Thematic analysis on ethical concepts of artificial intelligence in Business: a systematic review and research agenda

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Abstract: *Artificial Intelligence (AI) is being implemented in more and more fields, including the business area. However, a number of ethical problems are highlighted, as this study brings. With this, the proposal is to highlight the thematic walk on the works that researched on the ethical problems of artificial intelligence in Business and proposes a research agenda. For this, research was conducted in two databases: Scopus and Web of Science. A total of 311 articles were used and, after analysis, 20 articles were selected for the systematic review, in which they are the most impactful and that relate in their title concepts related to ethics and artificial intelligence. The results were discussed and a research agenda was proposed addressing the central topic of the work. Finally, the conclusion was reached. With this, the work highlights the growing implementation of AI in various business areas and the ethical problems that arise as a result. The study aims to provide a thematic analysis of research on the ethical problems of AI in business and proposes a research agenda to address these issues. This work contributes by providing the state of the art of the subject, in which it can serve as guidance for students, teachers and researchers, also contributing to science by explaining an emerging topic.*

Keywords - *Artificial Intelligence, Ethics, Business, Systematic review, Research agenda*

I. INTRODUCTION

Artificial intelligence (AI) is becoming increasingly common in (Haenlein, Huang & Kaplan, 2022), revolutionizing the way decisions are made and having an impact on a variety of sectors, including education (Chen, Chen & Lin, 2020), e-commerce (Bawack, Wamba, Carillo & Akter, 2022) and health (Yu, Beam & Kohane, 2018). But ethical issues arise as AI advances in these areas (Zhang, 2021).

I would point out that artificial intelligence is a computational machine designed to mimic various human intelligences, such as doing, thinking and feeling. They can also interpret external data, learn from that data and use that learning to specific goals and tasks through flexible adaptation (Kaplan & Haenlein, 2019). It has become one of the most popular topics in various academic areas, industrial sectors, and commercial functions. Artificial intelligence has a significant impact on society in general (Haenlein & Kaplan, 2020).

The growing dependence on AI raises important ethical questions and requires researchers and managers to be alert. The ethical issues related to the adoption of AI in business have been highlighted by several notable cases. According to Sison, Ferrero, Ruiz and Kim (2023), Amazon's AI-driven recruitment tool has demonstrated prejudice against women. In addition, Microsoft's Tay chatbot was interrupted by racist and misogynistic comments. Because of this, the ethics of artificial intelligence in Business has become a popular topic in many studies. This review seeks to identify what is being studied in these studies and what are the future prospects. Thus, just as artificial intelligence has the ability to improve human life in many ways, it also risks creating dangerous technologies that can be extremely harmful to humanity. (Nasim, Ali & Kulsoom, 2022).

Therefore, of course, artificial intelligence is an important subject for the future of our society as a whole, not just for research and business innovations. As a result, this article examines its applications in business ethics assessment, which is one of the areas where AI is most relevant and inventive. As a result, this article is divided into five sections. After the introduction, there is a section on methods, results, a proposed research agenda and conclusion. This article contributed significantly to the following:
- Current state of the art review.
- The most impactful applications of AI regarding ethics and artificial intelligence in Business.

• Based on our analysis, a research agenda is proposed with the main themes obtained from the analyses of the works obtaining.

II.   METHOD

The Scopus and WoS (Web Of Science) databases were used for this bibliometric research because they are often used in bibliometrical studies (e.g., DEL BARRIO-GARCÍA; PRADOS-PEÑA, 2019; ROJAS-LAMORENA; DEL Barrio-Garcia; ALCÁNTARA-PILAR, 2022). Using a search overview query, the data were extracted from the main collection of WoS and Scopus for the period of the entire base reference period, without time-period filters, using the ALL field for WoS, and the TITLE-ABS-KEY field for SCOPUS. The search query was as follows:

("artificial intelligence" OR AI) AND ("Business") AND (Ethics)

The terms have been defined on the basis of the literature (articles) that deal with the themes, and can cover the perspectives that include the term "artificial intelligence" or "AI", linking obligatory, to the terms "business" and "ethics", so that the contents brought the three thematic domains. The year 1997 was identified as the first year of publication. Based on this, the analysis included in this study will be based on the years from 1997 to 2023, last 26 years, looking only articles from journals as the unit of analysis, since the academic community considers these publications as the most up-to-date source of knowledge in the field of marketing (DEL BARRIO-GARCÍA; PRADOS-PEÑA, 2019). Thus, we obtained, initially, a total of 409 articles on WoS and 161 articles on Scopus; At RStudio, the duplicity check was carried out and the WoS-Scopus bases were merged, in which a filtering was performed to identify and eliminate duplications, and 94 articles were eliminated. Thus, the remaining articles were coupled in a sheet in XLSX format, turning into a single database for analysis, with 476 documents. As the check may not be fully efficient, a manual check was carried out on the spreadsheet, checking the DOI link (because it is a unique link for each work). With this, having the spreadsheet created, subsequently, were removed also the works that did not contain keywords, as it is a fundamental point of the analysis. Therefore, the final sample consisted of 311 scientific articles, with a total of 1367 keywords and 1672 authors.

