Mapping the Intersection of Marketing, Artificial Intelligence, and the Cooperative Sector: A Bibliometric Analysis

Sonia García-Lafuente, [1,*]
Javier Casanoves-Boix, [2]
José Manuel Guaita-Martínez [3] **and**
Domingo Ribeiro-Soriano [1]

[1] University Research Institute in Social Economy, Cooperativism and Entrepreneurship (IUDESCOOP), Universitat de València, Spain.
[2] Department of Marketing, Universitat de València, Spain.
[3] Center for Research and Management of Companies (CEGEA), Universitat Politècnica de València, Spain.
[*] Corresponding author Sonia García-Lafuente, Email: s.garcialafuente@gmail.com

ABSTRACT

Purpose: This study examines the role of marketing within the cooperative sector, as well as the potential of artificial intelligence (AI) as a strategic tool. The study aims to identify the main challenges and opportunities in cooperative marketing, evaluate the application of AI in these strategies and inform future research.

Methods: A bibliometric analysis was conducted using the Web of Science (WoS) database to classify academic publications and reveal thematic relationships. VOS-viewer was then used to map intellectual structures, while a Python-based co-occu-rrence analysis examined the links between cultural, regional, and thematic factors.

Findings: The findings highlight the growing intersection between marketing, AI, and the cooperative sector. A total of 15 research questions, grouped into five themes, were identified to guide future interdisciplinary studies. Integrating marketing and AI within the social economy could enhance the sustainability, competi-tiveness, and equity of cooperative business models.

Study limitations: Although exploratory, the study provides a comprehensive overview of the existing literature. However, limitations include reliance on the WoS database and a focus on English-language publications, as well as inevitable sub-jectivity in interpretation. Including other databases in future analyses could enrich the scope of the research.

Practical value: Overall, the study provides valuable insights into how techno-logical innovation, particularly AI, can align with the social and ethical values of cooperatives. It also establishes a foundation for further research and the develo-pment of frameworks that can strengthen the cooperative sector's sustainable and competitive marketing strategies.

1. Introduction

The current economy is shaped by globalized production and marketing systems (Abyre et al., 2018). Marketing is parti-cularly important for social economy organizations with limited resources (Tscheulin et al., 2021). Cooperatives promote demo-cratic participation and self-management (Czternasty, 2014), and forming alliances can enhance their competitiveness and sustainability (Child et al., 2019). They are associations formed to meet shared economic, social, and cultural needs through democratically controlled, jointly owned enterprises (Singh et al., 2022).

Meanwhile, artificial intelligence (AI) has become an inte-gral part of our daily lives, taking on a variety of new roles in many different industries and areas of public interest. It is a major driver of socioeconomic change (Jiang, 2022). Conse-quently, contemporary marketing has started to experiment with modern, cutting-edge technologies such as AI, incorpora-ting them into core operations to accelerate success (Chintala-pati and Pandey, 2022). Therefore, Basha (2023) recommends integrating AI into marketing activities to enhance corporate performance, profitability, and competitive advantage.

Focusing on AI, marketing, and cooperatives, De Andreis et al. (2021) argue that social businesses aiming to achieve sustainable development goals should consider using AI strategically to optimize resources and improve production efficiency. Chukkapalli et al. (2020) suggest more specifically that AI could enhance decision-making processes, encourage collaboration among cooperatives, develop predictive tools, and provide decision support within the cooperative sector. According to Siswanto et al. (2024), digital transformation wi-thin cooperatives therefore has substantial potential to pro-mote more inclusive and sustainable economic growth.

Ethics is also a fundamental factor to consider when using AI in marketing and the cooperative sector. Specifically, Ma-danchian and Taherdoost (2025) aim to help firms integra-te responsible AI principles into their innovation strategies, striking a balance between compliance, trust, and value crea-tion. Similarly, Gianni et al. (2022) emphasize the importance of democratic participation in ensuring systems are socially responsible and aligned. They propose frameworks that inte-grate ethics, transparency, and cooperation into decision-ma-

king processes. In the context of cooperative enterprises, Terras et al. (2025) demonstrate how a cooperative business model can effectively support AI and machine learning infrastructures while promoting democratic participation and equitable ownership.

Against this backdrop, the present study aims to highlight the importance of marketing in the cooperative sector and the profitability of using AI as a key tool. To this end, a bibliometric analysis will be conducted to address the following research questions (RQ): (RQ1) Does marketing maximize business management in cooperatives? (RQ2) Does AI play an important role in implementing marketing strategies in cooperatives? In addition to these research questions, the study will address the following objectives:

- Understand the challenges and opportunities that marketing presents to cooperatives.

- Recognize the challenges and opportunities presented by the application of artificial intelligence to cooperative marketing strategies.

- Explore the research that has been carried out in these areas to date.

- Generate knowledge to inform future research in the field of cooperative marketing.

The originality of this research is directly related to the chosen emerging theme. Although the cooperative sector faces challenges such as limited access to financing and competition with traditional businesses, there are opportunities for innovation and growth, depending on the sector in which a business operates (Herbes et al., 2021). Adopting a marketing strategy allows cooperatives to compete effectively in market-oriented economies, showcasing their adaptability and capacity for value creation (Sexton and Iskow, 2021). Furthermore, the application of AI as a marketing tool in cooperatives is a topic of great interest, given the scarcity of research focusing on the interplay between social enterprises, marketing, and artificial intelligence (Shaily and Emma, 2021). Taking this as a starting point, the study bridges a gap in the literature by providing a bibliometric review of the three aforementioned areas, thereby improving our understanding of them. Furthermore, by proposing areas for future research, the study addresses the recommendation of Dwivedi et al. (2021) to develop interdisciplinary frameworks that connect digitalization with alternative economic models.

This article is structured as follows: (1) The introduction and theoretical framework are presented; (2) the methodology and sample are detailed; (3) the results are analyzed and discussed; (4) the conclusions, divided into theoretical and practical contributions, are presented; and (5) the limitations of the work are discussed, and future lines of research are suggested.

2. Literature Review: Marketing, Cooperative Sector, and AI

2.1. The Role of Marketing in the Social Economy and the Cooperative Sector

In today's business environment, effective marketing strategies are essential in helping organizations adapt to market dynamics and meet consumer needs (Bazarova, 2024). As society evolves, alternatives to traditional economic models are sought to address social problems, resulting in the emergence of new models, such as the social economy. Promoting these social enterprises requires a new marketing approach (Grigore, 2013). Furthermore, Soares et al. (2025) highlight the growing recognition of the social value of marketing in academic literature and practical applications.

In regard to marketing in the cooperative sector, Ortmann and King (2007) emphasize the importance of marketing strategies for improving competitiveness and creating value. They point out that cooperatives have been facing product marketing challenges since ancient times. Consistent with this, Yasanallah and Bidram (2012) conclude that member satisfaction in a consumer cooperative depends largely on the effectiveness of the marketing mix. Furthermore, Dos Santos and de Carvalho (2019) assert that the six Ps of the marketing mix—product, price, promotion, place, people, and processes—are pivotal for implementing effective marketing strategies within cooperatives. However, Nilsson et al. (2012) argue that poor communication and alienation between members impedes product promotion and the development of a robust brand identity within a cooperative. They therefore recommend fostering trust and cohesion among members to facilitate effective marketing strategies.

