Artificial Intelligence in the Social Science Area: Systematic Literature Review in Web of Science and Scopus

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The evolution of technology is giving rise to new scenarios in communication, information access, and social relations. Particularly, artificial intelligence has a great impact on the current media ecosystem, including social, academic, communicative, health aspects, and interpersonal relationships. This research aims to study how artificial intelligence is reflected in the scientific production in the most relevant publications in Social Sciences. To this end, a systematic review of the scientific literature published in Spanish on the Web of Science and Scopus databases spanning from 2018 to the first three quarters of 2023 was carried out, following the standards of PRISMA Statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). From an initial sample of 159 articles, 109 were analysed after applying the inclusion and exclusion criteria. Results show that 2022 was the most productive year, with Spain having the highest number of publications. Furthermore, most of the research was published on Scopus and in the field of Law, with a predominance of qualitative methodology. The key themes were the benefits of implementing artificial intelligence (AI) and its dangers and threats.

Keywords: artificial intelligence, social sciences, systematic review, Web of Science, Scopus.

Technology is seen as an instrument that facilitates the achievement of a goal in various domains, being not only a means to an end but also a shaper of that end (Coeckelbergh, 2023). In this sense, in the academic and professional sphere, conversations are being fostered on topics that encompass the influence of technological and algorithmic resources in the field of mani-
pulation and decision-making (Flores-Vivar and García-Peñalvo, 2023a), biases, unfair discriminations, and social inequality (Holmes et al., 2022); communication and information, surveillance, technical skills, information bubbles and exclusion (Nemorin et al., 2023) and more current currents such as posthumanism and transhumanism (Neubauer, 2021), as well as in the relationship of these disciplines to each other (García-Peñalvo et al., 2024).

About the above, artificial intelligence (AI) comes into play, which has been explained by different scholars, such as Kaelbling et al. (1996), who state that it consists of the ability of different devices to acclimatise to the current reality, develop projects or carry out different tasks of a certain complexity, among other functions. The uses and benefits of AI can be developed and applied in different fields, such as smart buildings (Martínez-Comesaña et al., 2021; Troncoso-Pastoriza et al., 2022); the environment (Martínez-Torres et al., 2020; Martínez-Comesaña et al., 2022; Rigueira et al., 2022), the economy (Jabeur et al., 2021) or chemical sciences (Anjos et al., 2020) and education (Chen et al., 2022).

Artificial intelligence is also considered a scientific field in which intelligent tools are developed, capable of responding to different problems through their ability to anticipate situations in their environment, as well as their elasticity (Ma et al., 2014; Wang et al., 2015; Tuomi et al., 2018). In this context, AI is seen as a complementary resource for a rapidly changing society largely due to the high demand that exists from the population through access to their electronic devices, as the way they search for information on the web has changed (Canavilhas and Giacomelli, 2023). As with other technologies, AI has great versatility, being seen as a resource capable of processing numerous data, reproducing and imitating human intelligence, performing a pattern similar to the ability to reason, and even becoming an easily understandable writing model (Broussard et al., 2019).

AI is penetrating different areas of society, such as the search for information (Steiner, 2014), the generation of texts in an agile and efficient way (Carlson, 2015; Lokot and Diakopoulos, 2016; Ufarte-Ruiz and Manfredi-Sánchez, 2019) or the personalisation of information (Gamperl, 2021), among other aspects. This new context comes in response to the need to find quick solutions for users who approach this type of resources since this technology has been designed to perform this type of task faster than any other resource of this type (Canavilhas and Giacomelli, 2023). It is also important to highlight that thanks to AI, it is possible to reduce the number of errors in the elaboration of tasks of different depths (Radcliff, 2016; Graefe, 2016; Galily, 2018). Moreover, while it is true that, according to different studies, there are no significant differences between products generated by AI and those produced by humans (Edwards et al., 2014), many people believe that those generated by robots are more reliable (Kaa and Kramher, 2014; Kieslich et al., 2021).

However, among the disadvantages of the implementation of AI are the risk of job elimination, where workers show some concern about being replaced by robots (Latar, 2018; Beckett, 2019), or the suspension of moral and ethical values (Rojas-Torrijos, 2021), being necessary to work on these problems from different points of view of a deontological nature (Túñez-López et al., 2019) so that the resources derived from the use of AI is used in a natural way (Barceló-Ugarte...
et al., 2021) and, in the same way, it is possible to know who is responsible for the creation of the content generated (Thurman et al., 2017). Although in a sense, it can be seen as an advantage, the fact that AI can generate content automatically (Clerwall, 2014), whether written texts (Lokot and Diakopoulos, 2016), videos (Newman, 2020) or sound productions (Yaguana-Romero et al., 2022) is considered an aspect of concern among professionals from different professional sectors, and this is an issue that is currently being studied (Calvo-Rubio and Ufarte-Ruiz, 2021).

