to the topics. P27 said *"Artificial intelligence can give up-to-date answers according to the subjects. In fact, artificial intelligence also draws information from a database. The timeliness of this data is increasing day by day."* Similarly, P3 said, *"Artificial intelligence is an important issue in today's world. However, as far as I can see, it is used more actively in the fields of health sciences and science. For social sciences, I can say that I cannot see that it has created a visible change yet."*

One opinion about accuracy is that the accuracy of the results produced by artificial intelligence is directly related to the writing skills of the people who write the relevant commands. P5 stated that:

> *"I think that this is related to the academic background and qualification of the academician or researcher using artificial intelligence. I think that a person who has a master's degree and doctorate in the world's prestigious universities has the capacity to control all processes in his studies not for promotion but for contribution to science and humanity".*

and P6 said *"It results depending on the accuracy of the information given to it and processed."*

In terms of the data's accuracy, some participants stated that the sources used by artificial intelligence while producing information should be questioned. P8 mentioned that:

"A person who has the capacity to distinguish between right and wrong understands where the answer given by artificial intelligence may be fabricated, and investigates those parts. They also check what they give as a source. But how accurate are the sources themselves? An incorrect reference in a source was being transmitted unnoticed by others before artificial intelligence. There are also many things that people believe without questioning. It is necessary to develop critical thinking. Apart from that, for those who do not have critical thinking, recommendations can be made such as check the sources, run them through Turnitin". P13 said *"I think that artificial intelligence is not always reliable because of the possibility of drawing data from any site and the possibility that these sites may not be reliable sources. The current data source mentioned may not be reliable".* Furthermore, Participant P19 expressed that:

> *"Although some of the information provided by artificial intelligence is correct, there is also information that it provides incorrectly. Are the databases that provide information to artificial*

intelligence reliable, artificial intelligence also needs to update itself. If the internet data sources are equipped with accurate information, artificial intelligence will give realistic results in that direction".

The participants expressed the opinion that the accuracy of the data is related to the quality of the artificial intelligence used. While some artificial intelligence tools produce accurate and up-to-date information, there are problems with the accuracy of the data produced by artificial intelligence tools, most of which are free and open to access. P20 said *"Some artificial intelligence tools do not produce outputs suitable for use in the process of writing scientific publications, while others do. In this regard, users should conduct sufficient research and choose tools that can produce outputs suitable for their purposes. Moreover,* P23 stated:

"Artificial intelligence programmes produce up-to-date information according to their versions. Programmes also have commercial purposes. For this reason, it is required to pay a fee to access up-to-date information. When artificial intelligence accesses up-to-date information and makes analyses and syntheses, it can do good work in a serious sense and can become an assistant and partner for researchers. It can be a serious author. There are examples where artificial intelligence is shown as an author in research. In a university abroad, artificial intelligence is employed as a faculty member and the results are observed".

Similarly, P2 stated, "I do not think that free versions without internet connection provide accurate and reliable information. When I tried to confirm it a few times, I was sure *I could not trust it".* Also, P28 stated, *"You can access up-to-date data with ChatGPT 4o, while older versions do not. However, it may not be able to provide the latest sources. I did not have any problems in terms of accuracy. Educational Sciences data were generally accurate". Also* P30 said *"While the services that require membership are more successful, we can say that those that are in the trial process and use all data networks and do not support appropriate filtering do not contain 100% accurate and up-to-date information".*

4. Discussion & Conclusion

The issue of who owns the work produced by artificial intelligence highlights the need for a serious analysis of property rights. One conclusion of this study is that humans, not machines, are the owners of knowledge. It is not possible for artificial intelligence to claim ownership in line with the participants' views. The underlying reason for the participants to think in this way may be that the information produced by artificial intelligence does not have features such as openness, accessibility and abstraction level within the scope of information ethics. This result coincides with the studies conducted. To increase the development of artificial intelligence in knowledge production, it should have critical thinking and social responsibility (Evgenev, 2019). Participants' views on the ownership of knowledge can also be explained by the theory of Connectivism (Goldie, 2016). The knowledge possessed by artificial intelligence systems is formed thanks to the data and connections that people provide to these systems. It can be said that the information produced by humans and the information uploaded to the system directly affect the development and performance of artificial intelligence algorithms. In this context, the learning and information processing capacity of artificial intelligence can be explained as a reflection of the information that people have and share. Although this theory provides a helpful perspective from which teaching and learning can be better understood and managed using artificial intelligence, further development and experimental evidence is needed.