As specific examples, Katchova and Woods (2011) propose three strategies through which food cooperatives can differentiate themselves and recruit members: (1) local food procurement based on the degree of participation in farming, (2) an intermediate phase based around the distribution center, and (3) a final phase based within the food cooperative itself. Meanwhile, Bauwens et al. (2016) indicate that marketing plays a crucial role in the development of wind energy cooperatives in Europe, which is decisive for improving the viability and expansion of community energy. Furthermore, in their study in Jamaica, Ishemo and Bushell (2016) assert that an effective marketing strategy can enhance product visibility and facilitate agricultural cooperatives' access to wider markets.

In conclusion, marketing is vital for social economy. It drives organizational growth, supports sustainability, and adds the value and differentiation that ensure the cooperative sector remains competitive.

2.2. Artificial Intelligence in Marketing and the Social Economy

In recent years, the concept of cooperative digital governance has been the subject of much debate. For example, Lakshmi and Unny (2025) claim that, during cooperatives' digital transformation, they should prioritize equity and collaboration over technological efficiency. To this end, these authors have proposed frameworks, tools, and shared learning platforms to facilitate technological integration while preserving cooperative identity. Meanwhile, Dueñas and Gómez (2021) examined how digital communication is managed in Spanish cooperatives. They found that, despite the increased use of digital tools, these were not being used strategically. The researchers suggested that more structured management could enhance transparency and participation in cooperative governance. Furthermore, Arrieta-Idiakez (2019) demonstrates that digital cooperatives offer a fairer model within the collaborative economy, empowering workers to organize and manage value collectively. This approach strengthens labor autonomy, reduces reliance on traditional platforms, and promotes democratic governance and equitable benefit distribution.

In today's landscape, artificial intelligence (AI) has attracted the attention of developed and developing countries alike as a potential driver of growth, particularly in the development of new information and communication technologies (ICTs) for AI and robotics (Lu et al., 2018). For instance, since the beginning of the pandemic, there have been attempts to implement surveillance technologies that strike a balance between large-scale data collection and protecting user privacy (Ribeiro et al., 2021). With regard to AI and marketing specifically, Verma et al. (2021) highlight AI's capacity to customize and optimize marketing strategies, facilitating extensive data collection and process automation. Meanwhile, Vlačić et al. (2021) highlight AI's potential to personalize customer experiences and improve consumer behavior. Dimitrieska et al. (2018) state that AI's power in marketing is evident in three core elements: (1) Big Data, (2) machine learning, and (3) powerful solutions. Building on this, Huang and Rust (2021) developed a three-stage framework for strategic marketing planning that incorporates multiple AI benefits: (1) mechanical AI to automate repetitive marketing functions and activities, (2) thinking AI to process data and make decisions, and (3) sentient AI to analyze human interactions and emotions. However, De Bruyn et al. (2020) observe that many managers still have an inadequate grasp of AI and its capabilities.

Regarding AI in the social economy, Gagliardi et al. (2020) acknowledge the opportunities presented to social enterprises and organizations by new technologies and digitalization. These include greater efficiency and reach, and simpler social innovation. However, they also highlight potential challenges, such as digital exclusion and the need to adapt to an ever-changing technological landscape. In this context, Mulgan (2023) advocates the responsible integration of AI into the social economy to promote collective well-being. Similarly, Van Wynsberghe (2021) introduces the concept of "sustainable AI" as a movement that encourages change throughout the entire lifecycle of AI products—from idea generation and training to retooling, implementation, and governance—to promote greater ecological integrity and social justice. Kar et al. (2022) also emphasize the crucial role that AI can play in promoting sustainability by enabling resource optimization, improving energy efficiency, and reducing waste.

In reference to the potential application of AI in cooperatives, Kaurav (2025) notes that cooperatives worldwide are adopting blockchain technology, mobile banking, e-commerce platforms, and AI to increase transparency, optimize processes, and expand market access. Sánchez et al. (2024) emphasize that technological advances have enabled business models to adapt to the connected era. This has led to a shift in the objectives of cooperative models and the emergence of a new business model called "cooperative start-ups." In line with this, Ribeiro et al. (2024) state that the adoption of new technologies by cooperatives has become a robust strategy, necessitating the implementation of appropriate digital transformation processes. Nevertheless, Sukardi et al. (2024) highlight the significant challenges that many cooperative entities face in their digital transformation, including resistance to change and inadequate technological infrastructure.

In parallel, Hermann (2022) emphasizes the importance of ethics, proposing the adoption of ethical frameworks to promote more responsible and transparent AI-driven marketing practices. In considering the application of ethics to cooperatives, Ramos et al. (2022) emphasize that ethical and transparent adoption is crucial if AI is to reinforce, rather than undermine, cooperative values. Meanwhile, Moyota and Tupiza (2024) contend that cooperatives must consistently assess the impact of AI on their operations to guarantee its effectiveness.

In conclusion, AI has transformed the marketing landscape by making decision-making smarter and more efficient. It also benefits the social economy by improving cooperative performance, adaptability, and the well-being of members.

3. Methodology

3.1. Bibliometric Analysis

This study proposes a research methodology involving bibliometric analysis (Donthu et al., 2021). The aim is to explore the connections and links between academic publications on the use of marketing strategies and AI within the social economy and to categorize and identify these publications (Srivastava, 2021). Such an analysis allows us to examine various academic contributions within a given field, identify influential authors, pinpoint emerging trends and themes, and analyze publication timelines (Wang et al., 2020). This helps us recognize the topics of greatest interest within the scientific community.

A bibliometric analysis was conducted using version 1.6.20 of the VOSviewer software. This software enables results to be visualized in the form of neural maps, which illustrate the

connections between authors, journals, and keywords. These neural maps can be presented as matrices or data tables (Shen et al., 2022), making the results easier to interpret.

In this study, three types of analysis were developed: The first was co-citation analysis, which examines the references cited in publications to determine their intellectual structure (Kraus et al., 2022) and attribute value to citations from other authors. This analysis generates a map of publications that have received significant attention. The second type of analysis used was bibliographic coupling of sources, which identifies the main sources of information by examining the shared references between documents in the database. Accordingly, dynamic maps showing the relationships and relevance between the sources can be obtained (Maseda et al., 2022). Third, an analysis of author keyword co-occurrence was carried out. This identifies the keywords that appear most frequently within the database, providing information on related topics (Widianingsih et al., 2021).

3.2. Data Sampling

This research used the Web of Science (WoS) database, which includes studies published in internationally renowned, high-ranking journals (Journal Citation Reports [JCR]). These rankings include some of the world's most prestigious journals (Baumgartner and Pieters, 2003; Kraus et al., 2020). WoS includes publications from various academic disciplines, providing high-quality, relevant representative samples with standardized citation data. This facilitates consistent citation information and accurate analysis in bibliometric research (Lafont et al., 2023).

The Boolean operators "AND" and "OR" were used in the search with the following terms: ("cooperative" or "cooperatives" or "social economy") and ("marketing" or "cooperative advertising" or "digitalization" or "artificial intelligence" or "AI"). The search was performed in September 2025. Different filters were applied, including limiting the publication years (between 2001 and 2025) and article types ("article," "review article," or "early access") and using the WoS category selection filter. Initially, the following categories were chosen: Agricultural Economics Policy OR Business OR Economics OR Management OR Food Science Technology OR Agriculture Multidisciplinary OR Operations Research Management Science OR Engineering Industrial OR Engineering Manufacturing OR Agronomy. This covered literature studying companies as well as those studying the use of technological advances within the social economy and cooperative sectors. The WoS database filter was also used to select high-impact journals and research areas within the field of study.

