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The Implications of Artificial Intelligence for Business Management and Marketing

Oana Pricopoaia★, Carmen Oprit Maftei★★, Andrei Vizitiu★★★, Dorin Iancu★★★★ , Ştefan Adrian Susanu★★★★★

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ABSTRACT

In the algorithmic age, managers are not just managing the activities within the firm, they have become more knowledgeable and better able to understand and use emerging technologies to guide their businesses more effectively. Therefore, artificial intelligence (AI) must be effectively integrated into a business's processes, as through the use of machine learning algorithms, companies can optimize supply chains, anticipate customer requirements and personalize customer experiences. By integrating technologies and AI into company processes, risks can be reduced and operational efficiencies maximized, demonstrating a proactive approach from managers and marketers. Traditional or classical management is based on linear processes and decisions made based on the experience and intuition of leaders, but in the digital era data, technologies and algorithms have become extremely important factors in decision making. In this study we used the VOSviewer software to determine the bibliometric map, identifying which topics have been addressed by researchers in recent years in academic papers and the relationships between keywords. The aim of this research is to identify both the benefits and drawbacks associated with the integration of AI within a firm from the perspective of the specialists. The bibliometric maps help us to identify the main topics addressed in academic papers, observing trends over time and topics of interest in order to understand the evolution of the research field.

1. Introduction

Organizational management is currently facing numerous challenges as well as opportunities due to the significant evolution of technologies, especially artificial intelligence (AI). In the contemporary digital age, also known as the algorithmic era, technological innovations have completely transformed the way companies conduct their daily activities, fundamentally redefining the concepts of human collaboration, management and marketing. Thus, new technology can collaborate across many domains (Kambur & Akar, 2022).

Significant innovations in various sectors optimize processes, increasing efficiency and productivity in organizations. Algorithms have the ability to analyze particularly large amounts of data in a relatively short time, allowing managers to make objective decisions. Moreover, AI-based marketing analytics tool can assess the suitability of product design to customer needs and customer satisfaction (Dekimpe, 2020). Thus, firms can adjust their offerings effectively, ensuring that the products launched on the market are in line with consumer expectations and preferences.

The success of AI depends primarily on how it is integrated into the workforce. Human collaboration is central to the development and application of artificial intelligence, and for great results, people must be involved. Well-trained employees can utilize these new technologies to understand how to collaborate with algorithms in decision-making. According to Özgül (2018), innovation is a determinant of entrepreneurship, moreover innovation is the result of curiosity. Kanbur and Ozger (2016) stated that creative employees support entrepreneurship and these employees can perform better.

Engaged and creative employees directly contribute to innovation and organizational adaptability in the face of market changes. Moreover, these employees more readily accept the use of AI in organizations. Murphy (2006) emphasized that it is appropriate to use AI technologies in the human resources department because recruiters cannot always make very objective decisions in selecting candidates. The new technologies analyze data objectively, identifying potential candidates based on clear and relevant criteria, thus helping to optimize the recruitment process and better match candidates to available positions.

★, ★★, ★★★, ★★★★★Dunarea de Jos University of Galati, Romania, ★★★★Valahia University of Targoviste, Romania. E-mail addresses: oana.pricopoaia@ugal.ro (O. Pricopoaia – Corresponding author), carmen.maftei@ugal.ro (C. Oprit Maftei), andrei.vizitiu90@yahoo.com (A. Vizitiu), dorin.iancu@gmail.com (D. Iancu), susanustefan909@gmail.com (S.A. Susanu)

The synergy between humans and AI can be observed in various domains, as human and AI collaboration leads to improved quality of service and increased efficiency within the firm. AI presents significant influences in marketing as new technologies allow firms to personalize communication and offers in a way that was impossible before. AI technologies do not exhibit unstable behavior like humans, they generally exhibit consistent behavior. Bader and Kaiser (2019) emphasized that more objective decisions are made when algorithms and AI are included in the decision-making process, thus algorithmic decisions can be presented more quickly, objectively, and accurately, as opposed to human decision-making based on experience and intuition.

AI and entrepreneurship are valuable components that companies need for sustainable growth. In addition, when technological innovations such as AI, which are developing rapidly in competitive conditions, are not applied to businesses, there can be some problems in achieving success. In order to increase the performance of human resources, which is one of the most important departments of enterprises, it is necessary to support artificial intelligence and be entrepreneur-oriented (Kambur, 2021). The integration of artificial intelligence in the HR department can improve the efficiency of recruitment processes, talent management and employee development, contributing to increased organizational competitiveness and adaptability to market changes.

Moreover, digital technologies allow personalization of communication and offers to target audiences. AI algorithms have the ability to analyze consumer behaviors and can predict future trends, allowing marketers to create targeted and highly effective campaigns. AI used in marketing can analyze users' online behavior to deliver relevant ads in real-time. Digital technologies not only improve user experience but also significantly increase conversion rates for businesses. AI can also provide automation for many marketing processes, such as managing email campaigns or analyzing social media sentiment, so marketers can focus on overall strategy and creative while repetitive tasks are handled by algorithms.

The digital age has transformed management, human collaboration and marketing. Integrating AI into business processes offers significant opportunities for improving efficiency and making objective and informed decisions. We must emphasize that AI integration depends on the ability of organizations to effectively combine human skills with the power of algorithms. Therefore, AI has a particularly important role in many domains, but the symbiotic collaboration between humans and artificial intelligence must be taken into account. Soleimani (2018) states that AI techniques can be implemented in (1) optimization, (2) prediction, (3) modeling and simulation, and (4) decision support. Implementing AI techniques enables organizations to optimize processes, make more accurate forecasts, create complex models for realistic simulations, and provide decision support. Thus, it helps to improve performance and efficiency in different economic sectors and industries.

AI can analyze multiple channels of content and communication, generating summaries, establish relevant topics (for emerging issues), isolate proprietary and confidential knowledge, and present reusable information that is immediately applicable in novel situations (O'Dell & Davenport, 2019). Rapid technological advances and the widespread deployment of artificial intelligence have transformed the global economy, influencing multiple aspects of society. Technological change marks a new chapter in human evolution characterized by the widespread use of algorithms and artificial intelligence to automate and optimize processes in various domains.