Given the relevance of Artificial intelligence in the current media ecosystem and the proliferation of scientific production on the subject in recent years, the main objective of this study is to carry out a systematic review of the most relevant academic literature on artificial intelligence in the field of Social Sciences that has been published in Spanish in the Web of Science and Scopus databases. The most relevant academic literature is considered because the search is based on the scientific production in these two databases, which are identified as the two main international academic databases and are highly pertinent for conducting literature reviews (Codina, 2017).

In relation to this main objective, it is essential to respond to the following question: What are the most relevant scientific productions in the field of Social Science in the area of artificial intelligence? In relation to this question, the specific objectives are as follows:

• SO1. Establish the periods in which the articles were published.
• SO2. Find out the countries where articles on artificial intelligence have been published.
• SO3. To analyse the indexing of the journals that include the published articles.
• SO4. Examine the number of authors publishing articles on AI.
• SO5. Identify the areas of knowledge where AI studies have been carried out.
• SO6. Determine what type of methodology and instruments have been used to carry out the studies.
• SO7. Determine how the articles establish a connection between the conclusions and the stated objectives and explain the limitations and prospects of the research carried out.
• SO8. Investigate the approach to the conclusions within each of the studies.
• SO9. Detail which studies use graphic resources in their studies to support their explanations.

METHOD

In order to respond to the objectives set out in this research, a systematic literature review was conducted based on the PRISMA 2020 standards (Preferred Reporting Items for Systematic Reviewers and MetaAnalyses). This guide establishes a series of guidelines within the process of identification and recognition of data sources, selection criteria, and search strategies, selection of the research carried out,
as well as the analysis of data and results and the analysis of the main results (Kitchenham et al., 2010; Page et al., 2021).

**Stage 1. Selection Criteria 1**

The most prestigious scientific information databases, Web of Science (WOS) and SCOPUS were consulted to search for the studies. The search was refined to studies that contained the descriptors in the title, abstract, or keywords, were in open access and article format, belonged to the area of Social Sciences, had a double-blind peer review process, and were written in Spanish. Spanish was chosen because it is the language with the largest number of articles published on AI in the Social Sciences, as well as being the second mother tongue in the world regarding the number of speakers. The time frame established was from 2018, the date of publication of the first article on artificial intelligence, to September 2023, thus covering the first three quarters of that year.

**Stage 2. Strategies for Conducting the Search**

For the search of the studies in the databases, the keywords most commonly used in the scientific literature on this subject were established, considering the research questions. In this case, the following search equation was designed in both databases: “artificial intelligence”.

**Stage 3. Selection Process**

The application of the eligibility criteria and the search equation in both databases resulted in 159 articles, of which one was duplicated in both databases. The remaining 158 were taken for screening by reading the title and abstract (if not clear, the full text was accessed) and taking as exclusion criteria: other articles not linked to the area of Social Sciences, studies that are not empirical and that do not fit the subject matter under study, and articles written in English. This exclusion process resulted in 109 articles (Figure 1).
RESULTS

The systematic literature review results are structured around three main blocks, which revolve around the specific objectives set out for this research study. In this context, the content analysis of the published studies is delimited into 1) identification of the publication date of the articles, 2) areas of study and methodologies employed, and 3) presentation of conclusions.

IDENTIFICATION OF PUBLICATION DATA

The studies carried out on AI in the field of Social Sciences and which are written in Spanish begin in the year 2018, with the year 2022 being the one with the
highest number of publications with a total of 29 articles (26.60%), followed by 2021 with 28 articles (25.68%). Likewise, December 2022, with seven articles (6.42%), is the month with the highest number of scientific productions on AI in Social Sciences, followed by December 2021, March 2022, and July 2023, with five articles each (Figure 2).

![Figure 2. Frequency of AI research publications by month](source)

When looking at the countries where the largest number of articles on AI written in Spanish have been published, 58 (53.21%) of the total sample are located in Spain, which is the most representative country, followed by 13 (11.92%) in Colombia. There is a group of countries where only one article has been published in each of them, this group being referred to as others in Figure 3. These countries are Ecuador, Portugal, the United States, and Estonia.
As far as the indexing of the journals is concerned, it can be seen that the publications in SCOPUS are the largest group, with a total of 90 publications (82.56%), followed by the journals indexed in Latindex, with eight publications (7.34%) being the second largest group; In contrast, the JCR journals (6.42%) occupy third place with seven articles and those indexed in ESCI with four articles (3.68%) are in last place (see Figure 4).

**Figure 3. Geographical location by country where studies on AI have been published**

![Geographical location by country](image)

Source: Own elaboration.