Participants are far from the idea that artificial intelligence will change the world, contrary to what is claimed, and that it can be an author. This may be because they do not know the capabilities

of artificial intelligence and have had various negative experiences. One of the most important conclusions that can be drawn from this study is that artificial intelligence can be a guide in academic research and article writing. Artificial intelligence can play an essential role in academic writing. Still, this role may be more about guiding rather than replacing an academic. The great conveniences provided by artificial intelligence in areas such as data analysis, literature review and automation of routine tasks can accelerate academic work and make it more efficient. However, human elements such as ethical responsibilities, critical thinking and creative problem-solving abilities are at the centre of academic studies and cannot be fully realized by artificial intelligence. As a result of this study, it can be said that artificial intelligence can participate in research as a mentor, a counsellor, and enable academics to be more efficient in more complex and human-specific tasks. The findings of similar studies coincide with this result, and it is stated that artificial intelligence can be used as a guide in research and will transform the coaching profession in the future (Ersoz, 2023; Graßmann & Schermuly, 2021). Regarding ethics, issues such as data confidentiality, prevention of bias and transparency should be considered when using artificial intelligence. In this way, collaboration between AI and academics can create a synergy that supports scientific progress and encourages human creativity.

The rapid development of artificial intelligence technologies has brought along a series of ethical concerns. One reason for the ethical concerns raised by artificial intelligence and the negative perception about the accuracy of artificial intelligence may be hidden in the diffusion of innovations theory. Artificial intelligence is developing and solving its problems day by day. The creative and unpredictable nature of artificial intelligence pushes the boundaries of existing ethical frameworks and creates profound effects on the social, economic and cultural structures of human societies. The rapid diffusion of innovations raises new questions about who controls and accesses information (Rogers, 2004). The perception towards emerging technologies goes through phases in artificial intelligence. One reason for the lack of privacy concerns may be that researchers support open science and innovation. Similar studies have shown that participants are open-minded and generally early adopters of new information and communication technologies (Lund et al., 2020). The open sharing and accessibility of knowledge contributes to accelerating scientific progress and fostering innovation, enabling access to a broader audience of students and researchers. Sharing knowledge creates more egalitarian access to knowledge by increasing access to knowledge by a wider community. On the other hand, artificial intelligence is met with fear and anxiety by the researchers who resist innovation. Academics who produce artefacts with commercial or financial value in their research may want to protect their knowledge and share it only under certain conditions. Conversely, due to the continuous advancement of technology, legal systems are insufficient regarding intellectual property rights related to artificial intelligence products and the preparation of appropriate laws (Gribincea, 2020). This view coincides with the sense of mental surrender experienced in the participants' minds, which is parallel to the speed of technological progress.

The field of philosophy of science aims to heed ethical values, to respect human nature, and to protect the fundamental values of human subjects and participants. An academic who does not respect the philosophy of science can find a way, regardless of the technology, to commit any number of ethical violations. Academic plagiarism, citation, and artificial intelligence issues are also important in this context. The majority of the participants think that artificial intelligence will pose an ethical problem in terms of ownership of knowledge. The current study emphasized that artificial intelligence can synthesize information from sources in the digital world, and it is important to respect intellectual property rights when using this information by referencing. Artificial intelligence provides convenience

at this point, but citing ethical values and the people who contribute to the production of knowledge is indispensable in terms of academic honesty.

In parallel with the participants' mentioning the necessity of determining international criteria in the findings, guidelines on how artificial intelligence should be used are published by state levels, institutions, academic publishing houses (YÖK, 2024). Studies show that artificial intelligence will soon be validated by methods such as debugging methods, innovative software architectures, and cyber physical systems. Although artificial intelligence technologies have recently entered our lives in the academic field, information technologies have been used for many years. In line with the participants' views, existing technologies were already an essential point in the lives of academics in terms of privacy. In parallel with this situation, people's perceptions of privacy have been broken. This situation may also be a reason for the increase in information pollution and fake news in parallel with the understanding of the post-truth post-truth era. In addition, a person who wants to violate ethics can find a way regardless of the technology. Similarly, Ashok et al. (2022) identified 14 ethical implications of artificial intelligence. They stated that the most discussed implications of intelligibility, accountability, fairness and autonomy (under the cognitive domain) and privacy (under the information domain) were the most discussed results.