Then, among the areas of study from the WoS database, the following categories were selected: Business Economics OR Agriculture OR Food Science Technology OR Operations Research Management Sciences OR Communication OR Social Sciences Other Topics OR Computer Science. In addition, Microsoft Excel was employed to clean the dataset by removing articles whose subject matter was not relevant to

this study or that did not encompass the intersection of the three key topics under analysis: marketing, AI, and cooperatives.

3.3. Sample Profile

After cleaning the database in Microsoft Excel and removing irrelevant or duplicate studies, 233 articles were obtained for analysis. Figure 1 shows how these publications have evolved over time. It reveals that the majority have appeared in recent years, as AI is a relatively new phenomenon.

Fig. 1. Number of articles published by year from January 2001 to September 2025.
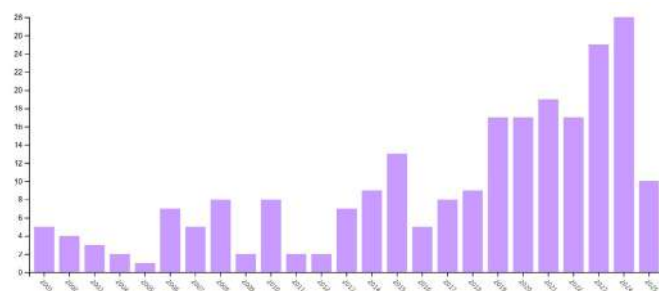
Source: Authors' creation based on the VOSviewer results.

In terms of percentage, 2024 stands out, accounting for 12.02% of publications—28 articles in total. This is followed by 2023, which accounted for 10.73% of publications (25 articles). Around half of the articles were published in the years leading up to data collection, from 2020 onward. This suggests that the integration of AI into society is reflected in related academic contributions.

Of the categories with the most published studies, Agricultural Economics Policy had the highest number of contributions, at 83 articles (35.62%). This was followed by Business, with 77 articles (33.05%), and Economics, with 64 articles (27.47%). The remaining subcategories were included within these larger categories. Table 1 presents the top ten categories, ranked by contribution, as well as the most cited articles.

Table 1. WoS categories, percentage of records, and most cited articles.

WoS categories	Number of articles	Percentage (%) of total
Agricultural Economics Policy	83	35.622%
Business	77	33.047%
Economics	64	27.468%
Management	42	18.026%
Food Science Technology	26	11.159%
Agriculture Multidisciplinary	23	9.871%
Operations Research Management Science	18	7.725%
Engineering Industrial	11	4.721%

Article	Author	Citations
Engineering Manufacturing	9	3.863%
Agronomy	4	1.717%
"Direct-marketing, indirect profits: A strategic analysis of dual-channel supply-chain design"	Chiang et al. (2003)	1421
"Cross-functional 'coopetition': The simultaneous role of cooperation and competition within firms"	Luo et al. (2006)	342
"Dependence, trust, and relational behavior on the part of foreign subsidiary marketing operations: Implications for managing global marketing operations"	Hewett & Bearden (2001)	271
"Impact of cooperatives on small-holders' commercialization behavior: Evidence from Ethiopia"	Bernard et al. (2008)	177
"Cooperative advertising, game theory and manufacturer-retailer supply chains"	Li et al. (2002)	157
"Competitive pricing behavior in the auto market: A structural analysis"	K. Sudhier (2001)	143
"The relationship between buyer and a B2B e-marketplace: Cooperation determinants in an electronic market context"	Lancastre & Lages (2006)	111
"Market orientation international business relationships and perceived export performance"	Racela et al. (2007)	94
"When not all conflict is bad: Manufacturing-marketing conflict and strategic incentive design"	Balasubramanian & Bhardwaj (2004)	92
"Seller-buyer models of supply chain management with an asymmetric information structure"	Esmaeili & Zeephongsekul (2010)	89

Source: Authors' creation based on the VOSviewer results.

The three most cited articles offer key insights into the complexities of managing hybrid marketing channels, balancing cooperation and competition ("coopetition"), and fostering trust and effective relational governance among diverse cooperative actors. This understanding is essential to drive efficient, resilient cooperative marketing strategies that can respond to both internal and external challenges, thereby significantly contributing to the sustainability and growth of cooperatives. This integrated perspective facilitates a comprehensive approach to cooperative marketing management, combining supply chain innovation, strategic alliances, and relational dynamics—elements that are particularly relevant within the literature.

4. Results

This section presents the findings of the co-citation analysis, bibliographic coupling of sources, and keyword co-occurrence.

4.1 Co-citation Analysis

Table 2 presents the top ten results, ranked by the number of co-citation analyses of references and authors. The first three articles listed in this table are closely related, as they address fundamental dimensions of interorganizational relationships and relationship marketing from different perspectives: the first through the commitment–trust theory of relationship marketing, the second through the analysis of the specific dynamics of the business-to-business (B2B) environment, and the third from a focus on the development of buyer–seller relationships. Collectively, these works provide a comprehensive framework through which to understand the motivating factors and processes that drive collaborative relationships in business contexts, placing special emphasis on trust, commitment, and relational management. These are essential within the literature when it comes to analyzing the effectiveness and sustainability of strategic alliances and relationship marketing in cooperatives and other organizations. The results illustrate the strength of the links and highlight consistency among references that receive a significant number of citations (Ribeiro et al., 2023). The two most relevant references were R.M. Morgan (1994) and J.C. Anderson (1990). In terms of author importance, as measured by the number of citations, the most significant authors were J.B. Heide (39 citations) and E. Anderson (30 citations).

Table 2. Reference co-citation and author co-citation results

Reference co-citation				Author co-citation		
Title	Author(s) and publication dates	Citations	Link strength	Author(s)	Citation	Link strength
"The commitment-trust theory of relationship marketing"	R.M. Morgan (1994)	23	68	J.B. Heide	39	190
"A model of distributor firm ad manufacturer firm working partnerships"	J.C. Anderson (1990)	18	64	E. Anderson	30	163
"Developing buyer–seller relationships"	F.R. Dwyer (1987)	18	61	J.C. Anderson	37	153
"The use of pledges to build and sustain commitment in distribution channels"	E. Anderson (1992)	12	48	O.E. Williamson	46	146
"Evaluating structural equation models with unobservable variables and measurement error"	C. Forell (1981)	17	42	N. Kumar	22	124
"Determinants of continuity in conventional industrial channel dyads"	E. Anderson (1989)	9	41	C. Fornell	23	117
"An examination of the nature of trust in buyer–seller relationships"	P.M. Doney (1997)	9	37	R.M. Morgan	28	116
"Markets and hierarchies: Analysis and anti-trust implications: A study in the economics of internal organization"	O.E. Williamson (1975)	11	26	J. Grashuis	37	95
"Linking smallholders to markets: Determinants and impacts of farmer collective action in Kenya"	E. Fischer (2012)	18	11	M.L. Cook	29	94
"Collective action for smallholder market access"	H. Markelova (2009)	17	10	J. Bijmann	41	76

Source: Authors' creation based on the VOSviewer results.

