



Mapping Pivotal Features and Proposed Theoretical Model: Artificial Intelligence in Social Science Discipline

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Abstract . Political viewpoints on artificial intelligence, particularly in countries adopting A.I. The technical view recognizes the importance of information and communication technology as the driving force behind the times we live in. Research conducted from the point of view of public administration examines the importance of public policy management in the context of public services and local government agencies that utilize artificial intelligence. The concept of "Mapping Significant Features and Proposed Theoretical Models: Artificial Intelligence in Social Sciences" is still rare for scholars to research. What are some of the most significant concerns or questions researchers have raised in their study of artificial intelligence? In the realm of governance, what are the comprehensive aspects of the impact of artificial intelligence? By conducting a literature analysis of data-driven journal papers on social media and government that have been published in the Scopus database, this investigation seeks to refine critical concepts around artificial intelligence. This study provides an overarching theoretical model that suggests using NVivo 12 Plus as the primary analytical tool. This model is built on five statements. Government efforts to influence many aspects of artificial intelligence. The findings of this study provide a new theoretical addition to the notion of artificial intelligence by investigating the relationship between other important conceptual ideas. This study also offers several valuable recommendations, namely as follows: (1) Expertise in artificial intelligence that can be applied in government administration. (2) By using artificial intelligence, the government can identify its behavior when selecting policies and analyze the effectiveness of its policies

Keywords: Artificial Intelligence, Social Science, Mapping pivotal features

1 INTRODUCTION

Artificial intelligence (AI) refers to computers that are intelligent and capable of thinking for themselves. Today, artificial intelligence (AI) promises significant technological advances that simulate human intelligence(1). It is considered machine intelligence related to human cognitive processes such as making decisions and solving problems.

Gain knowledge. The term artificial intelligence (AI) was first coined in 1955 by Professor J. McCarthy. 1956 was the year Dartmouth hosted the first fake intelligence conference. Provide evidence that this development is indeed occurring. It is explained that artificial intelligence (AI) is a system of intelligent agents that takes action to realize its potential.

There has been tremendous growth in the literature discussing democratic governance from various perspectives. For example, from a political perspective, scholars discuss the relationship between Artificial Intelligence and the state, society, and democracy. Others identify ICT, geographic information systems, and big data regarding Artificial Intelligence from a technological perspective. From a public administration perspective, scholars view the importance of general management, administration, public policy, and local government in using artificial intelligence. Apart from that, studies on Artificial Intelligence in Indonesia relate to political life, regional development, and technological developments.(2)And let's say the A.I. responds. Dancing around 'autonomy' in the A.I./human encounter.(3)assume that in modern democratic life, Artificial Intelligence fosters intelligent behavior (4) and that Artificial Intelligence can improve public services.(5)proposes an artificial intelligence model to support government performance.

However, scholars very rarely make thought maps regarding the artificial intelligence literature.(6)only discusses AI-Based Diagnostic Scoring Systems: Integrated with Knowledge Maps in MOOCs.(7)trying to build artificial intelligence based on modernist and interpretive social sciences.(8), Artificial intelligence (A.I.) in the dental curriculum: Ethics and responsible integration.

This article attempts to fill this gap and understand how social science scholars view artificial intelligence. This research addresses the following questions: (1) what are the main issues of Artificial Intelligence in social science journals? (2) What are these central issues' theoretical and practical contributions? This research conducted a systematic literature review on artificial intelligence in the social sciences to answer these questions.

2 METHOD

The Scopus database identifies all previously published journal articles on Artificial Intelligence in the social sciences. All articles from previous years, from 2021 to 2023, are in this archive. This study took the entire sample from all publication years to reduce bias from the small sample size. Therefore, this study obtained a representative and reliable model.(9)There are five steps to conducting a systematic literature review: (1) planning a topic and formulating it; (2) literature search; (3) data collection and assessment; (4) analyzing and interpreting data; and (5) presenting findings and suggest future research. This research uses the Scopus database to obtain articles. In the database, the search settings are: Title = Artificial Intelligence; Access type = open access and other; Year = from earliest available date to 2023; Author name = all; Field of study = social sciences; Document type = article; Publication stage = final; Source

title = all social science journals; Keywords = Artificial Intelligence; Country/region = all countries; Source type = journal; and Language = English. This research produced 196 articles. in The social sciences.