2. Literature review

In this section we review in detail the existing literature on the impact of AI on management and marketing activities and processes in organizations, highlighting key insights and research gaps. We note that the existing literature emphasizes that AI significantly influences management decision-making. AI and digital technologies have an important role in transforming organizational management, human collaboration and marketing. Artificial intelligence, according to Russell and Norvig (2016), refers to machines (computers) that mimic the cognitive and affective functions of the human mind. These functions include learning, reasoning, problem solving, perception and natural language understanding. AI does not specifically focus on mimicking the affective functions of the human mind, such as emotions or consciousness, but focuses on the cognitive aspects and performance of intelligent tasks with algorithms and data. With AI, some features of intelligence that exist in humans are brought into computer science.

In the algorithmic era, organizational management has become dependent on new technologies, which are necessary for improving operational efficiency, data-driven decision making and anticipating market needs. In their paper, Paschen et al. (2019) summarized that intelligence refers to the efficient perception and processing of data and its transformation into knowledge, which is then used for result-oriented behavior. Therefore, intelligence requires the use of a combined set of processes to be effective, such as environmental perception, memory, reasoning, problem solving, learning, and goal-oriented action (Paschen et al., 2019).

AI in management redefines the competencies and skills needed to manage teams and complex processes. Technological advances frequently lead to structural shifts in business paradigms, as is the case with AI in marketing (Kumar, Rajan, Ven katesan, & Lecinski, 2019). AI's enhancements enable companies to remain competitive in increasingly data-driven marketing landscapes (Nunan & Di Domenico, 2013), so many

companies have invested in AI to facilitate various marketing-related tasks such as chatbots, customer experience optimization, customer research and content creation, customer relationship management, image recognition, search engine optimization, personalization, profiling, and strategic planning (Haenlein & Kaplan, 2019).

Human collaboration with AI technology is indispensable, even though AI offers multiple advantages, the success of its use depends very much on how it is combined with human intelligence and creativity. Collaboration between the human side and AI is necessary to maximize the potential of both sides, but also to create a harmonious and productive working environment. The idea that artificial intelligence could be applied in innovation environments is also supported by the rapid development of artificial intelligence and machine learning, which indicate that significant and exciting changes are coming (Lu, 2019; Varian, 2018; Ward et al., 2014).

Moreover, marketing is another area where the importance of AI is being observed, thus, AI technologies enable personalization and automation of customer communication, thus providing unique opportunities to increase customer trust and loyalty. Artificial intelligence has the ability to personalize offerings to meet customer needs (Kumar et al., 2019). Machine learning algorithms can analyze behavioral data and preferences of the target audience, providing recommendations and products tailored specifically to each consumer. In this way they help to increase customer satisfaction and optimize sales performance.

AI tools are useful for determining customer expectations, as AI is a widely used emerging technology that enables companies to track real-time data to quickly analyze and respond to customer needs (Wisetsri, 2021). Also, AI systems can generate dynamic social graphs that capture the interconnections between people and teams to provide a comprehensive view of knowledge sources and bottlenecks in the organization (Jarrahi, 2019).

Integrating AI into the marketing process improves the effectiveness of advertising campaigns by enabling a deeper understanding of consumer behavior. Artificial intelligence can support marketers in strategizing and planning marketing activities, helping with segmentation, targeting and positioning (Volkmar, Fischer & Reinecke, 2022).

AI can provide personalization and tailor the message according to the customer's profile and preferences (Huang & Rust, 2021). Content analytics ensures that the value and effectiveness of messages are optimized, thus customer likes and dislikes can be tracked in real time with the help of emotive AI algorithms. Social media content analytics provides new opportunities for marketers to align their marketing strategies based on customer preferences (Tripathi & Verma, 2018; Verma, 2014). Monitoring and analyzing activity on social media platforms, leads to valuable insights about consumer interests and behaviors. Using text analytics and machine learning techniques, trends, sentiments, and customer preferences are identified to personalize messages and offers, thereby improving the effectiveness of their marketing campaigns and creating stronger connections with their target audience. Artificial intelligence can assist marketers in determining a company's strategic direction (Huang & Rust, 2017).

AI is a rapidly developing technology, this technology aims to make life easier for individuals, increase their standard of living and open new horizons for humanity (Şen, 2018). Automating processes with AI provides additional opportunities for performance and productivity improvement (Huang & Rust, 2018). By using AI, relationships and collaboration patterns within organizations can be identified, thus facilitating the management and optimization of information and knowledge flow. These aspects help to improve operational efficiency and identify potential weaknesses or bottlenecks that can be addressed to support continuous innovation and development in the organization.

3. Research methodology and stages

Through this research we aim to explore how AI is influencing decision-making processes in organizations while identifying the benefits and challenges associated with its integration. By analyzing scholarly articles we aim to provide a clear framework to explore the impact of artificial intelligence in management, human collaboration and marketing, providing an objective perspective on the changes brought about by the algorithmic era. We have identified the importance attached by practitioners to artificial intelligence and digital technologies due to the fact that it can analyze huge volumes of data, providing managers with accurate and actionable insights, thus facilitating data-driven decision-making. Moreover, some authors argue that AI can reduce uncertainty and risk through accurate forecasting and predictive analytics. The success of AI in management depends on managers' abilities to understand and interpret the results generated by algorithms. Thus, it is necessary to adapt organizational culture to support the use of AI and ensure effective implementation.

Through the bibliometric analysis the research will provide an objective, clear and comprehensive view of the impact of AI on the organization from a management and marketing perspective. We also aim to identify best practices and challenges associated with its integration in various domains. Thus, the study explores how AI influences decision-making processes, human collaboration and marketing strategies in the algorithmic era. This study will contribute to a deeper understanding of how AI can be used to improve organizational performance and create competitive advantage in the contemporary global marketplace. In this

context, the central research question is: How does artificial intelligence influence decision-making processes, human collaboration and marketing strategies in the algorithmic era?