Figure 2 presents the results obtained using a neural network, with each reference represented individually. The larger the font size and circle, the more frequently the reference was cited. A filter delimiting a minimum of seven citations was applied. Of the 11,604 references, 59 met this criterion, and the 10 most relevant were included in the figure for clarity. A total of 30 links were obtained, with a combined link strength of 204. On the basis of the results, two groups can be identified: (1) eight marketing-related articles (in red) published between 1994 and 1997 and (2) a second group of articles (in green) referencing a 2009 article on small farmers' collective action to access the market and a 2012 article on coffee cooperatives' collective marketing in Costa Rica.

Fig. 2. Reference co-citation analysis.
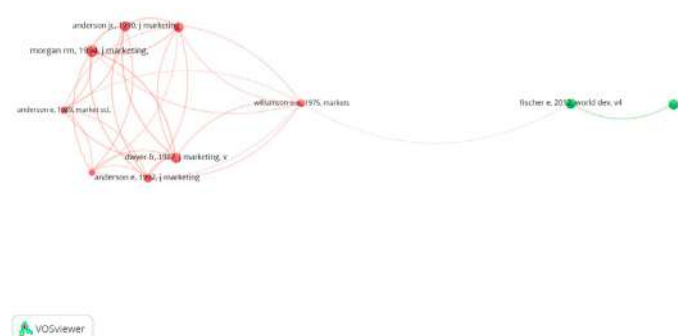
Source: Authors' creation based on the VOSviewer results.

Figure 3 continues the co-citation analysis by showing the authors who were cited the most in the database. Interpreting co-citation of authors and co-citation of references is similar. In this case, the filter used was set at a minimum of 12 citations. Of the 87,334 authors in the database, only 59 met this criterion. As before, only ten of these authors have been included to improve the clarity of the figure.

Fig. 3. Authors co-citation analysis.
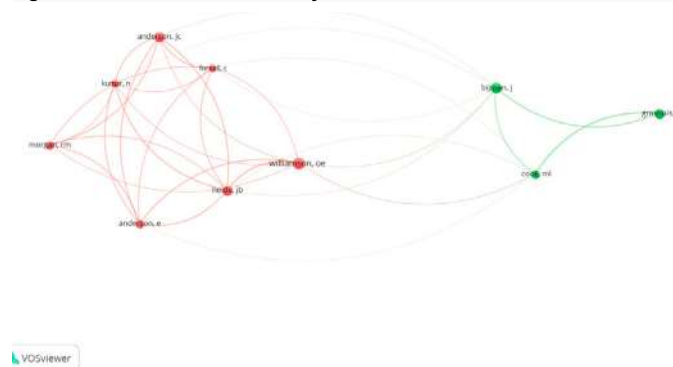
Source: Authors' creation based on the VOSviewer results.

A total of 33 links were revealed by the analysis, with a total link strength of 637. Two clusters were clearly identified: (1) a group of seven authors (in red)—E. Anderson, J.C. Anderson, C. Fornell, J.B. Heide, N. Kumar, R.M. Morgan, and O.E. Williamson—whose research focuses on marketing and

economics, and (2) a group of three authors (in green)—J. Bijman, M.L. Cook, and J. Grashuis—whose research focuses on the cooperative sector and business management.

4.2 Bibliographic Coupling of Sources

At this point, we conducted an analysis of the journals that, within the time period under study, had contributed publications to the study of marketing and the use of AI in the cooperative sector. The following filters were applied: a minimum of five publications in the source and at least one citation. Of the 58 sources in our sample, 16 met the requirements. The journal that published the most articles (17) on the topic was *Industrial Marketing Management*, which also had the strongest link strength (633). This was followed by *International Food and Agribusiness Management Review*, which had 13 publications and a link strength of 443. Table 3 presents the ten most relevant bibliographic sources, including the number of documents, citations, and total link strength for each.

Table 3. Bibliographic coupling of sources.

Source	Documents	Citations	Link strength
Industrial Marketing Management	17	670	633
Journal of Business & Industrial Marketing	4	272	566
Agribusiness	7	267	478
International Food and Agribusiness Management Review	13	153	443
Journal of Marketing	5	838	318
Journal of Business Research	4	342	315
British Food Journal	5	150	281
Agricultural Economics	5	550	232
Journal of Agribusiness in Developing and Emerging Economies	3	94	215
Cogent Food & Agriculture	3	59	189

Source: Authors' creation based on the VOSviewer results.

The relationship between the first three journals in this table lies in their shared focus on marketing and management within industrial and business markets, albeit with different emphases. Collectively, they offer a comprehensive view of marketing in industrial, interorganizational, and sectoral contexts, contributing a broad spectrum of theoretical foundations and applied knowledge to the research literature.

Figure 4 illustrates the bibliographic coupling between journals. Here, the colors represent the journals' average publication year (2012–2022), as indicated in the legend.
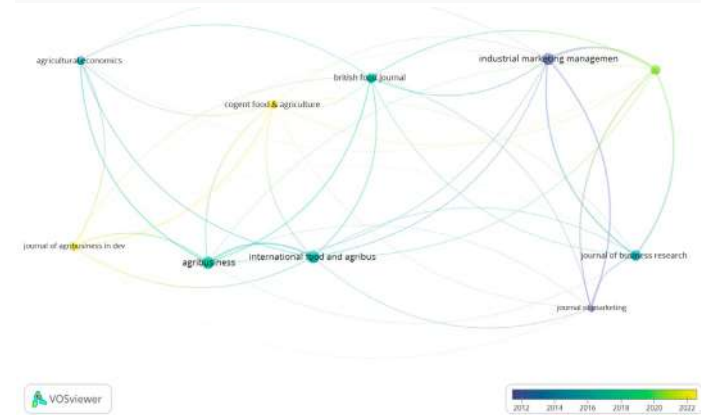
Source: Authors' creation based on the VOSviewer results.

4.3 Author Keyword Co-citation

This study sheds light on the research topics identified in the existing literature on the subject, as well as the keywords employed by authors in their publications (Sánchez et al., 2024). Of the 912 keywords identified, 21 met the criterion of appearing at least five times. The 15 most relevant of these were then selected. Table 4 shows how many times the keywords appeared and their total link strength.

Table 4. Author keyword co-citation.

Keyword	Occurrences	Link strength
Cooperation	11	12
Relationship marketing	7	9
Trust	9	9
Supply chain	7	8
Commitment	6	7
Cooperative	9	7
Cooperatives	18	7
Strategy	7	6
Cooperative advertising	5	5
E-commerce	5	5
Marketing	12	5
Advertising	5	3
Agri-food cooperatives	5	2
Agricultural cooperative	8	2
Marketing strategy	5	2

Source: Authors' creation based on the VOSviewer results.

Figure 5 presents the 15 most relevant keywords. The total link strength was 33, with 23 links. Four distinct clusters were identified. The first cluster includes the following six keywords: "agri-food cooperatives," "cooperative," "cooperatives," "e-commerce," "marketing," and "strategy." In the current environment, organizational cooperation combined with the adoption of e-commerce and digital marketing strategies is

fundamental to the competitiveness and sustainability of cooperatives. The second cluster contains four keywords and indicates that advertising, including its cooperative variant, is a marketing tactic. This requires effective coordination with the supply chain and a shared vision among all parties involved, including advertising, cooperative advertising, marketing strategy and the supply chain. The third cluster contains three keywords representing connections within organizational relationship management, particularly in contexts such as relationship marketing and teamwork dynamics within cooperatives: "commitment," "cooperation," and "relationship marketing." The final group contains two keywords, "cooperative agriculture" and "trust," demonstrating that trust is a key element of the cooperative model.