2.1. Analysis tools used

Here, a bibliometric review is carried out with the aim of synthesizing a variety of studies that address a specific topic within the limits of more than one domain of knowledge. The bibliometric technique is best for making quotation analyses, exploring an intellectual structure of domains and providing an objective and subjective analysis when it comes to big data (DONTHU et al., 2021). To create the list of analysable items, we used the Bibliometrix tool using the programs RStudio and R (MORAL-MUÑOZ et al., 2020).

After reviewing the chronological and descriptive perspectives of the field, thematic mapping was used to map the thematic structure related to the subject. The method suggested by Cobo et al. (2011) to deal with groups, which used a thematic map graphic scheme, was used. This scheme shows thematic components based on density (quantity of articles) and centrality (quantity of quotes). The perpendicular ones were placed both vertically and horizontally. Density determines the strength of the keyword or theme network, while centrality indicates the degree of interaction between the networks. This indicates that the "motor themes" are the main research themes that attract more scientific production and related quotations in the high density and high centrality quadrant. On the other hand, low density and low centrality quadrants present emerging problems or with a strong tendency to disappear. The top left quadrant has low centrality and high density and shows problems developed internally, but peripheral (isolated), i.e. no connection to other networks. The lower right quadrant, with high centrality and low density, shows central topics that cover various areas of knowledge.

In addition, co-word analysis was used, which is able to identify, describe and visually show the interactions between keywords in a scientific field. This tool measures the frequency at which two keywords appear together. In other words, it measures the number of documents, like our articles, in which these words appear together.

III.   RESULTS

3.1. Walking the scientific production of the area

If you look at the entire reference period, you can see that the issue arises in 1997, where it has remained constant, and has grown from the year 2016/2017. However, despite slow growth, the number of publications has increased significantly, showing that the topic is gaining interest, having increased substantially, mainly, in the last 5 years.

Figure 1 - Graph of production per year
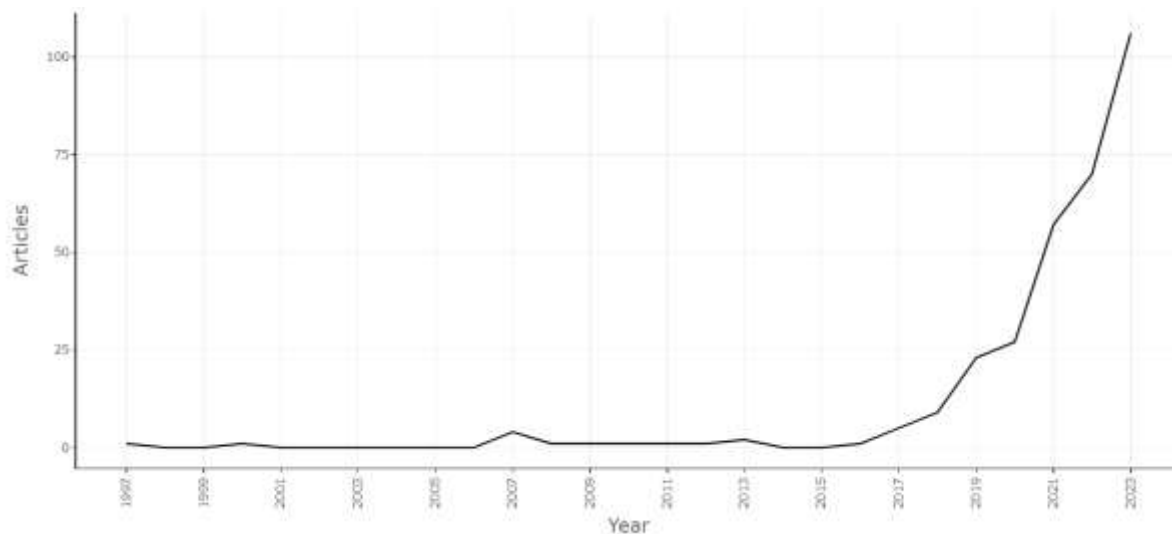
To get more depth on the thematic walk, we looked at the five authors who published the most works over the period to get more information and understand the main authors. Therefore, the five most prolific authors were: RAND D (18), PENNYCOOK G (15), FLORIDI L (4), LEE J (4) and MOSLEH M(4).

In addition, we also analyze the 5 most cited works (Table 1), where only one author of the most publishing is among the 5 more cited Professor Gordon Pennycook of Cornell University, who researches the themes of Reasoning, Judgment and Decision-making, misinformation, Beliefs and Metacognitive. In addition, one can see that among the most cited, the two works of Pennycook deal with the issue of disinformation, which has gained relevance in recent years around the world (Zhou & Zafarani, 2020). The two most cited studies, in turn, deal with two major revolutions in the implication of artificial intelligence, being robotic services at the forefront and their use in the changing field of marketing. The most recent work among the most cited is in the fifth, but it is from the year 2023; it deals with important issues relating to the opportunities, challenges and implications of AI for research, practices and policies.