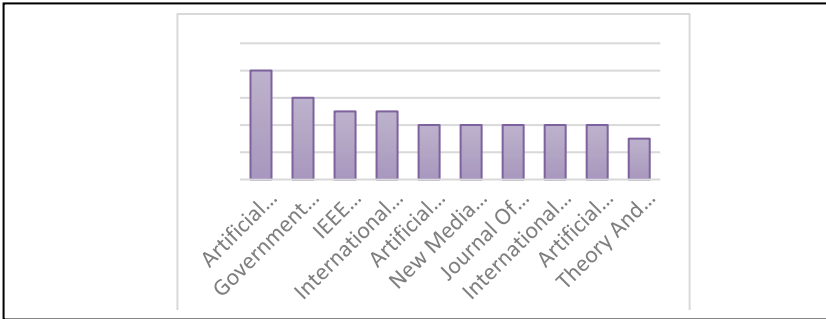


Fig. 1. Analyzed Journal Articles

Source: Scopus Database (2023)

This research uses the NVivo 12 Plus software application to analyze, visualize, and categorize data from journal articles. NVivo is helpful as an analysis program that helps index textual document elements and searches for words and phrases in the data(3). This research applies NVivo to index data components of journal articles by searching for words related to democratic government.

3 Results and Discussion

This section presents a description and analysis of the findings. The results include the year of publication, country of study, and journal-title; the analysis of the findings contains the main issues of Artificial Intelligence: public issues, social issues, information issues, policy issues, and digital issues.

As shown in Figure 1, current trends show that the number of publications related to artificial intelligence is gradually increasing. Figure 1 also shows that the number of academic investigations into artificial intelligence has maintained significantly over the past three years.

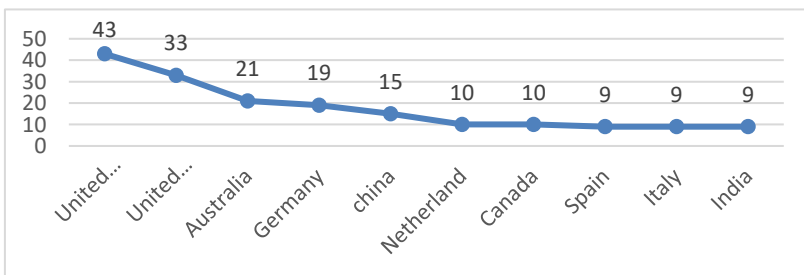


Fig. 2. Identification of Country by Number of Articles Source: Scopus Database (2022)

If the document is identified through country analysis, Figure 2 shows this. Scholars analyze the theme of artificial intelligence spread in almost every country. Overall, several countries were highlighted. Overall, there are countries highlighted in this research, such as the United Kingdom with 43 documents, followed by the United States with 33 papers. These two countries were followed by eight other countries: Australia with 21 articles, Germany with 19 documents, China with ten documents, the Netherlands with 10 papers, Canada with ten copies, Spain with nine records, Italy with nine articles, and India with nine pieces. However, it is unsurprising that the United States produces articles in large quantities.

Main Artificial Intelligence Issues

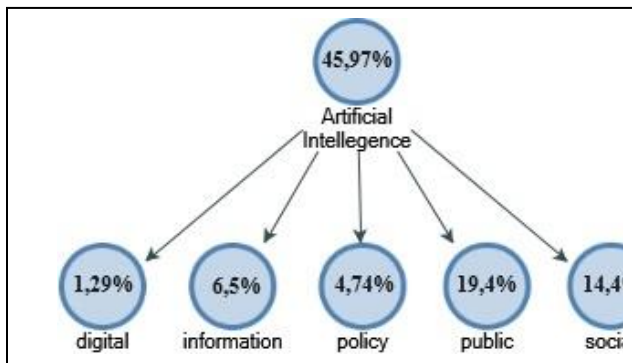


Fig. 3. Main Artificial Intelligence Issues

Source: Analysis using Nvivo 12 Plus (2023)

This research provides an overview of the most significant artificial intelligence and artificial intelligence issues discussed in recent publications in the field of social sciences. These issues have been raised in recent discussions in various social science journals.