**Figure 4. Publications in indexed journals**

![Publications in indexed journals](image)

Source: Own elaboration.
In this context, among the quartile-ranked journals, SCOPUS Q2 journals have the highest number of published articles, 39 in total (35.77%), followed by SCOPUS Q3 journals, with a total of 20 articles (18.34%) (Figure 5). Importantly, 105 articles (96.33%) have doi, i.e., the digital object identifier typically used in electronic journal articles or e-book chapters, among others.

**Figure 5. Publications in indexed journals according to quartile**

![Figure 5](image)

Source: Own elaboration.

Finally, the number of authors per published article was analysed, with single-author studies (56; 51.37%) being the most representative sample, followed by studies with three authors (26; 23.85%), as seen in Figure 6.

**Figure 6. Number of authors in AI research publications**

![Figure 6](image)

Source: Own elaboration.
Areas of Study and the Use of Methodologies

Within the areas of study linked to the studies analysed in this research (Figure 7), it can be seen that the field of law has the highest number of publications, with a total of 59 (54.12%), followed by studies related to communication (27, 24.77%). In addition, research linked to the field of study of education is in third place, with 15 articles (13.76%), and, lastly, there are articles related to politics (8; 7.35%).

Figure 7. Areas of study in AI research publications

![Bar chart showing areas of study in AI research publications]

Source: Own elaboration.

Regarding the methodology, 46 articles (42.20%) present the IMRD structure (introduction, method, results, and discussion). About formulating a general objective for the studies presented, 71 (65.13%) of them present this element, and 12 (11%) present specific objectives. In this sense, 20 articles (18.34%) formulate research questions, and 30 (27.52%) present hypotheses in the studies (see Figure 8).
When analysing the type of methodology used for each of the articles (Figure 9), we can see that qualitative methodology is the most used, with 87 studies (79.81%), followed by quantitative methodology, with a total of 12 publications (11%) and finally, 10 articles (9.19%) use a mixed methodology, i.e., a combination of qualitative and quantitative.
Regarding the type of study, comprehensive studies are the most popular, with 31 (28.44%) of the total number of studies analysed, followed by those referred to as comparative, with 19 studies (17.43%). It is also worth noting that 11 studies (10.09%) used more than one type of research (Figure 10).

Figure 10. Types of studies conducted in AI research

<table>
<thead>
<tr>
<th>Type of Study</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive</td>
<td>31</td>
</tr>
<tr>
<td>Comparative</td>
<td>19</td>
</tr>
<tr>
<td>Análisis contenido</td>
<td>16</td>
</tr>
<tr>
<td>Content analysis</td>
<td>13</td>
</tr>
<tr>
<td>Survey</td>
<td>13</td>
</tr>
<tr>
<td>Interview</td>
<td>12</td>
</tr>
<tr>
<td>Literature review</td>
<td>11</td>
</tr>
<tr>
<td>Case study</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Own elaboration.

**Statement of Conclusions**

In the section on conclusions, 41 (37.61%) of the total number of articles analysed in this study establish a relation between the conclusions drawn from the research carried out and the general and specific objectives.

When we pay attention to the limitations that the researchers set out in the section on the conclusions of their studies, we can see that 19 articles (17.43%) reflect them; on the other hand, 20 articles (18.34%) set out the possible future or prospective options that arise as a result of obtaining the main results of the research carried out (see Figure 11).
Finally, when looking at the explanatory resources used in the results obtained (Figure 12), tables are the most used in a total of 36 articles (33.02%), followed by figures in 30 articles (27.52%) and graphs in 29 studies (26.60%).
DISCUSSION AND CONCLUSIONS

By the general objective proposed for this study is to carry out a systematic review of the most relevant academic literature on artificial intelligence within the field of Social Sciences that has been published in Spanish in the Web of Science and Scopus databases, a total of 109 articles published in indexed scientific journals between 2018, the year in which the first article was published, and the third quarter of 2023 have been analysed, this study arising from the importance and repercussion of this resource within the media and cultural ecosystem in which today’s society is immersed. In this sense, it is important to take into account the major changes that are taking place in the field of AI, which is why it is essential for academia to carry out studies and research in this field (Túñez-López and Tejedor-Calvo, 2019).

In accordance with the first section analysed, the first four specific objectives have been included. About finding out the periods in which the articles were published (SO1), it can be seen that the first article was published in 2018, with the year 2022 being the most productive (26.60%) and December 2022 (6.42%) being the month in which the most studies have been published over this period of time. All this corroborates what Hinojo-Lucena et al. (2019) stated when explaining that the number of studies on AI will increase over time.