Table 1 - 5 most cited works

Document	Title	Citation
WIRTZ J, 2018, J SERV MANAGE	Brave new world: service robots in the frontline	721
DAVENPORT T, 2020, J ACAD MARK SCI	How artificial intelligence will change the future of marketing	469
PENNYCOOK G, 2019, PROC NATL ACAD SCI U S A	Fighting misinformation on social media using crowdsourced judgments of news source quality	272

| PENNYCOOK G, 2021, NATURE | Shifting attention to accuracy can reduce misinformation online | 268 |
| DWIVEDI YK, 2023, INT J INF MANAGE | Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy | 265 |

Finally, it is possible to check the network of co-citations (Figure 2), where you can check the overall panorama of citations among the authors. It can be noted five clusters, where Pennycook appears in the purple cluster, having connections only with the orange cluster which brings the author Haidt J.

Figure 2 - Co-citation network
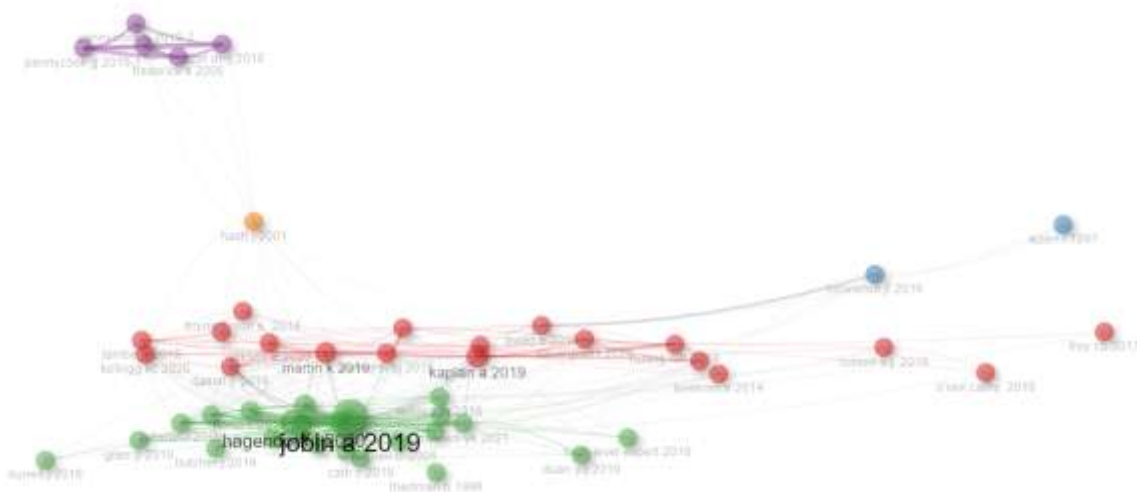
We see, then, that over the course of 26 years, the terms allow to deduce that 4 groupings of discussion were obtained, according to the network of co-occurrence of words (Figura 3). Etoca and Artificial Intelligence meet in different groups, butining links, which reinforces the discussion.

Figure 3 - Co-occurrence of thematic terms (1997-2023)
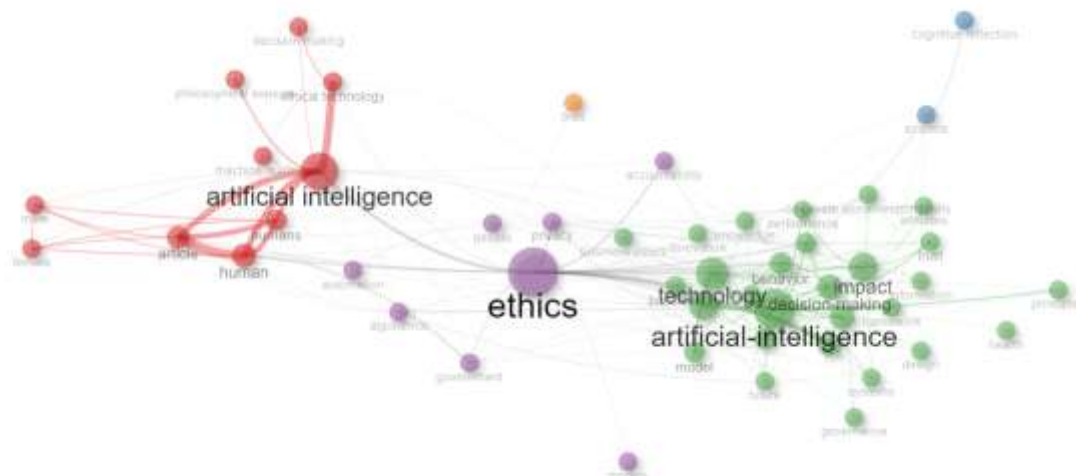
3.2. Thematic analysis

Using the visual information provided directly by Biblioshiny, we proceed with the analysis, with the aim of examining the thematic evolution and the collaboration of the topics throughout the global period of the topic, which is shown in Figure 4.