Figure 3 focuses on nodes in a network, while connections refer to the relationships between nodes. The figure presents the proportion of issues that frequently appear together as frequencies. Figure 3 shows that the terms "Public" (19.4%), "social" (14.04%), "information" (6.5%), "police" (4.74%%), and "Digital" (1.29%) often appear together with social media and government.

Table 1. THE RELATIONSHIP OF ARTIFICIAL INTELLIGENCE TO THE MAIN CONTENT

Code A	Code B	Jaccard's coefficient
Artificial Intelligence	Public	0.978073
Artificial Intelligence	social	0.972327
Artificial Intelligence	policy	0.950657
Artificial Intelligence	Information	0.921738
Artificial Intelligence	Digital	0.923234

Source:

Using Nvivo 12 Plus (2023)

Analysis

The validity of the five themes is obtained from the Jaccard coefficient resulting from Nvivo 12 Plus processing through the import 196 articles stage and then autocoding. Each vital part has a close relationship with its parent through social media and the government. Hierarchical diagram for classifying cluster analysis, which gives rise to Jaccard coefficients. The Jaccard coefficient indicates that these numbers are significantly related, and select the Jaccard coefficient menu from the cluster analysis menu.

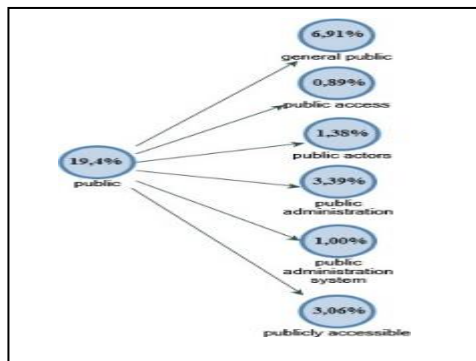


Fig. 4. Public Issues of Artificial Intelligence issues

Source: Analysis Using Nvivo 12 Plus (2023)

The Public issue in Figure 4 shows the highest to lowest percentage of co-occurrence frequencies. Public problems are closely related to General Public (6.91%), Public Access (0.89%), Public Actors (1.38%), Public Administration (3.39%), Public Administration System (1.00%), and publicly accessible (3.06%).

Artificial intelligence will spur innovation and create opportunities for individuals and society, just as the Internet has given rise to new businesses such as Google and new forms of communication such as blogs and social networks. Intelligent machines, experts predict, will one day guide society to meet public needs. Accessibility is one of its primary goals for the general public. In addition, they also anticipate that science and technology pioneers in both the corporate and government sectors, as well as the general public, will speculate about artificial intelligence. Research(10) explains Public access refers to various aspects of daily life. In state life, the government provides multiple public access to society's needs. This can start with access in the form of legislation or other services designed to meet general needs in various fields.

Proportion one: Public issues are essential for building artificial intelligence in terms of the public, Publicly accessible.

Social Issues in Figure 5 shows, with the percentage level of co-occurrence from highest to lowest that social problems are closely related to Social Analysts (2.13%), Social Aspects (1.96%), social action (0.96%), social activity (0.69%), and social aptitude (0.46%),

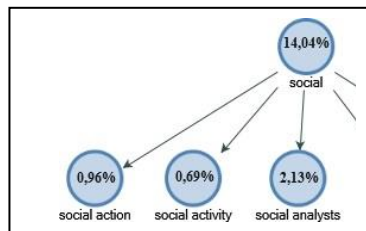


Fig. 5. Social Issues of Artificial Intelligence Issues

Source: Analysis Using Nvivo 12 Plus (2023)