Thus, we utilized the Web of Science database for the collection of scientific articles, which we subsequently processed using the VOSviewer software. The keywords used to design the bibliometric map are: management, algorithmic era, human collaboration, marketing and artificial intelligence (AI). We selected articles from 2019 to 2024, research domain Operations Research Management Management Science and obtained 6937 publications (Figure no. 1).

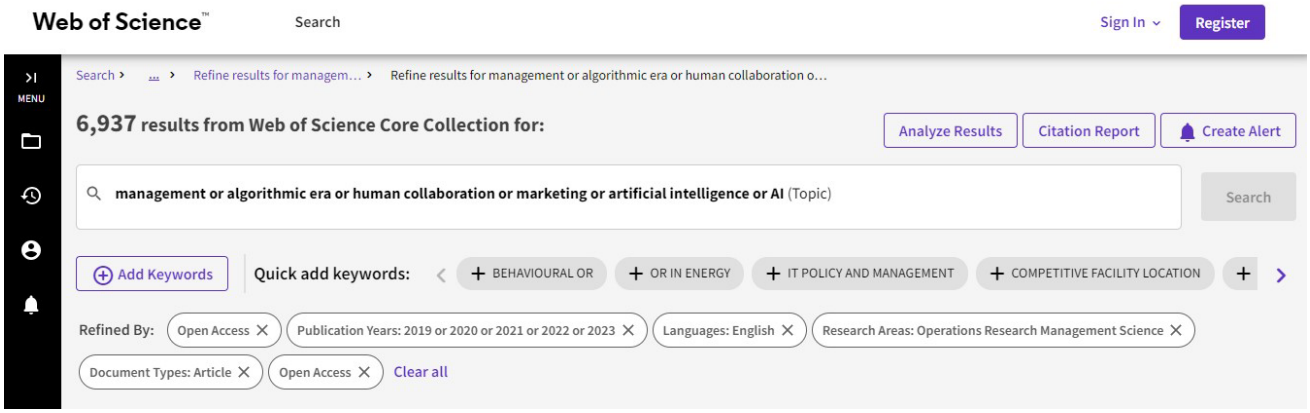

Figure 1. Web of Science scientific publications database filtering results

Source: print screen Web of Science

In the table below, we have presented the evolution of the number of articles in the literature, thus we observe that since 2021 the interest of specialists in studying the role of artificial intelligence in organizational management, but also in marketing, has greatly increased. Rapid developments in the field of AI, including machine learning, big data analytics, and natural language processing, have created new opportunities for the application of these technologies in organizations. The rapid growth in the number of AI-related academic publications is justified by the important role attributed to artificial intelligence within organizations. It should be noted that 437 publications have been identified for the year 2024 by July. This number is justified given that the year 2024 has not yet ended. The table below shows the number of publications by year of publication.

Table 1 Filtering results of the Web of Science scientific publications database, distribution between 2019 and 2024

Year of publication	No. of publications
2024	437 (until July)
2023	1495
2022	1414
2021	1258
2020	1075
2019	892

Source: own processing based on data from Web of Science

For the present research we loaded the database of selected publications according to the above criteria into VOSviewer, version 1.6.19 in RIS format. We created a bibliometric map in which keywords are grouped into distinctly colored clusters. This map highlights the links between important concepts such as management, algorithmic era, human collaboration, marketing, and artificial intelligence (AI) in the scientific publications analyzed.

The size of words and nodes on the map indicate the relevance of the identified key concepts. More prominent words appear more often in the authors' research, and the smaller distance between them signifies a stronger connection. The curved line joining two words indicates that they appear together in an article, thus representing the link between the two key concepts. The thick lines connecting the keywords indicate strong connections and significant relationships between the concepts discussed in the analyzed publications. Keywords located further away from each other have a weaker connection, while closer words indicate a stronger connection. Both line thickness and color intensity signal how frequently two keywords appear together in a publication.

4. Bibliometric research results

We entered the data into the VOSviewer software and generated the Network Visualization map. This graphically illustrates the links between the keywords found in the analyzed publications. The Network

Visualization map provides an overview of the keywords in the selected database, facilitating an objective analysis of the scientific data. Four clusters were identified in this research. Clusters are groups of words clustered around common topics or themes (Figure no. 2).

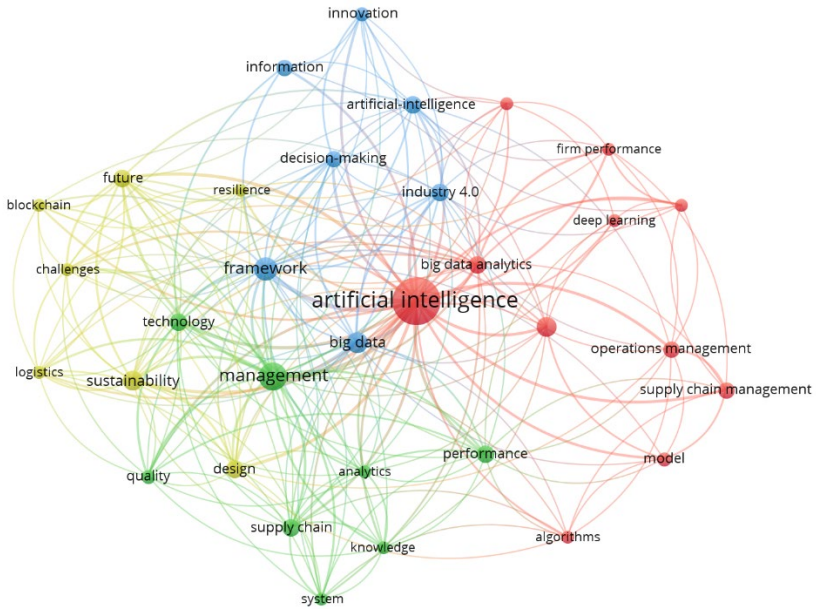

Figure 2. Network Visualization

Source: output soft VOSviewer version 1.6.19

In the above figure we observe four different clusters, the first cluster is red, the second cluster is green, the third cluster is blue and the fourth cluster is yellow. In the first cluster the largest nodes are represented by the keyword's artificial intelligence, supply chain management, algorithms and big data analytics. In the second cluster we notice: management, performance, knowledge and analytics. In the third cluster we observe the following words with a higher frequency of occurrence: *big data, decision making, framework, industry 4.0 and innovation.* The fourth cluster contains the following significant nodes: *sustainability, future, logistics and design.*

The following figure shows the publication network overlay. The colors blue, green and yellow explain the frequency of occurrence of keywords within the articles in the formed publication base. The color blue signifies a lower score, thus a low number of keyword occurrences in the articles, green shows an average occurrence, and yellow is used for high frequency occurrences. This is also confirmed in Table 1, which shows that from 2021 the number of publications in the research area Operations Research Management Science started to increase.