Figure 4 - Thematic map for the period 1997-2023
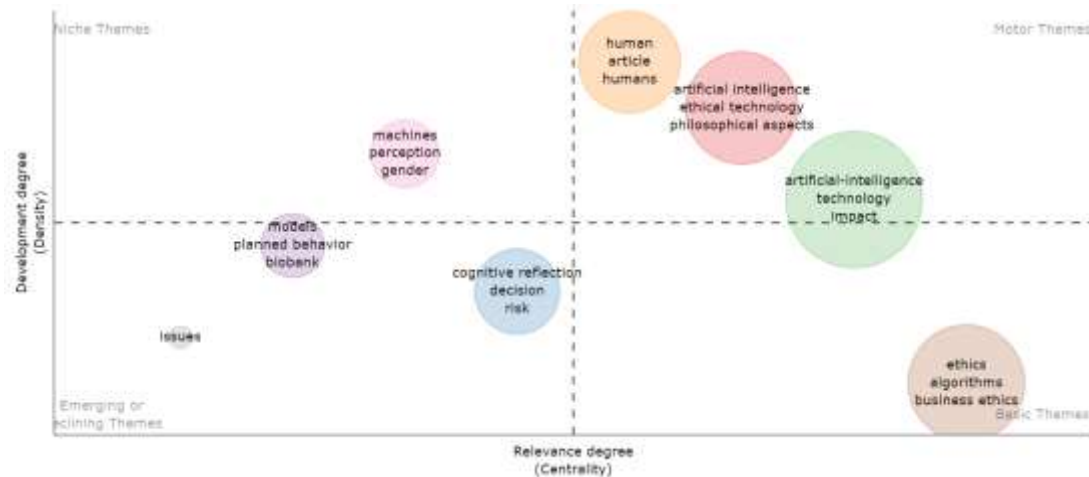
It can be observed that there is a strong debate on the topic of artificial intelligence, where two clusters contain the term and both are present in the motor themed area, that is, with references that focus on various areas of knowledge and with highly quoted articles. In addition, also with motor themes, there are subjects linked to the human side, in which they have the highest level of density and a centrality from medium to high.

In turn, the term "ethics" appears in the lower right quadrant, which concentrates the basic topics, that is, those that concentrate subjects that go through various areas of knowledge. This allows us to understand that business ethics becomes relevant to several areas, and that it does not focus only on one area in particular.

Thus, three clusters are central to the work, being the pink, of the upper right quadrant; the green, which is located on the divisa of the top right and left; and the brown, that is located in the lower right area. Below, the issues arising from the thematic analysis will be highlighted, highlighting the ten most cited articles concerning the central clusters of the work, that is, reporting what has been discussed throughout the entire period analysed, which has the highest impact.

In all, 236 articles are present in the three clusters. Of the clusters referring to artificial intelligence, 80 documents cite ethical issues in the title of the paper. In turn, for the cluster that contains the term "ethics", 26 documents bring either the word "artificial intelligence" or "AI" being quoted in its title.

Table 2 summarizes the ten most cited works, referring to the clusters of "artificial intelligence" and "Artificial-intelligence" in which they bring ethical concepts in their title.

Table 2 - TOP 10 most cited works linked to the core thematic terms of the work (pink and green clusters)

Title	Journal	Year	Total Citation	Cluster
BRIDGING THE GAP BETWEEN ETHICS AND PRACTICE GUIDELINES FOR RELIABLE SAFE AND TRUSTWORTHY HUMANCENTERED AI SYSTEMS	ACM TRANSACTIONS ON INTERACTIVE INTELLIGENT SYSTEMS	2020	175	artificial intelligence or artificial-intelligence

ETHICAL IMPLICATIONS AND ACCOUNTABILITY OF ALGORITHMS	JOURNAL OF BUSINESS ETHICS	2019	162
A CHALLENGE FOR MACHINE ETHICS	MINDS AND MACHINES	2009	77
AI ASSISTED DECISIONMAKING IN HEALTHCARE: THE APPLICATION OF AN ETHICS FRAMEWORK FOR BIG DATA IN HEALTH AND RESEARCH	ASIAN BIOETHICS REVIEW	2019	67
ETHICAL ISSUES IN SERVICE ROBOTICS AND ARTIFICIAL INTELLIGENCE	SERVICE INDUSTRIES JOURNAL	2021	58
PARADOXES OF ARTIFICIAL INTELLIGENCE IN CONSUMER MARKETS ETHICAL CHALLENGES AND OPPORTUNITIES	JOURNAL OF BUSINESS RESEARCH	2021	49
YOU MAY NOT REAP WHAT YOU SOW HOW EMPLOYEES MORAL AWARENESS MINIMIZES ETHICAL LEADERSHIPS POSITIVE IMPACT ON WORKPLACE DEVIANCE	JOURNAL OF BUSINESS ETHICS	2017	40
ETHICS AS A SERVICE A PRAGMATIC OPERATIONALISATION OF AI ETHICS	MINDS AND MACHINES	2021	40
MODELLING ETHICAL RULES OF LYING WITH ANSWER SET PROGRAMMING	ETHICS AND INFORMATION TECHNOLOGY	2007	33
CAN COMPUTER BASED HUMANLIKENESS ENDANGER HUMANNESS A PHILOSOPHICAL AND ETHICAL PERSPECTIVE ON DIGITAL ASSISTANTS EXPRESSING FEELINGS THEY CANT HAVE	INFORMATION SYSTEMS FRONTIERS	2020	24

The work entitled "BRIDGING THE GAP BETWEEN ETHICS AND PRACTICE GUIDELINES FOR RELIABLE SAFE AND TRUSTWORTHY HUMANCENTERED AI SYSTEMS", has as its central theme filling the gap between ethical principles and the practical steps for the effective governance of human-centric AI systems. (HCAI). The author proposes 15 recommendations on three levels of governance: staff, organization and sector, with the aim of increasing the reliability, security and reliability of HCAI systems. These recommendations include reliable systems based on sound software engineering practices, security culture through business management strategies, and reliable independent supervised certification.