Fig. 5. Author keyword co-ocurrence.
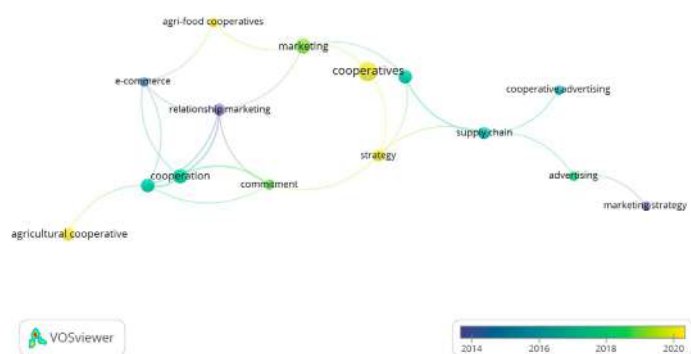
Source: Authors' creation based on the VOSviewer results.

5. Discussion

Technological advances have transformed organizational processes in all sectors, including cooperatives. Artificial intelligence (AI) has become integral to optimizing operations by automating tasks, enhancing management, and facilitating informed decision-making. This enhances efficiency and adaptability (Saura et al., 2022). In marketing, for example, AI can be used to create content, communicate with customers in a personalized way, and manage relationships effectively, thereby bolstering competitiveness (Kraus et al., 2019; Liu et al., 2022).

This research highlights a notable absence in the academic literature: a lack of studies that combine marketing, AI, and the cooperative sector. Although digitalization enables cooperatives to rapidly adapt their business models to new digital contexts, few studies address these three areas together. Digitalization, linked to emerging technologies such as artificial intelligence (Clauberg, 2020), presents the cooperative sector with opportunities and challenges. However, interdisciplinary research in this field is scarce, highlighting the need for further investigation to fully understand its implications and contributions. Table 5 presents themes for future research at the intersection of marketing, AI, and the cooperative sector. These themes were identified through an analysis of the theoretical framework and main research topics,

revealing an emerging area of scientific interest that reflects the convergence of multiple disciplines in the context of digital and social transformation.

Table 5. Categories and research questions for future research.

Topic	Description	Future research questions
The real impact of AI on marketing	A quantitative assessment of the impact of AI technologies on cooperative marketing	What is AI's impact on retaining and attracting cooperative members? What metrics can be used to measure the return on investment of AI-powered campaigns? How does AI influence member and user satisfaction?
Ethics and governance in cooperative AI	A study of ethical frameworks integrating AI with cooperative principles	In what ways can AI be implemented to respect the democratic governance of cooperatives? What mechanisms ensure transparency when using AI? What steps can be taken to ensure that algorithmic biases do not affect the fairness of cooperatives?
Open innovation and collaboration between cooperatives	A study of collaborative networks and co-creation using AI in cooperative marketing	How does AI promote collaboration between cooperatives? Which collaborative models encourage sustainable innovation? How can the impact of cooperation on the success of a shared project be measured?
Performance measurement	AI-powered tools for evaluating campaigns and cooperative marketing strategies	How does AI personalize the partner experience? What AI-based mechanisms can be employed to boost customer loyalty? How can satisfaction be assessed in collaborative digital environments?
Adaptability and the future of AI in cooperatives	Scenarios for the future and recommendations for strategically integrating AI into the cooperative sector	What methods can we use to predict future developments in the use of AI for cooperative marketing? Which strategies ensure long-term adaptability? How can we plan for technological evolution while maintaining a cooperative approach?

Source: Authors' creation.

5.1 Theoretical Contributions

The bibliometric study provided a comprehensive overview of the current literature at the intersection of marketing, AI, and the cooperative sector. It identified the challenges and opportunities involved in implementing AI in the marketing strategies of these organizations. A total of 15 research questions were identified and organized into five thematic categories. These questions will serve as a valuable guide for future interdisciplinary research in this field.

These questions enable us to identify and address conceptual and empirical gaps, emphasizing the need to enhance our comprehension of integrating AI while maintaining the democratic and collaborative principles that characterize the cooperative sector (Bouncken et al., 2018). Furthermore, the study highlights the importance of developing theoretical frameworks that connect technological innovation with the social and ethical values inherent in cooperatives. This advances science and generates applied knowledge that fosters the sustainability and competitiveness of the sector.

Ultimately, the results imply the need for an interdisciplinary approach linking marketing management, AI, and the social economy to encourage sustainable and equitable development within cooperative business models. This approach will provide a robust theoretical basis for developing innovative policies and strategies that are tailored to the unique features of cooperatives and the challenges posed by the current digital landscape.

5.2 Practical Implications

This study highlights the need for a profound transformation of cooperative organizational structures, with practical implications directly linked to this requirement. The research questions in Table 5 provide a framework to help cooperatives identify their specific challenges and the most suitable strategies to address them.

Despite the opportunities that the incorporation of new technologies, including AI, may offer to cooperatives, it is important to acknowledge that significant resistance to change continues to be observed. Such resistance often emerges in contexts characterized by limited digital literacy or concerns regarding cybersecurity (Minzar and Mishra, 2023). The study conducted by Ferrari et al. (2023) in rural areas indicates that digitalization may generate stress due to hyperconnectivity, a partial loss of autonomy, and the possible exclusion of certain sectors, illustrating how technological benefits may also give rise to mistrust or adverse effects. This resistance to change can also be identified in concerns about undesirable events in IT infrastructure, which may jeopardize business continuity and lead to anxiety or vulnerabilities (Cedeño-Valarezo et al., 2016).

Additionally, the demographic composition of the members, characterized by a greater presence of older individuals, makes them more reluctant to embrace digitalization and integrate new tools. This constitutes a critical obstacle to or-

ganizational modernization processes (Ribeiro et al., 2023). Therefore, digital transformation must be accompanied by training and change management programs to increase trust and participation among all members, as well as initiatives to reduce the digital divide. This will enable cooperatives to enhance their operational efficiency and competitiveness while ensuring social inclusion during the technological transition and guaranteeing the sustainability of their business models.

6. Conclusions

This study examined the relevance of marketing in the cooperative sector and the potential profitability of using artificial intelligence (AI) as a core tool. This was achieved by reviewing scientific literature published between January 2021 and September 2025. Cooperatives generally play a significant role in the social economy (Czternasty, 2014), and marketing has become an essential part of this sector (Dos Santos and de Carvalho, 2019). AI has opened up new marketing possibilities by facilitating large-scale data collection, automating processes, and optimizing strategies (Verma et al., 2021). When applied to the cooperative sector, AI can accelerate digital transformation processes significantly and reinforce business strategy (Ribeiro et al., 2024).

Some additional recommendations can be made to reinforce the practical implications discussed in the relevant section (5.2). Firstly, it is important to integrate cooperative principles into digitalization processes to ensure fair and sustainable development. Relevant works include the following: (1) Ciruela et al. (2020) analyze how adopting smart technologies can improve efficiency and sustainability and propose strategies for digitizing processes without compromising cooperative principles; (2) Guzmán et al. (2024) emphasize the digital transformation of cooperatives from a gender perspective and identify the barriers and opportunities involved and the strategies required to promote inclusive and sustainable development; and (3) Álvarez et al. (2025) analyze how digital tools can improve transparency and participation, highlighting their role in reinforcing cooperative principles and social responsibility.