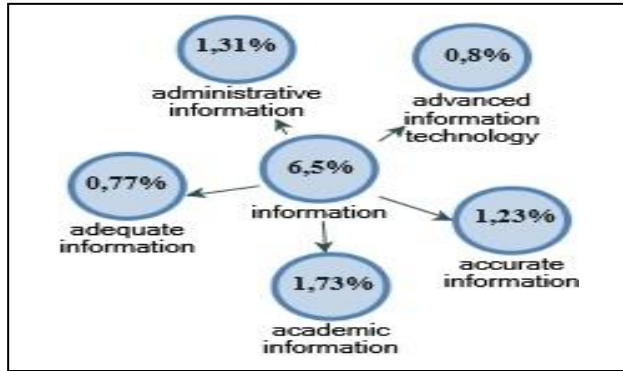
Experts identify that Social Analysts, Social Aspects, social action, social activity, and social aptitude greatly influence the use of artificial intelligence. In this era of technological developments over the latest developments in AI, let us return to the fundamental question of what artificial intelligence means [11]. It describes a vague concept, considering that neither AI nor social is worthy of having a widely accepted definition. Several recent efforts are non-profit and try to define Artificial Intelligence based on realized or potential social impact. However, there has yet to be a consensus regarding this definition. One could argue that "social impact" is too exclusive and inclusive: much Artificial Intelligence research has not (yet) achieved real social impact, and A.I. research with social impact will probably not be successful.

Proportion two: Artificial intelligence is closely related to social movements. You must pay attention to Social Analysts and Social Aspects to improve this.

The Information issues in Figure 6 show the percentage level of co-occurrence from highest to lowest, and the importance of information is closely related to Academic

Information (1.73%), Administrative Information (1.31%), Accurate Information (1.23%), Adequate Information (0.77%), and advanced information technology (0.05%)

Fig. 6. Information Issues of Artificial Intelligence issues



Source: Analysis Using Nvivo 12 Plus (2023)

Experts argue that the importance of information is closely related to Academic Information, Administrative Information, Accurate Information, Adequate Information, and advanced information technology. Artificial intelligence in information matters is vital to accessing information that has been received and information that can be accessed to obtain good information(12–14). In this case, the use of digital technology seems to expand the scope of supporting actors, and together with the occurrence of other phenomena related to supporting actors, this appears to have an impact on the way the government organizes itself as the leading supporter(15).

The need for economic and social progress drives many countries' decisions to participate in government and government information and communications technology reform(16–19). East African countries have been urged to focus on the role of information technology in improving the quality of public services due to the significant impact information, and communications technology has had on the world. According to(12), the use of information and communication technology, sometimes also called ICT, is very important in every aspect of national life, including politics, the economy, the growth of social and cultural institutions, and even individual forms of life. Relax. According to(20), this prominent position significantly influences how individuals interact with each other in terms of communication, access to information, and even how they spend their time. They concluded that additional needs needed to be met for information and communications technology (ICT) to be successful(20–23). These criteria include integrating information and communications technology with other applications, such as those used in the service sector, as well as investment and strategic leadership on the part of the government, as well as the intensification of the review and continuation of initiatives aimed at reform (24). Building the government's capacity and capability is essential because having resources without knowing how to use them efficiently is wasteful and wasteful spending(25). Information and

communication technology (ICT) is vital in disseminating information and educational purposes (26).

Proportion three: Academic, Administrative, and Accurate Information for good artificial intelligence.

Policy issues in Figure 7 show, with the percentage level of co-occurrence from highest to lowest, that public topics are closely related to Adopting a privacy policy (1.04%), adopting an approach (0.56%), a favorable policy environment (0.56%), actual policy (0.37%) and climate policy (0.26%).

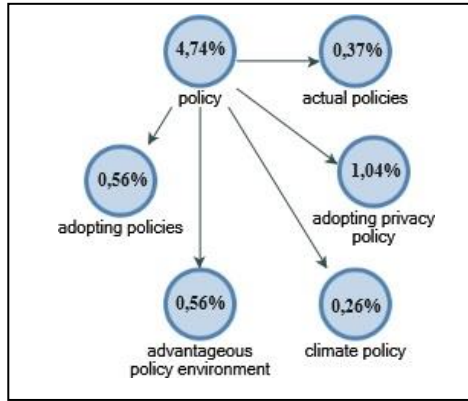


Fig. 7. Policy Issues of Artificial Intelligence issues

Source: Analysis Using Nvivo 12 Plus (2023)