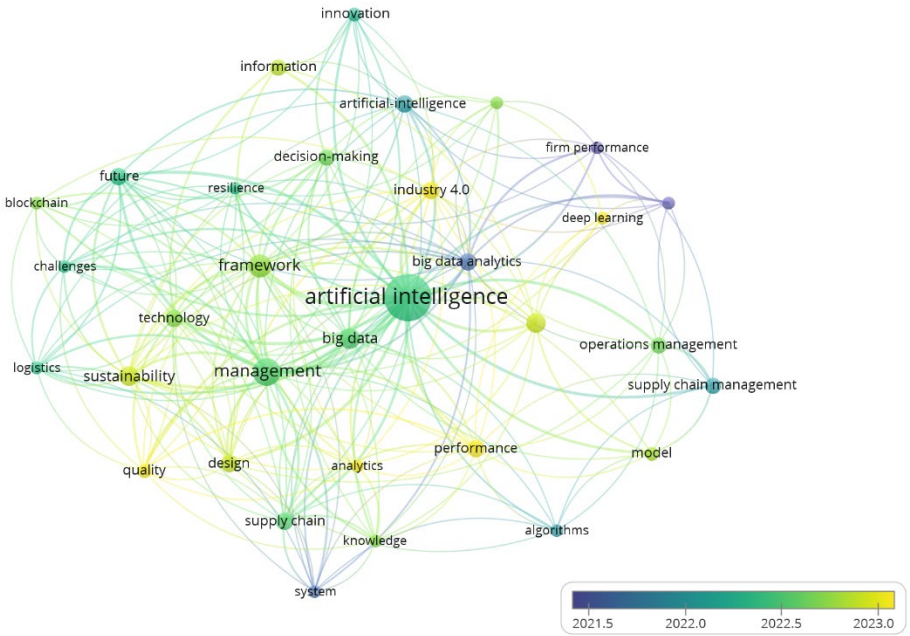

Figure 3. Overlay visualization

Source: output soft VOSviewer version 1.6.19

We evaluated the density of publications both by visualizing the density of items and by visualizing the density of clusters. This density is indicated by three colors: blue, green and yellow. The color blue reflects low density, green indicates medium density and yellow represents high density. If the keyword is represented by a yellow node then the density of articles around that concept is higher. Article density indicates the authors' interest in a particular research topic. If the keyword is represented by a blue node then the density of articles around that topic is lower. In the figure below, it can be seen that the highest densities are found around the terms: *artificial intelligence, management, framework* and *future.*

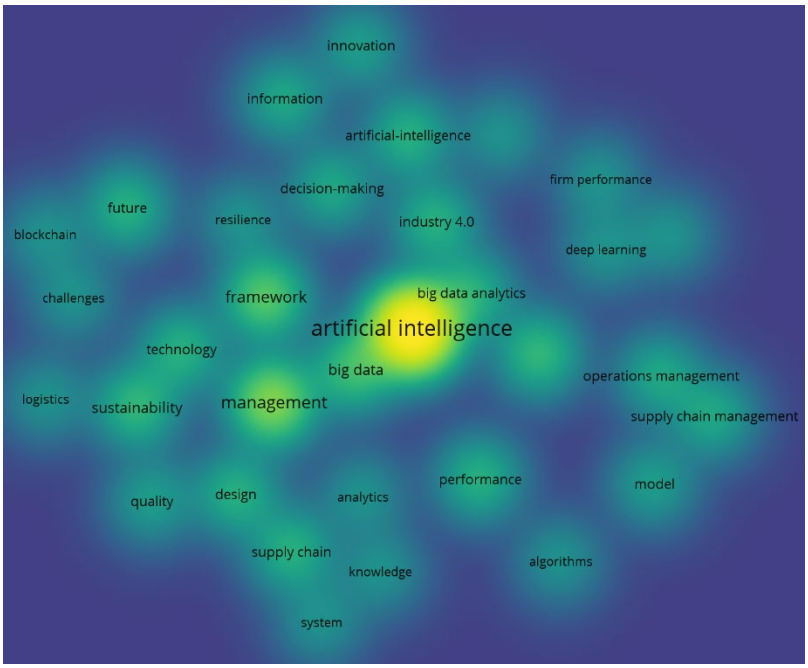

Figure 4. Item density visualization
Source output soft VOSviewer version 1.6.19

All keywords have been organized in clusters, allowing visualization of the density of each cluster. The individual representation of each cluster highlights the frequency of occurrence and their links between different publications. The figure below shows that each cluster contains a keyword with a high weight: artificial intelligence (cluster 1 - red), management (cluster 2 - green), framework (cluster 3 - blue) and sustainability (cluster 4 - yellow).