The work "ETHICAL IMPLICATIONS AND ACCOUNTABILITY OF ALGORITHMS" brings as a central theme the ethical implications and responsibility of algorithms. He cites that algorithms have significant ethical implications and can shape human actions and decisions. Developers and companies are responsible for the ethical implications of their algorithms. Algorithms are loaded with values and can create moral consequences, strengthen ethical principles and impact the rights and dignity of stakeholders. Thus, it brings that companies must be responsible not only for the value-laden nature of algorithms, but also for designing the roles and responsibilities within the algorytmic decision-making process.

The title work "A CHALLENGE FOR MACHINE ETHICS", deals with the challenge faced by the ethics of machines by identifying an ethical framework that can be implemented in machines and enable the creation of genuine ethical robots. The article argues that, without consistency between ethics and engineering, the resulting artificial moral agents (AIs) would not be genuine ethical robots, making the discipline of Machine Ethics a failure in that regard.

The article "AI ASSISTED DECISIONMAKING IN HEALTHCARE THE APPLICATION OF AN ETHICS FRAMEWORK FOR BIG DATA IN HEalTH AND RESEARCH" focuses on ethical issues related to the use of artificial intelligence (AI) in health decision-making. It discusses the accountability and transparency of decisions taken by AI-based systems, the potential for algorithmic bias and group damage, and the professional functions and integrity of doctors. The article applies the Ethical Framework for Big Data in Health and Research to address these concerns and demonstrate how decision makers can ethically and responsibly develop and implement AI-assisted support systems in healthcare and clinical practice.

Regarding the study "ETHICAL ISSUES IN SERVICE ROBOTICS AND ARTIFICIAL INTELLIGENCE", the central theme is the ethical concerns that arise as we rely increasingly on service robotics and artificial intelligence. The author explores five important ethical issues, including privacy, transparency, accountability, work displacement, and man-machine ethics.

For the work entitled "PARADOXES OF ARTIFICIAL INTELLIGENCE IN CONSUMER MARKETS ETHICAL CHALLENGES AND OPPORTUNITIES", the central theme is the ethical challenges and opportunities associated with artificial intelligence (AI) in consumer markets. The article discusses the contradictory feelings consumers have about AI technologies and identifies key ethical issues, such as AI prejudices, ethical design, consumer privacy, cybersecurity, individual autonomy and well-being, and unemployment. It emphasizes the need for companies to engage in corporate social responsibility (CSR) to shape the future of ethical AI.

With regard to "YOU MAY NOT REAP WHAT YOU SOW HOW EMPLOYEES MORAL AWARENESS MINIMIZES ETHICAL LEADERSHIPS POSITIVE IMPACT ON WORKPLACE DEVIANCE", the central theme is to explore the impact of ethical leadership on deviation in the workplace and the role of employee moral conscience as a boundary condition. The study investigates whether the positive influence of ethical leadership in reducing deviant actions is consistent in all situations or depends on the level of moral awareness of the individual. Research suggests that when individuals already have a high level of moral awareness, the need for ethical leadership in reducing deviant actions can be reduced.

The central theme of the work "ETHICS AS A SERVICE A PRAGMATIC OPERATIONALISATION OF AI ETHICs" is to address the gap between the theory and the practical design of AI ethics and explore the concept of "Ethics as a Service" as a potential solution. The work highlights the proliferation of principles-based ethics codes, guidelines and frameworks in response to increased awareness of ethical issues associated with AI. It emphasizes the limitations of existing translational tools and methods to effectively incorporate AI ethics into the algorithmic design process.

The central theme of the work "MODELLING ETHICAL RULES OF LYING WITH ANSWER SET PROGRAMMING", in turn, is to model general ethical rules using artificial intelligence formalisms and compute the logical consequences of different ethical theories. The work aims to show that progress in non-monotonous logic, which simulate standard reasoning, can be used to formalize different ethical conceptions. The model developed in the article uses the Formalism of Programming Sets of Answers (ASP) and is applied comparatively to different ethical systems in relation to their attitude towards lies.

Finally, the work "CAN COMPUTER BASED HUMANLIKENESS ENDANGER HUMANNESS A PHILOSOPHICAL AND ETHICal PERSPECTIVE ON DIGITAL ASSISTANTS EXPRESSING FEELINGS THEY CANT HAVE" focuses on exploring the philosophical and ethical implications of creating human-like computer-based digital assistants that express human emotions. The authors question the potential benefits and

dangers of increasing human resemblance in digital companions and argue that human emotions are better reserved for human interaction. The work emphasizes the need for a robust ethical discourse on the impact of living with human-like machines that express feelings that they cannot have. He highlights the lack of research that addresses the ethical issue of machines that express emotions and the limited discussion about emotional exchanges between humans and human-like machines.

The following are the central topics of the articles dealing with the two subjects, but belonging to the cluster "ethics" of Table 3.