According to research by several academics, the main elements in forming social media and government are policy making, policy steps, and policy materials. Policymakers with good material policies can assess the influence of these policies on social media and the government, especially in terms of social media use(20). This is very important when using artificial intelligence. People increasingly turn to social networking sites to start conversations with the government. This is a practice that is becoming more common. In the context of the public sector(27), artificial intelligence is a technology that helps public institutions facilitate increased levels of citizen engagement. Increased citizen engagement and collaborative production are possible as more governments utilize social media networks. And the use of various technological tools that make crowdsourcing more accessible. Using social media platforms can lead to expanding the number of government agencies(28). Accountability and improvement in policy formulation and organizational management, in addition to providing government services and disseminating information. Because social media is a decentralized network that relies on user-generated standards for its communication architecture, the country must participate in initiatives that are transparent, balanced, and beneficial in their handling. Possible response of sadness or anger from the general public Additionally, it draws attention to the fact that the level of information and communications technology (ICT) expertise possessed by the target demographic is an absolute prerequisite for utilizing social

media services provided by the government on the importance of educating the general public about various forms of media(29). Literacy among citizens about the media in today's era is full of constant and social changes. There is no way to separate the media and the government (30). It is essential to make payments to continue. Focuses on policy formulation and implementation of policy initiatives (31).

Proportion four: artificial intelligence in this era is significant. To advance this, paying attention to Adopting a privacy policy is necessary.

The digital issue in Figure 8 shows the percentage frequency of co-occurrences from highest to lowest; digital problems are closely related to digital advancement (0.45%), digital anti-corruption features (0.35%), digital access (0.24%), digital architecture framework (0.16%), different digitalization technology (0.09%),

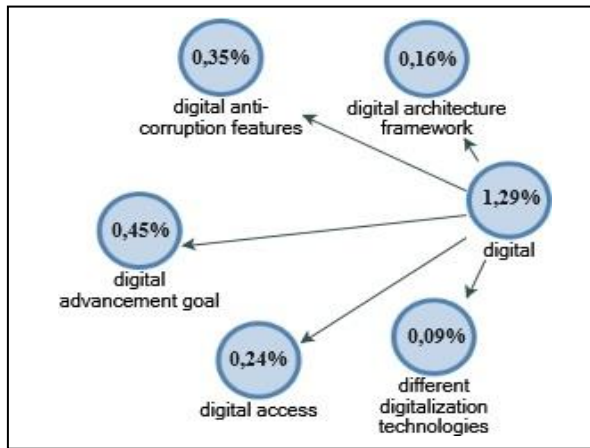


Fig. 8. Digital Issues of Artificial Intelligence issues

Source: Analysis Using Nvivo 12 Plus (2023)

Researchers believe there is a link between artificial intelligence issues and how people behave online. According to (32), digital behavior involves rules or processes of electronic behavior, and the individual must accept responsibility for himself in the digital environment to set specific standards for good digital behavior, values , and conduct. Besides that, (33) argues that good digital behavior includes rules or procedures for ethical behavior in the workplace. When working with digital technology, it adheres to several standards, including digital etiquette, access or availability, digital commerce, digital communication, digital literacy, digital etiquette or ethics, digital law, digital rights, and obligations. , and digital literacy (34). The "technologies of freedom" approach is contrasted with the "technologies of repression" approach by those who argue that digital media platforms encourage dictatorship. Authoritarianism weakens when digital media is used. This is true regardless of whether one approaches the topic from a Western or Eastern viewpoint (35). Based on the findings of this research (10), high rankings do not necessarily mean a high amount of digital authority on Twitter. This is one of the main conclusions of our investigation.

Proportion five: Digital issues are an essential element for building Artificial intelligence, digital advancement, digital anti-corruption features, digital access,

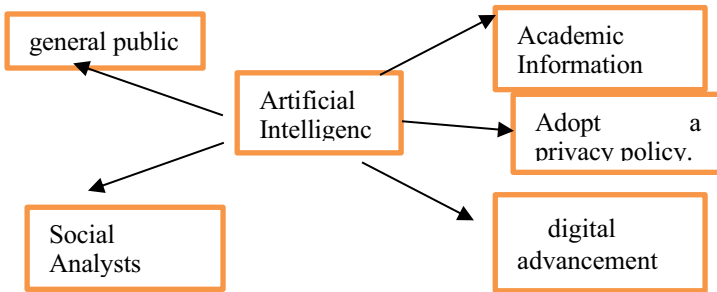


Fig. 9. A Comprehensively Proposed Theoretical Model Source: Processed by Authors (2023)

Figure 9 is a proposed comprehensive theoretical model which is derived from the first to the fifth postulate based on the relevance of artificial intelligence issues so that they can become new models, such as general public, Social Analysts, Academic Information, Adopting digital advancement policies which are influenced by artificial intelligence. In turn, this model can be used in artificial intelligence research.