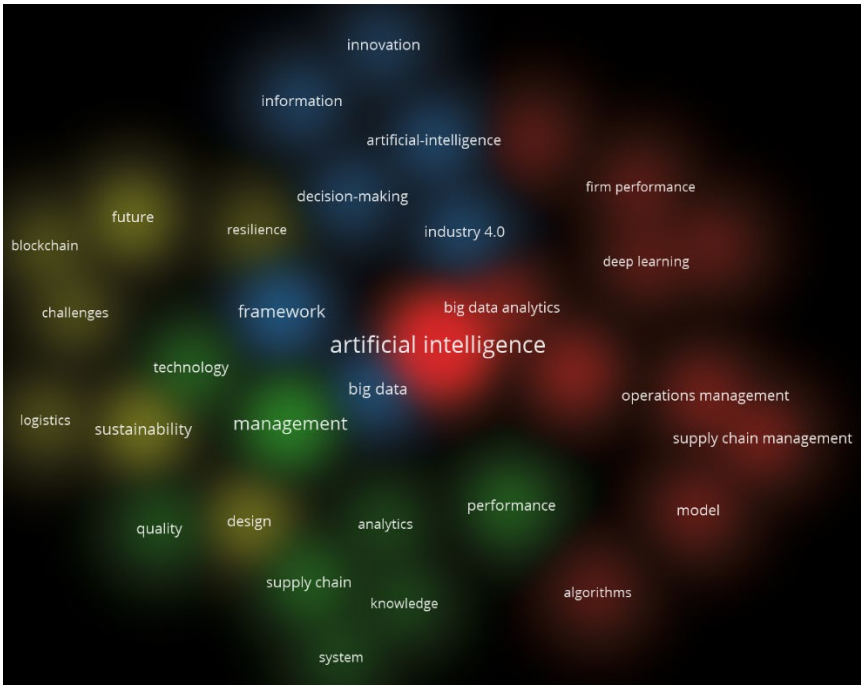

Figure 5. Density visualization cluster
Source: output soft VOSviewer version 1.6.19

After processing in VOSviewer the selected articles from the Web of Science database, the key items are organized into distinct clusters. The cluster is the group of items included in a bibliometric map. Key concepts within a cluster are conceptually similar. Keywords are interconnected by common research topics, domain-specific terminology and semantic associations. By grouping them in the same cluster it is possible to identify characteristics or links that make them relevant in a specific research context. Below we present each cluster and its characteristic keywords.

In Table 2, cluster 1 is presented, we observe a very strong link between artificial intelligence and algorithms, big data analytics, deep learning, firm performance, machine learning, modeling, operations management, predictive analytics, risk management and supply chain management.

These linkages reflect a broad integration of advanced technologies for process optimization, increased competitiveness and data-driven decision making, while highlighting the interdisciplinary nature of these fields. Combining artificial intelligence with risk management and supply chain management depends on collaboration between specialists from different fields to develop integrated and effective solutions. Moreover, big data analytics and predictive analytics suggest an increased reliance on data in decision-making. Operations and supply chain management, together with predictive analytics and risk management, suggest the use of digital technologies and artificial intelligence to improve process efficiency and effectiveness

Table 2. Cluster 1 (red)

Keyword	Cluster	Links	Total link strength	Occurrences
algorithms	1	10	11	3
artificial intelligence		32	146	41
big data analytics		21	35	6
deep learning		6	7	3
firm performance		9	14	3
machine learning		12	18	7
model		8	13	4
operations management		11	17	5
predictive analytics		9	13	3
risk management		10	11	3
supply chain management		8	15	5

Source: own processing based on data from VOSviewer software version 1.6.19

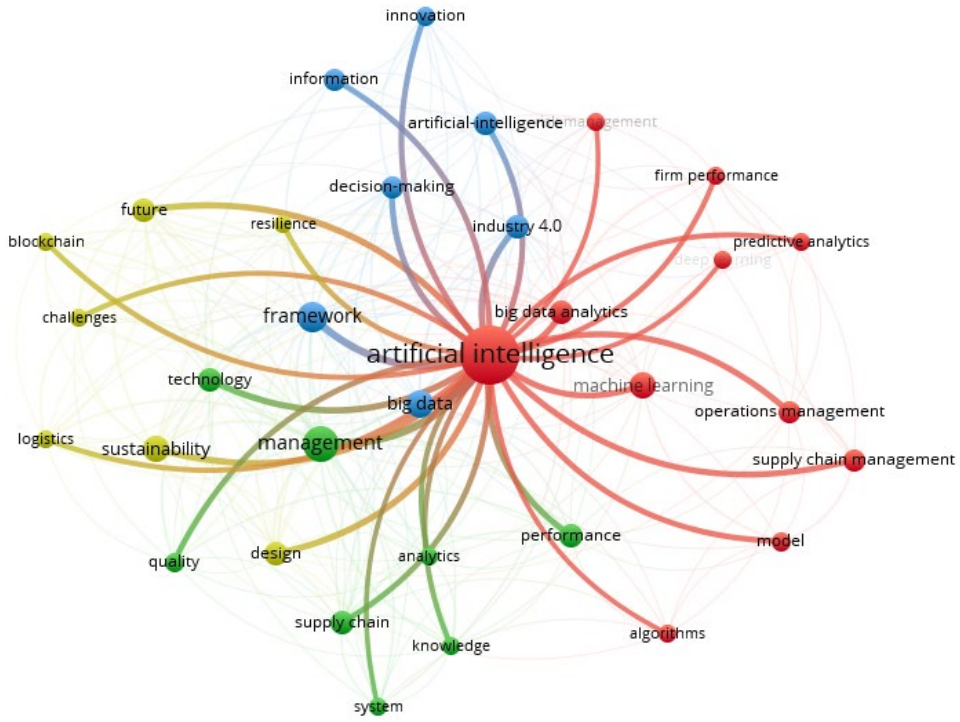

Figure 6. Cluster 1 (red)

Source: output soft VOSviewer version 1.6.19

In cluster 2 presented in Table no. 3 we observe that management is at the center of the analyzed publications. The strong linkage between management and analytics, knowledge, quality, supply chain, system

and technology indicates the high interest of researchers in studying these key concepts in their articles. These keywords suggest the complexity and diversity of the challenges that managers must manage in a modern organization, ensuring long-term success through the effective use of available resources and capabilities.

At the heart of management is analysis, which is used to evaluate data and information, to understand context and to make informed and strategic decisions. Moreover, management involves the use and management of knowledge to understand and solve organizational problems, ensuring that decisions are based on sound data and expertise. The link between management and quality suggests the need to implement and maintain high standards for the products and services offered by the organization, ensuring that they meet or even exceed customer expectations.