Table 3 - TOP 10 most cited works linked to the core thematic terms of the work (brown cluster)

Title	Source	Year	Total Citation	Cluster
ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCES MANAGEMENT: CHALLENGES AND A PATH FORWARD	CALIFORNIA MANAGEMENT REVIEW	2019	226	
HOW ARTIFICIAL INTELLIGENCE WILL AFFECT THE FUTURE OF RETAILING	JOURNAL OF RETAILING	2021	57	
RESPONSIBLE AI FOR DIGITAL HEALTH A SYNTHESIS AND A RESEARCH AGENDA	INFORMATION SYSTEMS FRONTIERS	2021	42	
ARTIFICIAL INTELLIGENCE FOR HUMAN FLOURISHING - BEYOND PRINCIPLES FOR MACHINE LEARNING	JOURNAL OF BUSINESS RESEARCH	2021	39	
UNDERSTANDING EXPLAINING AND UTILIZING MEDICAL ARTIFICIAL INTELLIGENCE	NATURE HUMAN BEHAVIOUR	2021	36	ethics
CORPORATE DIGITAL RESPONSIBILITY CDR IN CONSTRUCTION ENGINEERING - ETHICAL GUIDELINES FOR THE APPLICATION OF DIGITAL TRANSFORMATION AND ARTIFICIAL INTELLIGENCE AI IN USER PRACTICE	SN APPLIED SCIENCES	2021	28	
UNDERSTANDING USER TRUST IN ARTIFICIAL INTELLIGENCEBASED EDUCATIONAL SYSTEMS: EVIDENCE FROM CHINA	BRITISH JOURNAL OF EDUCATIONAL TECHNOLOGY	2020	20	
TOWARDS AN EQUITABLE DIGITAL SOCIETY ARTIFICIAL INTELLIGENCE AI AND CORPORATE DIGITAL RESPONSIBILITY CDR	SOCIETY	2021	16	

EXAMINING ARTIFICIAL INTELLIGENCE AI TECHNOLOGIES IN MARKETING VIA A GLOBAL LENS: CURRENT TRENDS AND FUTURE RESEARCH OPPORTUNITIES	INTERNATIONAL JOURNAL OF RESEARCH IN MARKETING	2022	13
A DESIGN FRAMEWORK TO CREATE ARTIFICIAL INTELLIGENCE COACHES	INTERNATIONAL JOURNAL OF EVIDENCE BASED COACHING \& MENTORING	2020	12

The work "ARTIFICIAL INTELLIGENCE IN HUMAN RESOURCES MANAGEMENT: CHALLENGES AND A PATH FORWARD" has as its central theme the identification of challenges in the use of data science techniques for HR tasks and the proposal of practical answers to these challenges. Challenges include the complexity of HR phenomena, restrictions imposed by small data sets, liability issues associated with ethical and fair restrictions, and possible adverse reactions of employees to data-based algorithms. The proposed solutions to these challenges are based on three overlapping principles: causal reasoning, randomization and experiments, and employee contribution. These principles aim to be economically efficient and socially appropriate for the use of data science in employee management.

The central theme of the work "HOW ARTIFICIAL INTELLIGENCE WILL AFFECT THE FUTURE OF RETAILING", in turn, is the impact of artificial intelligence (AI) on the future of retail. The authors examine how senior retail managers should adopt AI, considering factors such as customer-oriented applications, value creation, online presence, and ethical issues. They highlight that the short-term impact of AI on retail may not be as significant as that portrayed in the popular press, and suggest that AI should focus on increasing the judgments of managers, rather than replacing them. The authors also emphasize the value of adopting non-client-oriented AI applications.

The title work "RESPONSIBLE AI FOR DIGITAL HEALTH A SYNTHESIS AND A RESEARCH AGENDA" brings as a central theme responsible AI in the context of digital health, which focuses on the design, implementation and use of ethical, transparent and responsible AI technology in the field of health. The work aims to address significant issues related to AI responsible for health, such as prejudice, justice, equality, interpretability and explainability of the results. The authors conducted a systematic review of the literature to provide an evidence-based basis and develop a comprehensive analysis of AI in health using concepts of responsible AI.

The study "ARTIFICIAL INTELLIGENCE FOR HUMAN FLOURISHING - BEYOND PRINCIPLES FOR MACHINE LEARNING" has as its central theme the exploration of the ethical issues involving artificial intelligence (AI) and its impact on human flourishing. The study covers several dimensions, including case studies, scenarios, ethical impact analysis, human rights analysis, and technical analysis of threats and vulnerabilities. The authors divide the ethical discourse of AI into three currents: specific issues related to the application of machine learning, social and political issues arising in a digitally enabled society, and metaphysical questions about the nature of reality and humanity.

The central theme of the work "UNDERSTANDING EXPLAINING AND UTILIZING MEDICAL ARTIFICIAL INTELLIGENCE" is to understand the barriers to the adoption of medical artificial intelligence (AI) and the perception of AI as a "black box" in the use of health. Patients are reluctant to use medical AI due to the perception of inability to meet their specific needs and the difficulty in holding AI providers accountable for errors. This perception is based on an illusory understanding of human vendor decision-making, as people erroneously believe that they understand human vendors' decision making better than AI vendors. The study suggests that subjective understanding plays a key role in the adoption of medical AI and contributes to the aversion to the algorithm.