When paying attention to SO2, the countries where the publications of articles on AI have been made, Spain (53.21%) stands out as the most productive country in this sense, followed by Colombia (11.92%). When analysing the indexing of the journals that include the articles published (SO3), the journals indexed in SCOPUS stand out as those that include the most publications, with 82.56% of the total number of articles; likewise, they are those that are classified in those indexed as SCOPUS Q2 (35.77%). Finally, about SO4, examining the number of authors publishing articles on AI, the majority group has only one author (51.37%). In this context, this confirms what Jimbo-Santana et al. (2023) expressed when explaining that AI has been progressively evolving in all countries and, in turn, the studies linked to it.

After having studied the second block, when identifying the areas of knowledge in which the AI studies have been carried out (SO5), the largest number of research studies are in the field of Law (54.12%). Moreover, after determining the methodology and instruments used to carry out the studies (SO6), this is the qualitative type with the greatest presence in the total number of articles analysed (79.81%). Thanks to this type of studies and the methodologies used in these studies linked to AI, as Sanabria-Navarro et al. (2023) point out, original and revealing contributions are made to the scientific community in each and every one of the thematic areas linked to the Social Sciences thanks, to a large extent, to the results, theories, and resources used in these research studies.

Finally, in the third section of this systematic literature review study, the SO7 refers to delimiting how the articles establish a connection between the conclusions and the stated objectives, as well as explaining the limitations and perspective of the research carried out, where it is observed that 37.61% of the articles analysed show a connection between the conclusions and the objectives...
established in the studies, as well as 17.43% of the studies, state what problems have been encountered throughout the development of the research, and 18.34% of the total number of studies state what future lines of research would be.

About investigating how conclusions are drawn in each of the studies (SO8), the benefits of AI in identifying problems of identity theft, facial recognition, the application of criminal law, or the use of bots for journalistic news writing are shown. This is expressed by Tongkachock et al. (2023), who argue the benefits of using artificial intelligence in an age mediated by a digital and media environment. Likewise, the use of AI for decision-making and the development of specific skills in areas of society such as legislation, medicine, education, and others is also beneficial (Hort et al., 2023), and even to identify or understand human emotions (Ho et al., 2023). In this sense, in relation to the labour market, and as Aramburú-Moncada et al. stated, “artificial intelligence is one of the most drastic and surprising renovations that the profession has been facing for many years and has already been incorporated in many companies” (2023, p. 3).

Despite the benefits shown by studies on AI, they also expose the existing risks, such as identity theft, suppression, and elimination of jobs to be replaced by robots. This is confirmed by Flores-Vivar and García-Peñalvo (2023b) when they state that privacy and security issues arise not only at a personal level but also at an institutional level, as well as achieving objectivity and impartiality and preventing problems such as the digital divide or discrimination from being accentuated.

Concerning SO9, detailing which studies use graphic resources in their studies to support their explanations, these elements (tables, graphs, and figures) do not have a large presence in these articles, with tables (33.02%) being the most frequently used.

The main conclusions drawn from this systematic literature review; it is important to highlight that the field of Law has produced the most studies about AI. Similarly, the studies corresponding to the field of Law are linked to qualitative studies, while those in Journalism and Education opt for studies of a quantitative and mixed nature. In contrast, the need to develop more research studies in the other areas of knowledge linked to the Social Sciences can be appreciated. It is also worth noting the gradual increase in publications related to artificial intelligence, which indicates the Academy’s growing interest in this field.

Therefore, taking as a reference the results obtained in the studies carried out in the 109 articles analysed, it can be seen how, in general terms, the use of artificial intelligence generates a particular uncertainty when it comes to its use by the public, which is not yet fully aware of the risks that may arise from the uncontrolled use of this resource, especially in the legislative sphere. According to Sanabria-Navarro et al., “concerns are raised about privacy and security of personal information, as well as the possibility of excessive automation of human jobs” (2023, p. 105).

Also, artificial intelligence has become a real ethical and moral challenge, as the aim is to ensure that discriminatory and racist biases are not perpetuated (Flores-Vivar and García-Peñalvo, 2023a). To sum up, the general interest of the
population in the area of artificial intelligence is growing by the day (Sánchez-Holgado et al., 2022).

Likewise, although various qualitative studies are being carried out, there needs to be more quantitative research on users’ opinions about the use, benefits, and disadvantages of using and establishing artificial intelligence in society.

Among the limitations encountered when carrying out this study are the large number of studies found and the need to define solid and reliable selection criteria in order to create an adequate sample for subsequent analysis. In relation to the prospective for future studies on AI, once a solid theoretical basis has been obtained after this literature review, it consists of finding out how this resource is used among the university population, both teachers and students and its impact on the various spheres of society. Likewise, it is proposed as future research to extend the scope of the study to publications in English in these same databases, which will provide a broader view of the scientific production related to artificial intelligence.

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