Supply chain management is a hotly debated topic among supply chain specialists, it requires the efficient coordination of the flow of goods, information and services from suppliers to customers to ensure timely and cost-effective product availability and quality. Management also has direct implications in technology as it involves the use and management of modern technologies to support and optimize organizational processes, improving efficiency and responsiveness to changes in the business environment.

Table 3. Cluster 2 (green)

Keyword	Cluster	Links	Total link strength	Occurrences
analytics	2	13	18	3
knowledge		12	18	3
management		26	75	14
performance		16	25	6
quality		15	22	4
supply chain		16	25	6
system		13	18	3
technology		17	27	6

Source: own processing based on data from VOSviewer software version 1.6.19

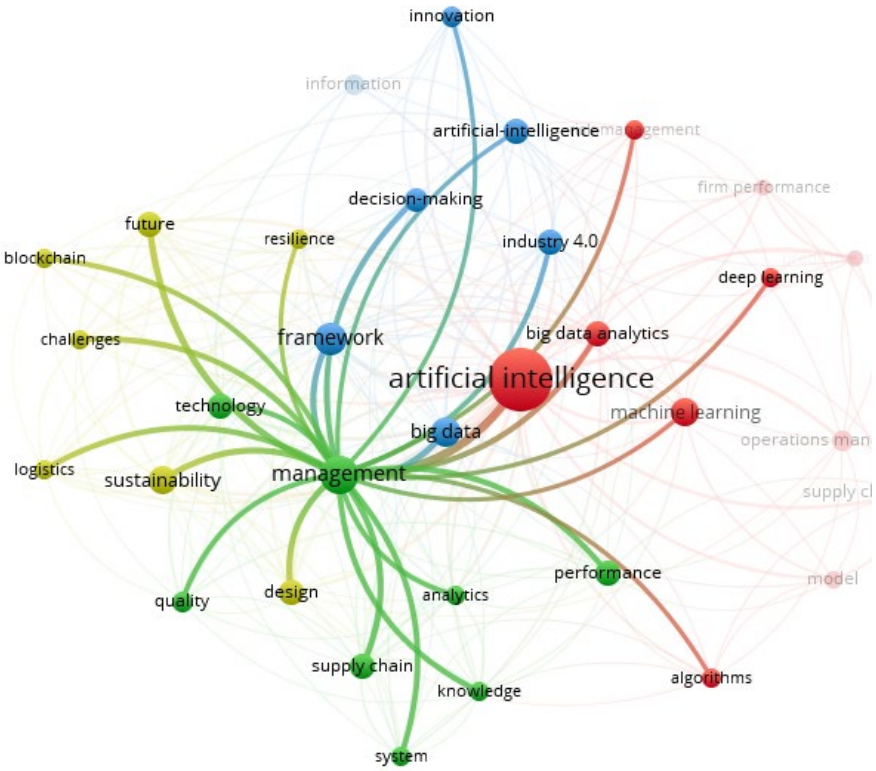

Figure 7. Cluster 2 (green)

Source: output soft VOSviewer version 1.6.19

The third cluster focuses on the key term: framework. It is closely related to artificial intelligence, big data, decision making, industry 4.0, intelligence and innovation. The framework can be organizational or regulatory as it can provide the necessary structures and guidelines for implementing modern technologies such as artificial intelligence and big data management. Organizational or regulatory frameworks provide an objective context and an effective basis for innovation and development in Industry 4.0. Artificial intelligence needs to be well integrated into a firm's business to enable big data management that can support accurate data-driven decision making to maximize operational efficiency and competitiveness in modern industry.

Organizational or regulatory frameworks establish processes for making informed and effective decisions based on the analysis and interpretation of data provided by artificial intelligence systems, thus contributing to better corporate governance and increased organizational performance. Moreover, setting objective frameworks stimulates innovation. This creates a favorable environment where companies can experiment with innovative technologies to develop new products and services and improve existing processes.

The flow of information and its effective use must be facilitated by organizational frameworks. Moreover, they must ensure the security and confidentiality of data and enable the transparent and accountable exchange of information between stakeholders.

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Table 4. Cluster 3 (blue)

Keyword	Cluster	Links	Total link strength	Occurrences
artificial-intelligence	3	15	21	6
big data		21	39	8
decision-making		15	25	5
framework		23	50	10
industry 4.0		17	27	6
information		6	11	5
innovation		10	15	4

Source: own processing based on data from VOSviewer software version 1.6.19

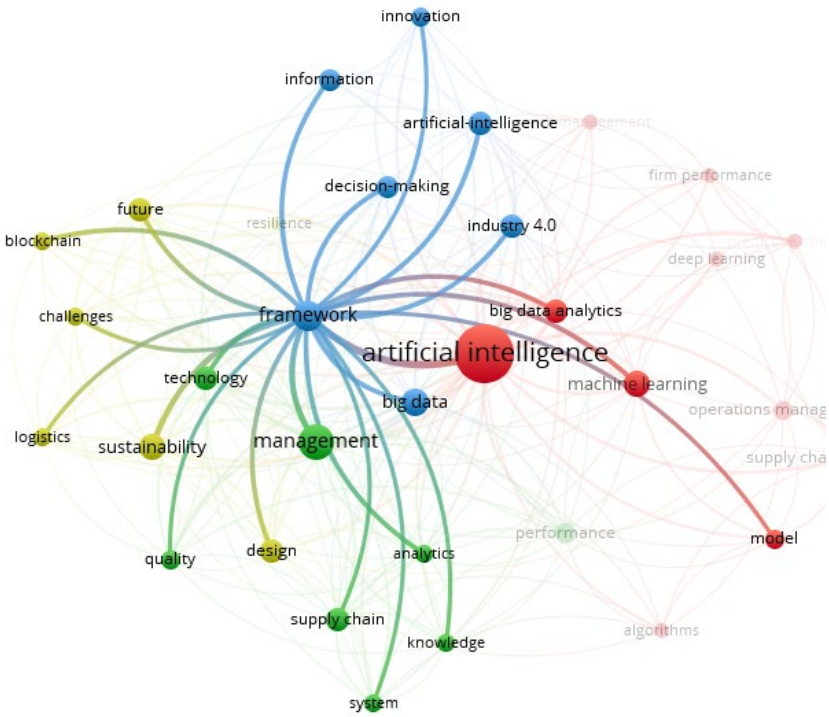

Figure 8. Cluster 3 (dark blue)

Source: output soft VOSviewer version 1.6.19

The fourth cluster highlights the keyword sustainability. This term has strong links to blockchain, challenges, design, future, logistics and resilience. New technologies can support sustainability initiatives by providing traceability and transparency across industries. Moreover, technology and digitization enable detailed tracking of products and raw materials, as well as in-house activities certifying compliance with sustainability standards and reducing fraud and inefficiencies. Climate change is a major threat to

sustainability, with greenhouse gas emissions from different activities contributing to global warming, affecting ecosystems and living conditions.