Secondly, recommendations for researchers and stakeholders involved in cooperation are provided. For instance, (1) Ramos et al. (2022) suggest that researchers should study how to design AI systems compatible with cooperative principles. Meanwhile, (2) Girish and Avery (2022) advocate conducting comparative studies to understand how these organizations can be structured in different contexts. It is also important to consider the role of public policies in facilitating cooperative digitization. As González (2025) emphasizes, such policies can provide legal and fiscal incentives to encourage the formation of technology cooperatives.

Finally, the research reveals certain limitations that we will address alongside some ideas for future research lines. (1) The study is exploratory in nature. However, we conducted the most comprehensive analysis possible using scientific literature. It is therefore recommended that this study be com-

plemented by other descriptive, correlational, or explanatory studies. Furthermore, this study could be complemented by qualitative research, which would enable a more in-depth assessment of the actual situation of cooperatives in terms of marketing practices and the use of AI. (2) The WoS database was used for this study. Although it is considered one of the most prestigious databases in academia, it would be interesting to include other databases containing publications on marketing, AI, and cooperatives, as this could have an impact on the scientific and business communities. (3) Although the terms used in the database are appropriate and have been carefully selected, limitations regarding the results obtained or the number of citations a document in the sample may contain at the time of data extraction remain. (4) Most of the tracked publications were in English, and thus, relevant research published in other languages may have excluded. (5) A certain degree of subjectivity on the part of the researchers is unavoidable when describing exploratory results and relating the concepts identified during the analysis. Despite these limitations, this study provides valuable insights into the current situation and paves the way for future research on this emerging topic.

References

Abyre, A., Ouali, M. A., & El Kandili, M. (2018). Social Marketing, Social economy and Interdependent Moroccan in ECOWAS economic space: Which potential? Which prospects?. *International Journal of Innovation and Applied Studies*, *24*(4), 1701-1710.

Arrieta-Idiakez, F. J., (2019). Digital cooperatives as channels for digital work in the context of the collaborative economy. *Boletín de la Asociación Internacional de Derecho Cooperativo*, (54), 75-96. http://dx.doi.org/10.18543/baidc-54-2019pp75-96

Cervantes-Álvarez, V., Peña-Estrada, C. C., Velázquez-García, G., and Bermúdez-Peña, C. P. (2025). El balance social cooperativo y su evolución hacia un modelo digital. *Transdigital*, *6*(12), e503, https://doi.org/10.56162/transdigital503

Angelov, P. P., Soares, E. A., Jiang, R., Arnold, N. I., & Atkinson, P. M. (2021). Explainable artificial intelligence: an analytical review. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, *11*(5), e1424, https://doi.org/10.1002/widm.1424

Basha, M. (2023). Impact of artificial intelligence on marketing. *East Asian Journal of Multidisciplinary Research*, *2*(3), 993-1004, https://doi.org/10.55927/eajmr.v2i3.3112

Baumgartner H, Pieters R (2003) The structural influence of marketing journals: a citation analysis of the discipline and its subareas over time. J Mark 67(2):123–139. https://doi.org/10.1509/jmkg.67.2.123.18610

Bauwens, T., Gotchev, B., & Holstenkamp, L. (2016). What drives the development of community energy in Europe? The case of wind power cooperatives. *Energy Research & Social Science*, *13*, 136-147, https://doi.org/10.1016/j.erss.2015.12.016

Bazarova, M. (2024). Marketing management strategy's importance and modern concept. *Modern Science and Research*, *3*(6). Retrieved from https://inlibrary.uz/index.php/science-research/article/view/34793

Berardi, L., & Valentinetti, D. (2023). Digitalization of Social Impact for Social Economy Organizations. *Canadian Journal of Nonprofit and Social Economy Research*, *13*(2), 114-120.

Bouncken RB, Laudien SM, Fredrich V, Görmar L (2018) Coopetition in coworking-spaces: value creation and appropriation tensions in an entrepreneurial space. RMS 12(2):385–410. https://doi.org/10.1007/ s11846- 017- 0267-7

Budianto, E. W. H., & Dewi, N. D. T. (2024). The role of integrated marketing communications to improving the islamic social economy. *International Journal of Global Modern Research (IJGMR)*, *1*(1), 1-18, https:// doi. org/10521/zenodo.13311960

Cedeño-Valarezo, L. C., Morales-Carrillo, J. J., Dávila-Muñoz, M. A., & Párraga-Andrade, G. V. (2016). Análisis de Riesgos tecnológicos en la cooperativa de ahorro y crédito Calceta Limitada. *Revista Tecnológica-ESPOL*, *29*(1).

Child, J., Faulkner, D., Tallman, S., & Hsieh, L. (2019). *Cooperative strategy: Managing alliances and networks*. Oxford university press.

Chintalapati, S., & Pandey, S. K. (2022). Artificial intelligence in marketing: A systematic literature review. *International Journal of Market Research*, *64*(1), 38-68, https://doi.org/10.1109/ACCESS.2020.3022763

Chukkapalli, S. S. L., Mittal, S., Gupta, M., Abdelsalam, M., Joshi, A., Sandhu, R., & Joshi, K. (2020). Ontologies and artificial intelligence systems for the cooperative smart farming ecosystem. *Ieee Access*, *8*, 164045-164064.

Ciruela-Lorenzo, A., Del Aguila-Obra, A., Padilla-Melendez, A., & Jose Plaza-Angulo, J. (2020). Digitalization of Agri-Cooperatives in the Smart Agriculture Context. Proposal of a Digital Diagnosis Tool. *Sustainability*, *12*(4), https://doi.org/10.3390/su12041325

Clauberg R. Challenges of digitalization and artificial intelligence for modern economies, societies and management // RUDN Journal of Economics. - 2020. - Vol. 28. - N. 3. - P. 556-567. doi: 10.22363/2313-2329-2020-28-3-556-567

Confalonieri, R., Coba, L., Wagner, B., & Besold, T. R. (2021). A historical perspective of explainable artificial intelligence. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, *11*(1), e1391, https://doi.org/10.1002/widm.1391

Curry, O. S., Mullins, D. A., & Whitehouse, H. (2019). Is it good to cooperate? Testing the theory of morality-as-cooperation in 60 societies. *Current anthropology*, *60*(1), 47-69.

Czternasty, W. (2014). The position of cooperatives in the new social economy. *Management*, *18*(1), 488.

De Andreis, F., Comite, U., & Gallo, A. M. (2001). *Social business, artificial intelligence, and sustainability: An integrated approach for the future. Sustainable Economies. 2024; 2 (1): 18*. Marketing, https://doi.org/10.62617/se.v2i1.18

De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & Von Wangenheim, F. (2020). Artificial intelligence and marketing: Pitfalls and opportunities. *Journal of Interactive Marketing*, *51*(1), 91-105, https://doi.org/10.1016/j.intmar.2020.04.007

Dimitrieska, S., Stankovska, A., & Efremova, T. (2018). Artificial intelligence and marketing. *Entrepreneurship*, *6*(2), 298-304.

Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM (2021) How to conduct a bibliometric analysis: an overview and guidelines. J Bus Res 133:285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Dos Santos, R. A., & de Carvalho, A. D. (2019). Marketing compound for cooperatives-CMC: The 6P's of cooperativism. *International journal of trends in marketing management*, (1), https://doi.org/10.15640/jmm.v7n1a2

Dueñas, P. P. M., & Gómez, D. (2021). La gestión de la comunicación digital en las cooperativas españolas. *CIRIEC-España. Revista de economía pública, social y cooperativa*, (101), 193-225, http://dx.doi.org/10.7203/CIRIEC-E.101.17638

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... & Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International journal of information management*, *57*, 101994, https://doi.org/10.1016/j.ijinfomgt.2019.08.002

Felzensztein, C., Brodt, S. E., & Gimmon, E. (2014). Do strategic marketing and social capital really matter in regional clusters? Lessons from an emerging economy of Latin America. *Journal of business research*, *67*(4), 498-507, https://doi.org/10.1016/j.jbusres.2013.11.006

Ferrari, A., Lepore, F., Ortolani, L., & Brunori, G. (2023, September). Eliciting the double-edged impact of digitalisation: a case study in rural areas. In *2023 IEEE 31st International Requirements Engineering Conference (RE)* (pp. 157-168). IEEE. https://doi.org/10.1109/RE57278.2023.00024

Gagliardi, D., Psarra, F., Wintjes, R., Trendafili, K., Mendoza, J. P., Turkeli, S., ... & Niglia, F. (2020). New technologies and digitisation: Opportunities and challenges for the social economy and social enterprises.

Gianni, R., Lehtinen, S., & Nieminen, M. (2022). Governance of responsible AI: From ethical guidelines to cooperative policies. *Frontiers in Computer Science*, *4*, 873437, https://doi.org/10.3389/fcomp.2022.873437

Girish, S., & Avery, M. (2022). Data cooperative: Enabling meaningful collective negotiation of data rights for communities. *Available at SSRN 4414473*, http://dx.doi.org/10.2139/ssrn.4414473

González Santa Cruz, F., Moreira Mero, N., Loor Alcívar, M. I., & Hidalgo Fernández, A. (2020). Analysis of the internal marketing dimensions in social economy organizations: Study applied to co-operativism in Ecuador. *Frontiers in psychology*, *11*, 580673, https://doi.org/10.3389/fpsyg.2020.580673

González, A. R. (2025). Instrumentos normativos para la constitución de cooperativas con medios tecnológicos. *Boletín de la Asociación Internacional de Derecho Cooperativo: International Association of Cooperative Law Journal*, (67), 47-97.

Grigore, A. A. (2013). Social economy marketing: A new age in marketing field. *Network Intelligence Studies*, *1*(02), 90-96.

Guzmán, C., Santos, F. J., & Ahumada, P. (2024). Análisis de la transformación digital en las cooperativas agroalimentarias desde la perspectiva de género. *CIRIEC-Espana*, (111), 261-303, https://doi.org/10.7203/CIRIEC-E.111.27932

Herbes, C., Rilling, B., & Holstenkamp, L. (2021). Ready for new business models? Human and social capital in the management of renewable energy cooperatives in Germany. *Energy Policy*, *156*, 112417, https://doi.org/10.1016/j.enpol.2021.112417

Hermann, E. (2022). Leveraging artificial intelligence in marketing for social good—An ethical perspective. *Journal of Business Ethics*, *179*(1), 43-61, https://doi.org/10.1007/s10551-021-04843-y

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, https://doi.org/10.1007/s11747-020-00749-9

Hunt, E. B. (2014). *Artificial intelligence*. Academic Press.

Ishemo, A., & Bushell, B. (2016). Farming cooperatives: Opportunities and challenges for women farmers in Jamaica. *Journal of International Women's Studies*, *18*(4), 13-29.

Jiang, Y., Li, X., Luo, H., Yin, S., & Kaynak, O. (2022). Quo vadis artificial intelligence?. *Discover Artificial Intelligence*, *2*(1), 4, https://doi.org/10.1007/s44163-022-00022-8

Kar, A. K., Choudhary, S. K., & Singh, V. K. (2022). How can artificial intelligence impact sustainability: A systematic literature review. *Journal of Cleaner Production*, *376*, 134120, https://doi.org/10.1016/j.jclepro.2022.134120

Katchova, A. L., & Woods, T. A. (2011). The effectiveness of local food marketing strategies of food cooperatives, https://doi.org/10.22004/ag.econ.103918

Katz, R. D. (2005). The not-for-profit sector: No longer about just raising funds. *The Journal of Private Equity*, 110-113, https://www.jstor.org/stable/43503419

Kaurav, P. (2025). Driving innovation in cooperative societies: A pathway to sustainable development. *General Academic Journals-P-ISSN 3050-8711 and E-ISSN 3050-872X*, *1*(2), 01-09.

Korteling, J. H., van de Boer-Visschedijk, G. C., Blankendaal, R. A., Boonekamp, R. C., & Eikelboom, A. R. (2021). Human-versus artificial intelligence. *Frontiers in artificial intelligence*, *4*, 622364, https://doi.org/10.3389/frai.2021.622364

Kraus S., Roig-Tierno N., Bouncken R. B. (2019) Digital innovation and venturing: an introduction into the digitalization of entrepreneurship. RMS 13(3):519–528. https://doi.org/10.1007/s11846-019-00333-8

Kraus, S., Breier, M., & Dasí-Rodríguez, S. (2020). The art of crafting a systematic literature review in entrepreneurship research. International Entrepreneurship and Management Journal, 16(3), 1023-1042. https://doi.org/10.1007/s11365-020-00635-4

Kraus, S., Breier, M., Lim, W. M., Dabić, M., Kumar, S., Kanbach, D., ... & Ferreira, J. J. (2022). Literature reviews as independent studies: guidelines for academic practice. *Review of managerial science*, *16*(8), 2577-2595, https://doi.org/10.1007/s11846-022-00588-8

Lafont, J., Saura, J. R., & Ribeiro-Soriano, D. (2023). The role of cooperatives in sustainable development goals: A discussion about the current resource curse. Resources Policy, 83, 103670. https://doi.org/10.1016/j.resourpol.2023.103670

Lakshmi, A. J., & Unny, A. (2025). *Digital Transformation and Cooperatives: Perspectives from the United Kingdom, Japan, and India*. Taylor & Francis.

Liu Q, Trevisan AH, Yang M, Mascarenhas J (2022) A framework of digital technologies for the circular economy: Digital functions and mechanisms. Bus Strategy Environ. https://doi.org/10.1002/bse.3015

Lu, H., Li, Y., Chen, M., Kim, H., & Serikawa, S. (2018). Brain intelligence: go beyond artificial intelligence. *Mobile networks and applications*, *23*, 368-375.

Madanchian, M., & Taherdoost, H. (2025). Ethical theories, governance models, and strategic frameworks for responsible AI adoption and organizational success. *Frontiers in Artificial Intelligence*, *8*, 1619029, https://doi.org/10.3389/frai.2025.1619029

Maseda A, Iturralde T, Cooper S, Aparicio G (2022) Mapping women's involvement in family firms: a review based on bibliographic coupling analysis. Int J Manag Rev 24(2):279–305. https://doi.org/10.1111/ijmr.12278

McMahon, L. (2012). The impact of social marketing on social engineering in economic restructuring. In *Social marketing* (pp. 75-84). Routledge.