Regarding the work "CORPORATE DIGITAL RESPONSIBILITY CDR IN CONSTRUCTION ENGINEERINGETHICAL GUIDELINES FOR THE APPLICATION OF DIGITAL TRANSFORMATION AND ARTIFICIAL INTELLIGENCE AI IN USER PRACTICE", the central theme is corporate digital responsibility (CDR) in construction engineering, with specific focus on the application of digital transformation and artificial intelligence (AI) in user practice. The study aims to address the main research question of where CDR can be allocated and how an appropriate ethical framework can be designed to support digital innovations in construction engineering. It emphasizes the need to develop and implement a secure and efficient AI application, applying ethics from design and meeting EU requirements for reliable AI and its user friendly. The research critically evaluates the opportunities and risks of CDR in the construction industry, discussing the impacts of digitization and AI from an ethical perspective.

The work "UNDERSTANDING USER TRUST IN ARTIFICIAL INTELLIGENCEBASED EDUCATIONAL SYSTEMS: EVIDENCE FROM CHINA" has as its central theme understanding user confidence in AI-based educational systems. The study investigates the factors that influence confidence in AI-based education systems from the user's perspective, categorizing them as factors related to technology, context, and the individual. Technology-related factors include functionality, utility, interpretability, reliability, and interaction interface, while context-relating factors include the benevolence of educational organizations, data management, teacher competencies, official standards, and knowledge characteristics.

The work entitled "TOWARDS AN EQUITABLE DIGITAL SOCIETY ARTIFICIAL INTELLIGENCE AI AND CORPORATE DIGITAL RESPONSIBILITY CDR" brings as a central theme exploring the challenges and implications of the use of artificial intelligence (AI) in the digital age, in relation to decision-making processes and data use. The authors highlight the potential risks and opportunity costs associated with the delegation of power to algorithm-based systems, emphasizing the need for responsible AI practices and governance. They discuss the concept of "black box" and the importance of understanding how algorithms make decisions, especially in critical areas such as financial services. The article also addresses the confusion caused by the multiplicity of ethical principles of AI and advocates the establishment of Corporate Digital Responsibility (CDR) as a collaborative mechanism to ensure an equitable digital society.

In turn, the work "EXAMINING ARTIFICIAL INTELLIGENCE AI TECHNOLOGIES IN MARKETING VIA A GLOBAL LENS: CURRENT TRENDS AND FUTURE RESEARCH OPPORTUNITIES" brings as a central theme examining artificial intelligence (AI) technologies in marketing from a global perspective, focusing on three levels of analysis: country, company and consumer. The authors explore the heterogeneity of economic inequality between countries due to the resources needed for the adoption of AI, the need for globalization in the adaptation of AI technologies to local cultures, and the ethical and privacy concerns related to AI technologies that collect personal data. They also highlight the importance of man-machine interaction and automated analysis of text, audio, images and video in marketing

Finally, the central theme of the work "A DESIGN FRAMEWORK TO CREATE ARTIFICIAL INTELLIGENCE COACHES" is the development of a design framework for the creation of Artificial Intelligence (AI) Coaches in the field of organizational coaching. The structure, called the Designing AI Coach (DAIC) structure, aims to link the effectiveness of human coaching to established AI design approaches, adhering to international coaching standards, practices and ethics. The focus of the structure is on the use of weak AI in the form of specialized systems, specifically conversation agents or chatbots, for training purposes.

IV.   RESEARCH AGENDA

In order to establish a solid research agenda, it is observed the graph of three fields, in which it is possible to check the strongest topics of discussion. Figure 6 emphasizes trend analysis, highlighting the course of trends over time. References, authors and keywords are in the chart. Thus, it is possible to verify that the topics with the greatest impact are about "misinformation" and "artificial intelligence", "fake news", "ethics". "ai ethics", "machine learning", "intelligence," "transparency," "ai," and "algorithms". Thus, it can be seen that issues such as disinformation and fake news are on the top of the debate. As well as transparency, a concept linked to Governance, indicating that this is a problem to be faced. The paths, therefore, show that issues such as

ethical flaws and their elements corroborate with the growth of AI, requiring an approach that deals with these aspects, primarily.

Figure 6 - Three Field Graph
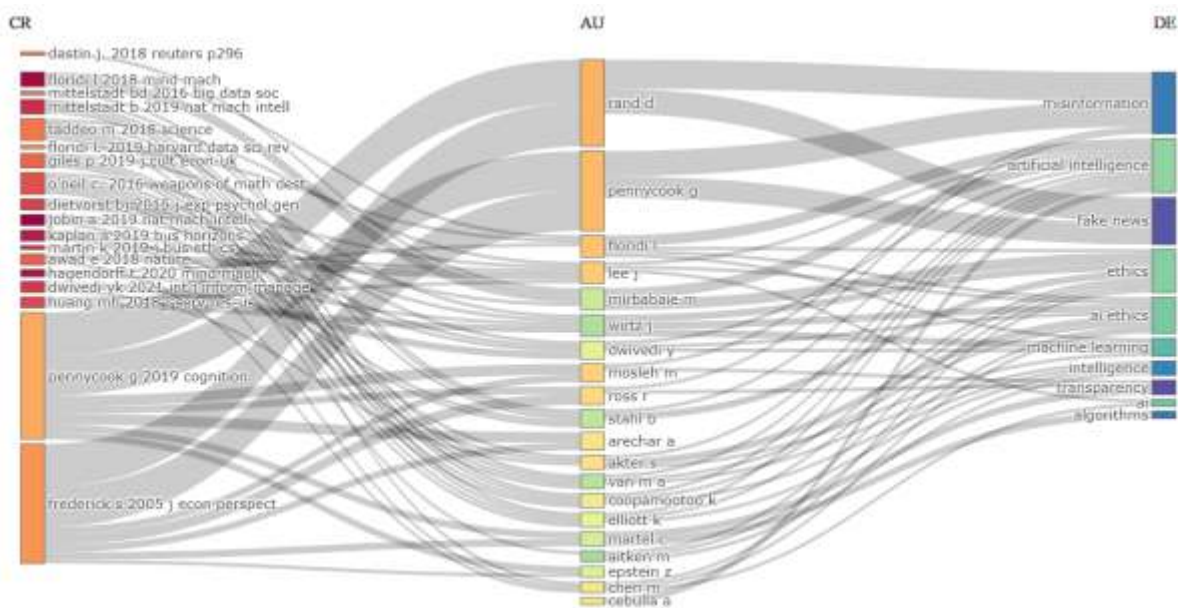
With this, it is proposed to follow a research agenda:

1.   It is necessary to investigate the phenomenon of artificial intelligence in different cultures and their business opportunities. More in-depth research examining different countries and cultures, as well as under-represented populations, is an important guideline for future work. On this, Martel, Mosleh & Rand (2021) cite that since perceptions of informativity and uselessness do not differ based on the condition of explanatory depth, it may be the case that more detailed or more specific explanations may also lead to higher or lower levels of engagement with the corrective message, i.e. future researches may explore these possibilities in greater depth. Pennycook, Epstein, Mosleh, Arechar, Eckles & Rand (2021) bring that future studies should examine applications to other content domains, including disinformation campaigns organized by political elites, and explore intercultural generalization.

2.   Address issues related to behavior. With regard to this, Willems, Schmid, Vanderelst, Vogel & Ebinger (2022) cite that future research may explore how privacy-related behaviour changes when individuals face different simultaneous situations, as it remains important to investigate why individuals' behavior changes in a particular case and what variables have explanatory power to shed light on these behavioural changes.

3.   Studies should address governance issues. On this, Minkkinen, Niukkanen & Mäntymäki (2022) bring that it is necessary to research AI governance and audit as aspects of corporate governance. Furthermore, an important point for future research is how AI governance can be structurally integrated into sets of ESG criteria, as there are at least three possible options, being the governance of AI can be integrated in the social and/or governance pillars of the ESG Criteria; that the aspects of AI Governance can constitute an independent pillar that is used in the evaluation of organizations that develop or use AI systems; and that AI government can be incorporated into a pillar which deals with technological governance more generally.

4.   Focus on issues of ethical flaws related to AI. Therefore, future research may explore specific strategies for small and medium-sized enterprises to deal with ethical AI flaws. Wen & Holweg (2023) bring that future research may investigate solutions tailored to public and non-profit organizations facing public criticism of their AI projects, as well as other research that may look at other deterrent strategies for this intentional ethical failure of AI. Lanz, Briker & Gerpott (2023) emphasize that future scholars may focus on

finding ways to capture such more implicit assumptions that could provide more insight into why employees adhere more to unethical human advice than to AI supervisors.

V. CONCLUSION

The work is a systematic review and a research agenda on the ethical concepts of artificial intelligence (AI) in Business. A total of 311 articles from the Scopus and Web of Science databases were analyzed. The study discusses the ethical problems of AI in Business and proposes a research agenda. It is therefore provided the state of the art on the subject and can serve as guidance for students, teachers and researchers.

The study highlights the relevance of AI ethics in Business and its impact in various areas of knowledge. He mentions that AI is an important subject for the future of society, not just for commercial research and innovation. The article examines the applications of AI in the assessment of business ethics, which is one of the areas where AI is most relevant and inventive.

Of the 311 papers obtained, 236 articles are related to clusters related to AI and ethics, where of this total, 80 articles related to the cluster of AI mention ethical issues in their titles. In addition, 26 articles present in the cluster related to ethical issues also include the term "artificial intelligence" or "AI" in their titles. This indicates the importance of AI ethics in various areas of research.

The work contributes by providing an up-to-date review of the state of the art on the ethical concepts of AI in business. It also proposes a research agenda based on the analysis of the selected articles. Thus, students, teachers and researchers can benefit from this article as it provides a top-of-the-art review and research agenda on the ethical concepts of artificial intelligence (AI) in Business. It serves as a valuable resource to understand the current scenario of AI ethics in the field of business. Business professionals and professionals can also benefit from the usefulness of this article, as it highlights the relevance of AI ethics in various areas of knowledge and its impact on business practices. It discusses the ethical issues associated with the implementation of AI in business and proposes recommendations for responsible governance of AI systems.

Individuals interested in the future implications of AI in society can get insights from this article, as it examines the applications of AI to the assessment of business ethics and emphasizes the importance of AI ethics for a digital society. Furthermore, researchers and academics focusing on AI ethics, business ethics and the intersection of AI with business may consider this article valuable for its comprehensive analysis of selected articles and for its proposal for a research agenda in that area.

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