There is a close relationship between sustainability and the future because sustainability is about the ability to meet today's needs without compromising the ability of future generations to meet their own needs. Logistics efficiency can also have a significant impact on environmental footprint and resource use. Effective implementation of sustainable practices in logistics is necessary as it reduces negative environmental impacts and can bring significant cost savings and operational improvements. Resilience is necessary to develop systems capable of coping with change and threats. At the level of organizations, resilience implies the ability to recover quickly from various difficulties or losses and to turn challenges into opportunities for growth and innovation.

Table 5. Cluster 4 (yellow)

Keyword	Cluster	Links	Total link strength	Occurrences
blockchain	4	10	15	3
challenges		15	23	3
design		16	30	6
future		17	36	6
logistics		14	22	3
resilience		12	14	3
sustainability		19	38	7

Source: own processing based on data from VOSviewer software version 1.6.19

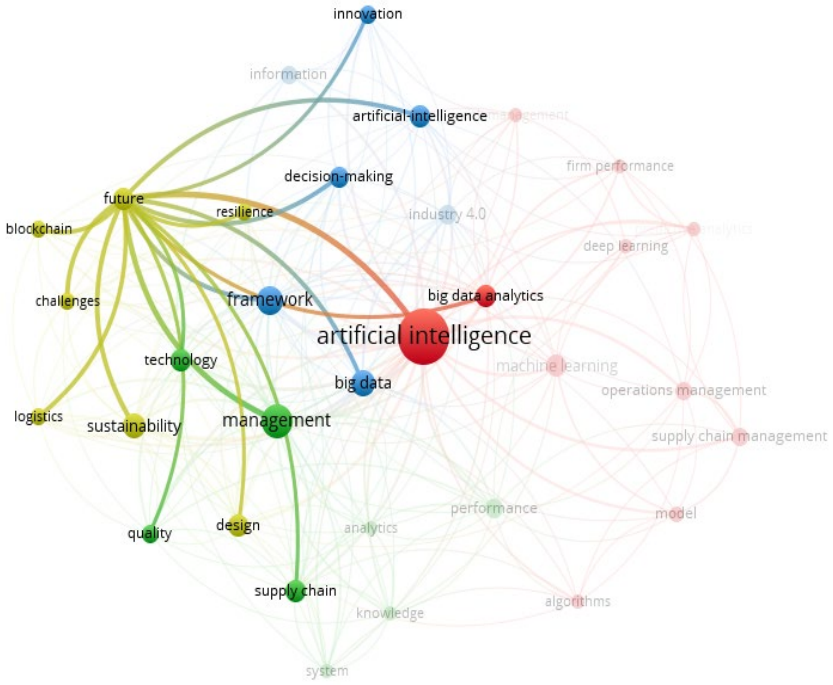

Figure 9. Cluster 4 (yellow)

Source: output soft VOSviewer version 1.6.19

Artificial intelligence has revolutionized both management and marketing. AI is an advanced technology, making its mark on the way companies are run and managed. AI brings profound changes in decision-making processes, operational efficiency and organizational strategy. AI also has direct effects in marketing as it has revolutionized the way companies interact with customers and promote their products or services. Using advanced data analytics and the ability to learn from interactions, AI enables marketers to personalize campaigns, optimize strategies and improve customer experiences.

Publications and scholarly articles have an important role to play in analyzing the implications of artificial intelligence in the management and marketing activities of companies to better understand the evolution of the phenomenon, the opportunities it offers, and the problems or shortcomings that need to be eliminated. We believe that management and marketing are interconnected and are essential for the success of any organization. Management enables efficient coordination of resources and adaptability to market changes, while marketing helps to identify and meet customer needs, facilitating product promotion and brand building. If AI is used appropriately, taking into account both benefits and risks, it can ensure the long-term growth and sustainability of a business.

5. Conclusions

Collaboration between humans and artificial intelligence is an intensely debated topic in the literature, humans working to improve performance and innovation. AI technologies can take over repetitive tasks, allowing employees to focus on activities that require creativity and critical thinking. Digital technologies have significantly changed marketing strategies and tactics. For example, AI has the ability to personalize customer experiences by analyzing customer behavior and anticipating their needs. New technologies enable the creation of highly targeted marketing campaigns, which leads to increased organizational efficiency.

AI enables the automation of many marketing processes, in addition, the use of AI in email campaign management and market segmentation stands out. Digital technologies not only save time, but also enable well-informed decisions that are data-driven. For all the benefits it brings, clear regulatory frameworks are needed to protect consumer rights and ensure the ethical use of data. AI is significantly influencing decision management, human collaboration and marketing. However, the long-term impact on organizational culture and the skills needed by the workforce has not been fully explored, with gaps that require further study. A better understanding of the ethical and privacy issues related to the use of AI in marketing is also needed. This study presents both potential benefits and challenges associated with AI integration, providing a framework for further exploration in this study.

With all its challenges, AI is a particularly important factor in organizational management, human collaboration and marketing because it helps improve management decision-making. Digital technology reduces risk and uncertainty, allowing managers to access detailed information and make more accurate predictions. Implementing AI into organizational decisions depends on managers' ability to correctly interpret data and adapt organizational culture to support the use of these technologies. To take full advantage of the opportunities offered by AI and digital technologies, organizations must take a holistic approach, integrating AI strategically and ensuring the workforce is prepared to work with these technologies.