However, a new and different argument for using AI in the academic field is the opportunities these technologies can provide in education and research. Artificial intelligence can enable researchers to conduct more detailed, faster and more comprehensive literature reviews, academic counselling, academic language and spelling errors, data analyses. In education, AI-supported systems can be tailored to students' learning speeds and styles, increasing equality in academia and making research processes more efficient. Artificial intelligence can pave the way for new discoveries and accelerate scientific progress by analyzing large data sets.

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Geniş Özet

Giriş

Yapay zekâ, derin öğrenme, doğal dil işleme gibi teknikler sayesinde bilimsel makale yazma sürecinde etkileşimli bir öğrenme ortamı sunarak rehberlik etmekte, akademik yazıma katkı sağlamaktadır. Ancak yapay zekânın sağladığı bu katkılar bilginin sahipliği, doğruluğu ve gizliliği konularında çeşitli endişeleri de beraberinde getirmektedir.

Yapay zekâ tarafından üretilen ve düzenlenen metinlerin kaynak belirtilmeden sunulması ve kullanılması intihal sorunlarına yol açabilir. Bu durum akademik çalışmanın özgün olmasını zedeleyerek akademik dürüstlük ilkesini ihlal etmektedir. Akademik metinlerde yazarlık hakkı konusundaki geleneksel anlayış ve etik standartlar, yapay zekâ ile yeniden değerlendirmeyi ve bu konuda akademik araştırmaların yapılmasını gerektirmektedir. Akademik çalışmalarda yazar olarak kabul edilmek belirli bir düzeyde entelektüel katkıyı gerektirmektedir. Yapay zekâ tarafından oluşturulan metinlerin, yapılan analizlerin, elde edilen bulguların, hangi ölçüde kimin katkısı olarak kabul edileceği henüz tartışılmaktadır (Gribincea, 2020). Uluslararası birçok akademik dergi ve kurum, yazarlık kriterleri belirlemiştir. Bu kriterler, araştırmanın tasarımı, verilerin analizi, bulguların elde edilmesi ve sonuçların yorumlanması aşamalarında yazarların katkı sağlaması gerektiğini ifade etmektedir. Yapay zekânın bu süreçlerde nasıl, ne kadar etkili olduğu konusunda netlik sağlanmalıdır. Nitekim yayınevleri tarafından makale yükleme sürecinin başında, yapay zekânın hangi kısımlarda ne kadar katkı sağladığının açıklanması zorunlu tutulmaya başlanmıştır. Yapay zekâ tarafından üretilen içeriklerin telif hakkının, fikir mülkiyetinin kime ait olacağı konusu için akademik araştırmalara ihtiyaç bulunmaktadır.

Araştırma ve makale yazımında yapay zekânın kullanımı, çeşitli boyutları olan bir araştırma alanıdır. Yapay zekâ sistemlerinin geliştirilmesi ve uygulanması, adalet, gizlilik, şeffaflık ve öznellik gibi karmaşık etik zorluklar ortaya koymaktadır (Zhang & Andwari, 2022). Yapay zekâ etiğinin evrimi, yapay zekâya insan benzeri özellikler kazandırmaktan, insan merkezli yapay zekâ sistemlerinin geliştirilmesine vurgu yapmaya kadar çeşitli aşamalardan geçmiştir. Bilimsel gelişmenin post-klasik aşaması ve alternatif etik-teorik yaklaşımların dahil edilmesi göz önünde bulundurularak yapay zekâ sistemleri için etik çerçeveler oluşturma gereksinimi bulunmaktadır (Saveliev vd., 2021). Evgenev (2019) tarafından yapılan çalışmaya göre yapay zekanın etkili bir şekilde bilgi üretebilmesi için, programcıların katılımı olmadan bilgi taşıyıcılarının bilgi tabanları oluşturmasına olanak tanıyan yüksek verimli bir teknoloji gereklidir. Yapay zekâ etiği üzerine tartışmalar ağırlıklı olarak batı perspektifleriyle şekillendirilmiş olsa da yapay zekâ etiği araştırmaları ve uygulamalarına yeni bakış açıları sağlamak için teorik yaklaşımların dahil edilmesi çağrısı vardır. Bu bağlamda ortaya çıkan yeni kuramlar bulunmaktadır. Bağlantıcılık Teorisi, öğrenmenin bireylerin çevreleriyle etkileşimleri ve bu etkileşimler sonucunda oluştuğunu vurgulamaktadır (Goldie, 2016). Bu teoriye göre bilgi ağlar üzerindedir. Siemens insanların internet ve sosyal ağlar aracılığıyla bilgi öğrenme ve paylaşma süreçlerini açıklamayı amaçlamaktadır. Yapay zekâ etiğinin çeşitli ve değişken doğası göz önüne alındığında, alanın, yapay zekâ geliştirme ve uygulamasının etik sonuçlarını ele almak için felsefi, metodolojik ve teknik hususları bir araya getiren multidisipliner bir yaklaşıma ihtiyaç duyduğu açıktır.