Minzar, M., & Mishra, M. K. (2024). Digital Transformation In Cooperatives: Opportunities And Challenges. *IOSR Journal of Business and Management*, *26*(10), 23-31.

Mitchell, A., Madill, J., & Chreim, S. (2015). Marketing and social enterprises: Implications for social marketing. *Journal of Social Marketing*, *5*(4), 285-306, https://doi.org/10.1108/JSOCM-09-2014-0068

Moyota-Santacruz, M. D., & Tupiza-Pujos, M. D. (2024). *Inteligencia artificial en el proceso de reclutamiento y selección del talento humano en cooperativas de ahorro y crédito de Latacunga* (Doctoral dissertation, Ecuador: Latacunga: Universidad Técnica de Cotopaxi (UTC)).

Mulgan, G. (2023). The social economy and the Fourth. *Social Economy Science: Transforming the Economy and Making Society More Resilient*, 90.

Nilsson, J., Svendsen, G. L., & Svendsen, G. T. (2012). Are large and complex agricultural cooperatives losing their social capital? *Agribusiness*, *28*(2), 187-204, https://doi.org/10.1002/agr.21285

Ortmann, G. F., & King, R. P. (2007). Agricultural cooperatives I: History, theory and problems. *Agrekon*, *46*(1), 40-68.

Palacios-Marqués, D., García, M. G., Sánchez, M. M., & Mari, M. P. A. (2019). Social entrepreneurship and organizational performance: A study of the mediating role of distinctive competencies in marketing. *Journal of business research*, *101*, 426-432, https://doi.org/10.1016/j.jbusres.2019.02.004

Peloza, J., & Hassay, D. N. (2014). A typology of charity support behaviors: Toward a holistic view of helping. In *Social Marketing*(pp. 135-151). Routledge.

Ramos, M. E., Azevedo, A., Meira, D., & Curado Malta, M. (2022). Cooperatives and the use of artificial intelligence: A critical view. *Sustainability*, *15*(1), 329, https://doi.org/10.3390/su15010329

Ribeiro-Navarrete, B., Saura, J. R., & Simón-Moya, V. (2024). Setting the development of digitalization: state-of-the-art and potential for future research in cooperatives. Review of Managerial Science, 18(5), 1459-1488. https://doi.org/10.1007/s11846-023-00663-8

Ribeiro-Navarrete, S., Saura, J. R., & Palacios-Marqués, D. (2021). Towards a new era of mass data collection: Assessing pandemic surveillance technologies to preserve user privacy. *Technological Forecasting and Social Change*, *167*, 120681, https://doi.org/10.1016/j.techfore.2021.120681

Sánchez-Robles, M., Saura, J. R., & Ribeiro-Soriano, D. (2024). Overcoming the challenges of cooperative startups businesses: insights from a bibliometric network analysis. *Review of managerial science*, *18*(6), 1617-1648, https://doi.org/10.1007/s11846-023-00670-9

Saura J. R, Palacios-Marqués D., Ribeiro-Soriano D. (2022a) Exploring the boundaries of open inno- vation: evidence from social media mining, Technovation, in press. https://doi.org/10.1016/j.technovation.2021.102447

Sexton, R. J., & Iskow, J. (2021). The competitive role of cooperatives in market-oriented economies: A policy analysis. In *Agricultural cooperatives in transition* (pp. 55-83). Routledge.

Shaily, S. A., & Emma, N. N. (2021). Integration of artificial intelligence marketing to get brand recognition for social business. *International Review of Management and Marketing*, *11*(4), 29, https://doi.org/10.32479/irmm.11542

Shaw, E. (2004). Marketing in the social enterprise context: is it entrepreneurial? *Qualitative Market Research: An International Journal*, *7*(3), 194-205, https://doi.org/10.1108/13522750410540209

Sheth, J. N., & Parvatiyar, A. (2021). Sustainable marketing: Market-driving, not market-driven. *Journal of macromarketing*, *41*(1), 150-165, https://doi.org/10.1177/0276146720961836

Singh, S., Singh, A., & Lal, C. (2022). Constraints in the functioning of primary agricultural cooperative societies in Haryana state India. *Economic and Regional Studies*, *15*(4), 509-518, https://doi.org/10.2478/ers-2022-0034

Siswanto, I., Budiman, F., Aini, F., & Kurniawan, F. (2024). Cooperatives amid the Wave of Industrial Revolution 4.0: Opportunities and Challenges. *Indonesian Journal of Islamic Economics and Finance*, *4*(1), 223-238, https://doi.org/10.37680/ijief.v4i1.5733

Soares Júnior, A. P., Espanhol, C. A., Mainardes, E. W., & Sepulcri, L. M. C. B. (2025). Social Value of Marketing: A Bibliometric Analysis. *Journal of Nonprofit & Public Sector Marketing*, *37*(1), 133-162, https://doi.org/10.1080/10495142.2024.2353382

Srivastava M (2021) Mapping the influence of influencer marketing: a bibliometric analysis. Mark Intell Plan. https://doi.org/10.1108/MIP-03-2021-0085

Sukardi, D. ., Hafizd, J. Z. ., Muamar, A. ., Hamamah, F. ., Royani, E. ., & Sobirov, B. . (2024). Digital Transformation of Cooperative Legal Entities in Indonesia. *Al-Risalah: Forum Kajian Hukum Dan Sosial Kemasyarakatan*, *24*(2), 68–86. https://doi.org/10.30631/alrisalah.v24i2.1563

Terras, M., Anzinger, B., Gooding, P., Mühlberger, G., Nockels, J., Romein, C. A., ... & Stauder, F. (2025). The artificial intelligence cooperative: READ-COOP, Transkribus, and the benefits of shared community infrastructure for automated text recognition. *Open Research Europe*, 1-44.

Tscheulin, D. K., Olk, S., Zogaj, A., & Mähner, P. M. (2021). Marketing in social economy and common welfare–Advantages and challenges. *Zeitschrift für Gemeinwirtschaft und Gemeinwohl: Z'Gug/Journal of Social Economy and Common Welfare*, *44*(1), 144-159.

Van Wynsberghe, A. (2021). Sustainable AI: AI for sustainability and the sustainability of AI. *AI and Ethics*, *1*(3), 213-218.

Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: Systematic review and future research direction. *International Journal of Information Management Data Insights*, *1*(1), 100002, https://doi.org/10.1016/j.jjimei.2020.100002

Vlačić, B., Corbo, L., e Silva, S. C., & Dabić, M. (2021). The evolving role of artificial intelligence in marketing: A review and research agenda. *Journal of business research*, *128*, 187-203, https://doi.org/10.1016/j.jbusres.2021.01.055

Wang X, Xu Z, Škare M (2020) A bibliometric analysis of economic research-ekonomska istra zivanja (2007–2019). Econ Res Ekon Istraz 33(1):865–886. https://doi.org/10.1080/1331677X.2020.1737558

Widianingsih I, Paskarina C, Riswanda R, Putera PB (2021) Evolutionary study of watershed governance research: a bibliometric analysis. Sci Technol Libr 40(4):416–434. https://doi.org/10.1080/0194262X.2021.1926401

Yasanallah, P., & Bidram, V. (2012). Studying the status of marketing mix (7Ps) in consumer cooperatives at Ilam province from members' perspectives. *American Journal of Industrial and Business Management*, *2*(04), 194, http://dx.doi.org/10.4236/ajibm.2012.24025