4 Conclusion

Many scholars working in the field of social sciences have published articles on the topic of Artificial Intelligence. To understand the current state of assessing artificial intelligence research, looking back at some previously published articles on artificial intelligence is helpful. This research analyzes 196 journal articles contained in the Scopus database. Based on the findings of this research, there are five significant problems in artificial intelligence problems. These problems include public, social, policy, information, and digital. This research also involves achieving artificial intelligence's goals, such as the general public, Social Analysts, Academic Information, and Adopting digital advancement policies influenced by artificial intelligence. This research adds something new to the theory by mapping the ideas of artificial intelligence and looking for connections between other essential ideas. This research also provides the following practical steps: (1) Society can utilize knowledge about artificial intelligence to keep up with developments in the current digital era. (2) The government can determine its behavior in adopting artificial intelligence policies and apply them to public services (3) for general public and social analysis. The government can determine its behavior in adopting artificial intelligence policies and apply them to public services (3) for general public and social analysis. The government can determine its behavior in adopting artificial intelligence policies and apply them to public services.

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References

1. Williams R, Ali S, Devasia N, DiPaola D, Hong J, Kaputsos SP, et al. AI + Ethics Curricula for Middle School Youth: Lessons Learned from Three Project-Based Curricula. Vol. 33, *International Journal of Artificial Intelligence in Education*. Springer New York; 2022. 325–383 p.
2. Cao Z, Jiang L, Yue P, Gong J, Hu X, Liu S, et al. A large scale training sample database system for intelligent interpretation of remote sensing imagery. *Geo-Spatial Inf Sci*. 2023;00(00):1–20.
3. Young E, Wajcman J, Sprejer L. Mind the gender gap: Inequalities in the emergent professions of artificial intelligence (AI) and data science. *New Technol Work Employ*. 2023;(August).
4. van Noordt C, Medaglia R, Tangi L. Policy initiatives for Artificial Intelligence-enabled government: An analysis of national strategies in Europe. *Public Policy and Administration*. 2023.
5. Fridman M, Krøvel R, Palumbo F. How (not to) Run an AI Project in Investigative Journalism. *Journal Pract*. 2023;1–18.
6. Lee CA, Huang NF, Tzeng JW, Tsai PH. AI-Based Diagnostic Assessment System: Integrated with Knowledge Map in MOOCs. *IEEE Trans Learn Technol*. 2023;PP:1–14.
7. Lombi L, Rossero E. How artificial intelligence is reshaping the autonomy and boundary work of radiologists. A qualitative study. *Sociol Heal Illn*. 2023;(January):1–19.
8. Kim CS, Samaniego CS, Sousa Melo SL, Brachvogel WA, Baskaran K, Rulli D. Artificial intelligence (A.I.) in dental curricula: Ethics and responsible integration. *J Dent Educ*. 2023;(June):1–4.
9. Atkinson CF. Cheap, Quick, and Rigorous: Artificial Intelligence and the Systematic Literature Review. *Soc Sci Comput Rev*. 2023;0(0):1–18.
10. Jatou F. Groundwork for AI: Enforcing a benchmark for neoantigen prediction in personalized cancer immunotherapy. *Soc Stud Sci*. 2023;
11. Fraser H, Bello Y, Villarino JM. Acceptable Risks in Europe's Proposed AI Act: Reasonableness and Other Principles for Deciding How Much Risk Management Is Enough. *Eur J Risk Regul*. 2023;(April 2021):1–16.
12. Nasseef OA, Baabdullah AM, Alalwan AA, Lal B, Dwivedi YK. Artificial intelligence-based public healthcare systems: G2G knowledge-based exchange to enhance the decision-making process. *Gov Inf Q*. 2021;
13. Sharma M, Luthra S, Joshi S, Kumar A. Implementing challenges of artificial intelligence: Evidence from public manufacturing sector of an emerging