In addition, ethical and privacy challenges need to be addressed by developing clear regulatory frameworks and sound ethical practices. Taking all these issues into account, organizations can run operations successfully in the algorithmic era, gaining competitive advantages and promoting innovation and efficiency. Today, artificial intelligence (AI) has become a key element in transforming many aspects of society and the global economy. So AI is not just a technological tool, but a revolutionary force that is redefining the way companies manage their operations and interact with the market.

AI proves its importance in both the management and marketing of a company, offering innovative solutions to optimize processes and improve relationships with employees and customers. Moreover, AI enables firms to become innovative and more adaptable to market changes. Analyzing data collected from customers and the business environment can bring new opportunities for firms. This helps firms stay competitive and quickly adjust their strategies according to market conditions. In management AI has the ability to streamline processes by automating repetitive tasks, saving time for strategic activities.

In addition, big data analytics enable informed decisions based on detailed insights and automatically identified trends. The importance of artificial intelligence can also be seen in marketing, thus personalizing customer experiences by tailoring messages and offers based on their behavior and preferences, thus increasing satisfaction and loyalty among target audiences. The role of AI-powered virtual assistants and chatbots is to improve customer service by providing fast and efficient support. By continuously monitoring data and detecting various malfunctions that could indicate potential problems, AI contributes significantly to risk management. Integrating AI into management and marketing processes within firms not only streamlines operations, but also opens up new prospects for development and growth, and is essential for competitiveness in the digital age.

The interest of specialists in this field is steadily growing in view of the significant potential of artificial intelligence applied to marketing and management. Artificial intelligence can transform the way companies operate, interact with customers and optimize their internal processes. Moreover, AI can be seen as a revolution in the way companies conduct their marketing and management activities, providing powerful tools for growth and innovation. The strategic deployment of these technologies turns challenges into opportunities, ensuring long-term success in an increasingly dynamic and competitive environment.

References

1. *Bader, V., & Kaiser, S. (2019). Algorithmic decision-making? The user interface and its role for human involvement in decisions supported by artificial intelligence. Organization, 26(5), 655-672.*
2. *Dekimpe, M. G. (2020). Retailing and retailing research in the age of big data analytics. International Journal of Research in Marketing, 37(1), 3-14.*
3. *Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. California management review, 61(4), 5-14.*
4. *Huang, M. H., & Rust, R. T. (2017). Technology-driven service strategy. Journal of the Academy of Marketing Science, 45(6), 906-924.*
5. *Huang, M. H., & Rust, R. T. (2018). Artificial intelligence in service. Journal of service research, 21(2), 155-172.*
6. *Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. Journal of the Academy of Marketing Science, 49, 30-50.*
7. *Jarrahi, M. H. (2019). In the age of the smart artificial intelligence: AI's dual capacities for automating and informating work. Business Information Review, 36(4), 178-187.*

8. *Kambur, E. (2021). The effect of artifical intelligence on human resources employees. Alanya Akademik Bakış, 5(3), 1479-1492.*
9. *Kambur, E., & Akar, C. (2022). Human resource developments with the touch of artificial intelligence: a scale development study. International Journal of Manpower, 43(1), 168-205.*
10. *Kanbur, E., & Özyer, K. (2016). ÇALIŞANLARIN BİREYSEL YARATICILIK DÜZEYLERİNİN İÇ GİRİŞİMCİLİK PERFORMANSLARINA ETKİSİ. Journal of Management and Economics Research, 14(2), 264-275.*
11. *Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. California Management Review, 61(4), 135-155.*
12. *Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. California Management Review, 61(4), 135-155.*
13. *Lu, Y. (2019). Artificial intelligence: a survey on evolution, models, applications and future trends. Journal of Management Analytics, 6(1), 1-29.*
14. *Murphy, M. (2006). Leadership IQ study: Why new hires fail. Public Management, 88(2), 33-37.*
15. *Nunan, D., & Di Domenico, M. (2013). Market research and the ethics of big data. International journal of market research, 55(4), 505-520.*
16. *O'Dell, C., & Davenport, T. (2019). Application of AI for knowledge management. CIOReview.*
17. *Özgül, E. (2018). Girişimcilik merakı ile yenilikçilik arasındaki ilişkide girişimcilik öz-yeterliliğinin aracılık rolü. Yönetim Bilimleri Dergisi, 16(31), 331-353.*
18. *Paschen, J., Kietzmann, J., & Kietzmann, T. C. (2019). Artificial intelligence (AI) and its implications for market knowledge in B2B marketing. Journal of business & industrial marketing, 34(7), 1410-1419.*
19. *Russell, S. J., & Norvig, P. (2016). Artificial intelligence: a modern approach. Pearson.*
20. *Şen, Z. (2018). Significance of artificial intelligence in science and technology. Journal of Intelligent Systems: Theory and Applications, 1(1), 1-4.*
21. *Tripathi, S., & Verma, S. (2018). Social media, an emerging platform for relationship building: A study of engagement with nongovernment organizations in India. International Journal of Nonprofit and Voluntary Sector Marketing, 23(1), e1589.*
22. *Varian, H. R. (2018). Artificial intelligence, economics, and industrial organization (Vol. 24839). Cambridge, MA, USA: National Bureau of Economic Research.*
23. *Verma, S. (2014). Online customer engagement through blogs in India. Journal of Internet Commerce, 13(3-4), 282-301.*
24. *Volkmar, G., Fischer, P. M., & Reinecke, S. (2022). Artificial Intelligence and Machine Learning: Exploring drivers, barriers, and future developments in marketing management. Journal of Business Research, 149, 599-614.*
25. *Ward, M. J., Marsolo, K. A., & Froehle, C. M. (2014). Applications of business analytics in healthcare. Business horizons, 57(5), 571-582.*
26. *Wisetsri, W. (2021). Systematic analysis and future research directions in artificial intelligence for marketing. Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12(11), 43-55.*