Bu çalışmanın amacı, araştırmacıların akademik makale yazım sürecinde yapay zekâ kullanımı hakkındaki görüşlerini incelemektir. Araştırma sorusu şu şekilde belirlenmiştir: "*Akademik yazım sırasında yapay zekâ ile ilgili etik ikilemler konusunda araştırmacıların görüşleri nelerdir?*"

Yöntem

Bu çalışmada, eğitsel, sosyo-kültürel ve örgütsel durumlar gibi birçok durumu öğrenmeye olanak tanıyan durum çalışması yaklaşımı kullanılmıştır (Yin, 2009). Durum çalışmalarında, araştırmanın geçerliliğini sağlamak için incelenecek durumun tanımlanması ve diğer konuların araştırma kapsamı dışında bırakılması önemlidir. Katılımcıların seçiminde maksimum çeşitleme yöntemi tercih edilmiştir. Araştırmalarında yapay zekâyı kullanan ve kullanmayan akademisyenler ve araştırmacılar benzer sayıda seçilmeye çalışılmıştır. Çalışmada, Mason tarafından bilişim etiği bağlamında önerilen fikir mülkiyeti, doğruluk ve gizlilik ilkeleri göz önünde bulundurularak açık uçlu sorular hazırlanmıştır. Elektronik olarak web üzerinde hazırlanan açık uçlu sorular, katılımcılara e-posta yoluyla gönderilmiştir. Veriler, 2023-2024 akademik yılı bahar döneminde toplanmıştır. Katılımcılardan soruları uzun paragraflar şeklinde yanıtlamaları istenmiş ve bu hedef kısmen gerçekleştirilmiştir. Veri toplama araçlarının uygulanmasından önce Etik Kurul'dan gerekli izinler alınmıştır. Açık uçlu soruların analizinde betimsel analiz yöntemi tercih edilmiştir. Araştırmacılar tarafından, soruların anlaşılırlığını artırmak için katılımcılarla yeni görüşmeler gerçekleştirilmiş ve üye kontrolü sağlanmıştır.

Bulgular

Yapay zekânın akademik makaleler ve araştırmalarda kullanımı ile ilgili bilgi sahipliği konusunda katılımcıların görüşleri farklılık göstermektedir. Araştırmaya katılan akademisyen ve araştırmacıların bir bölümü, bilginin sahibinin zaten kendilerinin olduğunu dolayısıyla kullanım haklarının da kendilerine ait olduğunu ifade etmektedirler. Bu doğrultuda K3 adlı katılımcı görüşünü “Söz konusu yapay zekâ üzerinden yaratılan bir fikrin sahibi araştırmacının ta kendisidir” ve K11 adlı katılımcı görüşünü “Hangi bilgi? Bizim ellerimizle oluşturup internet ortamına yüklediğimiz bilgi mi? Elbette sahibi biziz ve kullanım hakkı da bizim.” şeklinde ifade etmişlerdir. Katılımcıların büyük bir çoğunluğu yapay zekânın bilginin sahipliği açısından etik bir sorun oluşturacağını düşünmektedir. K13 konuyla ilgili düşüncelerini “kaynak araştırmasında kullanılmasında sorun olduğunu düşünmüyorum ancak oluşturduğu bilgiyi direkt almanın aslında yapay zekâdan yapılan bir intihal olduğu görüşündeyim” şeklinde ifade etmiştir. Bir görüş hangi teknoloji olursa olsun etik problemlerin araştırmacıların niyetlerinde saklı olduğu yönündedir. Katılımcıların yapay zekânın akademik makale ve araştırmalarda kullanımı ile ilgili gizlilik konusunda verdiği yanıtlar farklılaşmaktadır.