- economy. *Gov Inf Q.* 2021;
14. Mercado R, Bjerrum EJ, Engkvist O. Exploring Graph Traversal Algorithms in Graph-Based Molecular Generation. *J Chem Inf Model.* 2021;15499596.
 15. Golovianko M, Gryshko S, Terziyan V, Tuunanen T. Responsible cognitive digital clones as decision-makers:a design science research study. *Eur J Inf Syst.* 2022;32(5):879–901.
 16. Fréour L, Pohl S, Battistelli A. How Digital Technologies Modify the Work Characteristics: A Preliminary Study. *Span J Psychol.* 2021;
 17. Ji W. The Change of Judicial Power in China in the Era of Artificial Intelligence. *Asian J Law Soc.* 2020;7(3):515–30.
 18. Zheng GG. China’s Grand Design of People’s Smart Courts. *Asian J Law Soc.* 2020;7(3):561–82.
 19. Jin Y, He H. An Artificial-Intelligence-Based Semantic Assist Framework for Judicial Trials. *Asian J Law Soc.* 2020;7(3):531–40.
 20. Derda I. “Did you know that David Beckham speaks nine languages?”: AI-supported production process for enhanced personalization of audio-visual content. *Creat Ind J.* 2021;0(0):1–16.
 21. Matzner T. Algorithms as complementary abstractions. *New Media Soc.* 2022;
 22. de-Lima-Santos MF, Mesquita L, de Melo Peixoto JG, Camargo I. Digital News Business Models in the Age of Industry 4.0 Digital Brazilian News Players Find in Technology New Ways to Bring Revenue and Competitive Advantage. *Digit Journal.* 2022;0(0):1–25.
 23. Kousa P, Niemi H. AI ethics and learning: EdTech companies’ challenges and solutions. *Interact Learn Environ.* 2022;1–12.
 24. Sufi FK, Khalil I. Automated Disaster Monitoring From Social Media Posts Using AI-Based Location Intelligence and Sentiment Analysis. *IEEE Trans Comput Soc Syst.* 2022;3157142.
 25. Neumann O, Guirguis K, Steiner R. Exploring artificial intelligence adoption in public organizations: a comparative case study. *Public Manag Rev.* 2022;00(00):1–28.
 26. Zak Y, Parmet Y, Oron-Gilad T. Facilitating the Work of Unmanned Aerial Vehicle Operators Using Artificial Intelligence: An Intelligent Filter for Command-and-Control Maps to Reduce Cognitive Workload. *Hum Factors.* 2022;
 27. Dahlin E. And say the AI responded? Dancing around ‘autonomy’ in AI/human encounters. *Soc Stud Sci.* 2023;
 28. Jandrić P. On the Hying of Scholarly Research (with a Shout-Out to ChatGPT). *Postdigital Sci Educ.* 2023;(0123456789).
 29. Gundersen OE, Coakley K. Open Research in Artificial Intelligence and the Search for Common Ground in Reproducibility: A Commentary on “(Why) Are Open Research Practices the Future for the Study of Language Learning?” *Lang Learn.* 2023;(April):1–7.
 30. Brożek B, Furman M, Jakubiec M, Kucharzyk B. The black box problem revisited. Real and imaginary challenges for automated legal decision making. *Artif Intell Law.* 2023;

31. Raposo VL. The Use of Facial Recognition Technology by Law Enforcement in Europe: a Non-Orwellian Draft Proposal. *Eur J Crim Policy Res.* 2022;(0123456789).
32. Cohen MC, Dahan S, Khern-am-nuai W, Shimao H, Touboul J. The use of AI in legal systems: determining independent contractor vs. employee status. *Artif Intell Law.* 2023;(0123456789).
33. Ecer F, Ögel İY, Krishankumar R, Tirkolae EB. The q-rung fuzzy LOPCOW-VIKOR model to assess the role of unmanned aerial vehicles for precision agriculture realization in the Agri-Food 4.0 era. *Artificial Intelligence Review.* 2023. 13373–13406 p.
34. Kotliar DM, Groslik R. On the Contesting Conceptualisation of the Human Body: Between ‘Homo-Microbis’ and ‘Homo-Algorithmicus.’ *Body Soc.* 2023;
35. Odilla F. Bots against corruption: Exploring the benefits and limitations of AI-based anti-corruption technology. *Crime, Law and Social Change.* Springer Netherlands; 2023.

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