Katılımcıların bir bölümü yapay zekânın akademik araştırma ve makale yazma konusunda gizlilik ile ilgili herhangi bir sorun oluşturmayacağını düşünmektedir. Bu konu hakkındaki bir görüş teknolojinin ilerlemesi konusunda insanların gizlilik algısının kırıldığı yönündedir. Gizlilik konusunda araştırmacılara ait bir hâkim görüş yapay zekânın akademik araştırmalarda kullanımının kesinlikle sakıncalı olduğu yönündedir. Gizlilik konusunda farklı bir görüş bilim dünyasının etik sorununa işaret etmektedir. Katılımcıların bir bölümünün görüşü, akademik araştırmalarda kullanılan yapay zekânın doğru ve güncel bilgi üretemediği yönündedir. Buna paralel katılımcıların görüşüne göre yapay zekânın ürettiği verilerin doğruluğu açısından eleştirel bir gözle bakılmaya devam edilmesi gereklidir. Katılımcıların verilerin doğruluğu ile ilgili bir görüşü yapay zekânın konulara göre güncel cevaplar verebildiği yönündedir. Doğruluk hakkında bir görüş yapay zekânın ürettiği sonuçların doğruluğunun, ilgili komutları yazan kişilerin yazdıkları ile doğrudan ilişkili olduğu yönündedir. Katılımcılar tarafından dile getirilen bir görüş verilerin doğru olmasının, kullanılan yapay zekânın kalitesi ile ilgili olduğu yönündedir. Bazı yapay zekâ araçları doğru ve güncel bilgi üretirken çoğu ücretsiz ve erişime açık olan yapay zekâ araçlarının ürettiği verilerin doğruluğu konusunda sorunlar bulunmaktadır.

Tartışma ve Sonuç

Bilginin sahibi kimdir? Bu soru, yapay zekâ tarafından üretilen sanat eserlerinin kime ait olduğu sorununu gündeme getirmekte ve mülkiyet haklarının ciddi bir şekilde analiz edilmesi ihtiyacını vurgulamaktadır. Bu çalışmanın bir sonucu, bilginin sahibinin makineler değil, insanlar olduğudur. Yapay zekanın bir sahiplik iddiasında bulunması katılımcı görüşleri doğrultusunda mümkün değildir. Katılımcıların bu şekilde düşünme sebeplerinin altında yatan neden, yapay zekâ tarafından üretilen bilginin bilişim etiği kapsamında açıklık, erişebilirlik, soyutlama seviyesi gibi özelliklere sahip olmaması olabilir. Yapılan çalışmalar ile bu sonuç örtüşmektedir. Yapay zekanın bilgi üretimindeki gelişiminin artması için eleştirel düşünme ve sosyal sorumluluk duygularına sahip olması gerekmektedir (Evgenev, 2019). Katılımcıların bilginin sahipliği konusundaki görüşleri Bağlantıcılık teorisi ile de açıklanabilir (Goldie, 2016). Yapay zekâ sistemlerinin sahip olduğu bilgi, insanların bu sistemlere sağladığı veriler ve bağlantılar sayesinde oluşmaktadır. İnsanların ürettiği bilgilerin, sisteme yüklediği bilgilerin, yapay zekâ algoritmalarının gelişimini ve performansını doğrudan etkilediği söylenebilir. Bu bağlamda, yapay zekanın öğrenme ve bilgi işleme kapasitesi, insanların sahip olduğu ve paylaştığı bilgilerin bir yansıması olarak açıklanabilir. Bu kuram, yapay zekâ kullanılarak öğretim ve öğrenmenin daha iyi anlaşılıp yönetilebileceği yararlı bir bakış açısı sağlasa da daha fazla geliştirme ve deneysel kanıta ihtiyaç bulunmaktadır.

Katılımcılar yapay zekânın iddia edilenin aksine dünyayı değiştireceği, bir yazar olabileceği düşüncesine uzaktırlar. Bu sonuç, katılımcıların yapay zekânın yeteneklerini bilmemelerinden, daha önceden çeşitli olumsuz deneyimler yaşamalarından kaynaklanıyor olabilir. Bu çalışmadan çıkarılabilecek en önemli sonuçlardan biri, yapay zekânın akademik araştırma ve makale yazımında bir rehber olabileceği yönündedir. Yapay zekâ, akademik yazımda önemli bir rol oynayabilir, ancak bu rol, bir akademisyenin yerini almaktan çok, onlara rehberlik etmeye yönelik olabilir. Yapay zekânın veri analizi, literatür taraması ve rutin görevlerin otomasyonu gibi alanlarda sağladığı büyük kolaylıklar, akademik çalışmaları hızlandırabilir ve daha verimli hale getirebilir. Ancak etik sorumluluklar, eleştirel düşünme ve yaratıcı problem çözme yetenekleri gibi insan unsurları, akademik çalışmaların merkezinde yer alır ve yapay zekâ tarafından tam anlamıyla gerçekleştirilemez. Bu çalışmanın bir sonucu olarak, yapay zekânın araştırmalarda bir mentor, danışman olarak yer alabileceği, akademisyenlerin daha karmaşık ve insana özgü görevlerde daha verimli olmasını sağlayabileceği söylenebilir. Benzer araştırmaların bulguları bu sonuç ile örtüşmekte, yapay zekânın araştırmalarda bir rehber olarak yer alabileceği, gelecekte koçluk mesleğini dönüştüreceği dile getirilmektedir (Ersoz, 2023; Graßmann & Schermuly, 2021). Etik açıdan, yapay zekânın kullanımı sırasında veri gizliliği, önyargıların önlenmesi ve şeffaflık gibi konulara özen gösterilmelidir. Bu şekilde, yapay zekâ ve akademisyenler arasındaki iş birliği, bilimsel ilerlemeyi destekleyen ve insan yaratıcılığını teşvik eden bir sinerji yaratabilir.

Yapay zekâ teknolojilerinin hızla gelişmesi, bir dizi etik endişeyi beraberinde getirmiştir. Yapay zekânın oluşturduğu etik endişenin, yapay zekânın doğruluğu konusunda olan olumsuz algının bir sebebi, yeniliklerin yayılımı kuramında saklı olabilir. Yapay zekâ gelişmekte ve her geçen gün problemlerini çözmektedir. Yapay zekânın yaratıcı ve öngörülemez doğası, mevcut etik çerçevelerin sınırlarını zorlamakta ve insan toplumlarının sosyal, ekonomik ve kültürel yapılarında derin etkiler yaratmaktadır. Yeniliklerin hızlı bir şekilde yayılması, bilginin kontrolü ve erişiminin kimler tarafından sağlandığı konularında yeni sorular ortaya çıkarmaktadır (Rogers, 2004). Yeni çıkan teknolojilere karşı olan algı yapay zekâ içinde evrelerden geçmektedir. Gizlilik endişelerinin olmamasının bir nedeni, araştırmacıların açık bilim ve yenilikleri desteklemeleri olabilir. Benzer çalışmalarda katılımcılar açık görüşlü olup, genellikle yeni bilgi ve iletişim teknolojilerinin erken benimseyicileri olduklarını göstermiştir (Lund vd., 2020). Bilginin açıkça paylaşılması ve erişilebilir olması, bilimsel ilerlemenin hızlanmasına ve inovasyonun teşvik edilmesine katkı sağlar, daha geniş bir öğrenci ve araştırmacı kitlesi

ile erişimi sağlar. Bilginin paylaşılması, geniş bir topluluğun bilgiye erişimini artırarak daha adil ve eşitlikçi bir bilgiye erişim ortamı oluşturur. Diğer taraftan yeniliğe karşı olan araştırmacı kitle tarafından, yapay zekâ korku ve endişe ile karşılanmaktadır. Yaptıkları araştırmalarda ticari veya mali değeri olan üretimler gerçekleştiren akademisyenler, bilgilerini korumak ve yalnızca belirli koşullarda paylaşmak isteyebilirler. Diğer taraftan teknolojinin sürekli ilerlemesi sebebiyle yasal sistemler, yapay zekâ ürünlerine ilişkin fikri mülkiyet hakları, uygun yasaların hazırlanması konusunda yetersiz kalmaktadır (Gribincea, 2020). Bu görüş teknolojinin ilerleme hızına paralel, katılımcıların zihinlerinde yaşanan zihinsel teslimiyet duygusu ile örtüşmektedir.

Yayın Etiği Beyanı

Bu araştırma için gerekli etik kurul izni, Bursa Uludağ Üniversitesi Sosyal ve Beşeri Bilimler Bilimsel Araştırma ve Yayın Etiği Kurulu tarafından 22 Mart 2024 tarihinde 10 sayılı kararla alınmıştır. Bu araştırmanın planlanmasından, uygulanmasına, verilerin toplanmasından, verilerin analizine kadar olan tüm süreçte "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması belirtilen tüm kurallara uyulmuştur. Bu çalışma herhangi başka bir akademik yayın ortamına değerlendirme için gönderilmemiştir.

Araştırmacıların Katkı Oranı Beyanı

Bu çalışma, araştırmacıların her birinin eşit ölçüde katkı sağladığı bir iş birliği ürünüdür.

Çatışma Beyanı

Araştırmanın yazarları olarak herhangi bir çıkar/çatışma beyanımız olmadığını ifade ederiz.