

## Sports marketing: research advances

Marketing Deportivo: avances de la investigación

Marketing esportivo: avanços na pesquisa

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### RESUMEN

El artículo tiene por objetivo realizar un estudio bibliométrico del marketing deportivo a fin de conocer la tendencia de la investigación. Para ello, se realiza un análisis bibliométrico con artículos publicados en el idioma inglés el periodo 2004-2025 en la base de datos Scopus. El resultado de la búsqueda es de 4.659 documentos los cuales son analizados con el programa VOSviewer. Los resultados revelan que la producción científica sobre marketing deportivo ha ido en aumento en los últimos años. Los países que más producción científica tienen sobre sport marketing son United States (1448), United Kingdom (460) y Australia (445). Asimismo, se evidencia que en la actualidad la investigación está centrada en el estudio del Social Media y Gambling debido al uso de las plataformas digitales y la promoción de las apuestas en el deporte. Se concluye que los investigadores tienen desafíos importantes, para continuar generando saberes sobre las nuevas estrategias usadas por las empresas deportivas para posicionar sus marcas y explorar el ámbito regulatorio que surge en el marco de la generación de contenidos en redes sociales y las apuestas que se hacen en la media sobre los resultados de los eventos deportivos.

**Palabras Clave:** Marketing Deportivo, Social Media, Gambling

### ABSTRACT

This article aims to conduct a bibliometric study of sports marketing to know the research trend. For this purpose, a bibliometric analysis is carried out with articles published in the English language from 2004-2025 in

the Scopus database. The search result is 4,659 documents analyzed with the VOSviewer program. The results reveal that the scientific production of sports marketing has been increasing in recent years. The countries with the highest scientific production in sports marketing are the United States (1448), the United Kingdom (460), and Australia (445). It is also evident that research is currently focused on studying social media and gambling due to the use of digital platforms and the promotion of sports betting. It is concluded that researchers have important challenges to continue generating knowledge about the new strategies used by sports companies to position their brands and to explore the regulatory environment that arises in the context of the generation of content on social networks and the bets that are made in the media on the results of sporting events.

**Keywords:** Sport Marketing, Social Media, Gambling

## RESUMO

O objetivo deste artigo é realizar um estudo bibliométrico do marketing esportivo para descobrir a tendência de pesquisa. Para isso, é realizada uma análise bibliométrica com artigos publicados em inglês no período de 2004 a 2025 no banco de dados Scopus. O resultado da pesquisa é de 4.659 documentos que são analisados com o programa VOSviewer. Os resultados revelam que a produção científica sobre marketing esportivo tem aumentado nos últimos anos. Os países com maior produção científica sobre marketing esportivo são os Estados Unidos (1448), o Reino Unido (460) e a Austrália (445). Também é evidente que a pesquisa atualmente se concentra no estudo da mídia social e dos jogos de azar devido ao uso de plataformas digitais e à promoção de apostas no esporte. Conclui-se que os pesquisadores têm desafios importantes para continuar gerando conhecimento sobre as novas estratégias usadas pelas empresas esportivas para posicionar suas marcas e explorar o ambiente regulatório que surge no contexto da geração de conteúdo nas redes sociais e das apostas feitas na mídia sobre os resultados dos eventos esportivos.

**Palavras-chave:** Marketing Esportivo, Mídias Sociais, Jogos de Azar

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## INTRODUCCIÓN

Businesses and sports have commonalities in using marketing to develop strategies to facilitate the commercialization of products and services (Chalapathi and Rajini, 2024). Companies linked to sports effectively use marketing for event promotion and brand diffusion (Eslava-Zapata *et al.*, 2024a; Sinosh and Nandhini, 2024). Sports marketing has grown rapidly in recent years, given that the sports sector is very lucrative and provides significant capital flows thanks to the strategic alliances between brands (Albeshchenko *et al.*, 2024; Wu *et al.*, 2024).

Sports marketing has been consolidated in the sports industry as a tool to enhance brands, products, and services and improve corporate image (Sarián-González *et al.*, 2024; Stegmann *et al.*, 2023). In this scenario, sports companies with marketing have evolved as important economic groups in which fans have become a key segment (Flores-Anaya *et al.*, 2023). Tools such as advertising in social networks, sporting events, or the participation of athletes in advertising have motivated the consumption of products and services and, therefore, have had a positive effect on the exponential growth of the market (Cárdenas-Londoño and Bernate-Martínez, 2024; Goebert and Greenhalgh, 2020).

Sports marketing comprises various elements and organizations to drive the mass marketing of products and achieve a global impact of sporting events (Vargas *et al.*, 2024; Beek *et al.*, 2023). For this reason, companies related to sports have been inspired to recognize the potential of sports and athletes in order to consolidate themselves in a sector with an important economic and social impact (Copaja-Arocupita, *et al.*, 2025; Jauregui-Romero *et al.*, 2024). Therefore, the objective of this article was to carry out a bibliometric study of sports marketing to know the research trend.

## MUESTRA Y METODOLOGÍA

The study is qualitative. A bibliometric analysis was performed with the following search engine: TITLE-ABS-KEY ( sport AND marketing ) AND PUBYEAR > 2003 AND PUBYEAR < 2026. Articles published in the English language from 2004-2025 in the Scopus database were selected. The search yielded 4,659 documents, which were analyzed using the VOSviewer program.

First, a descriptive analysis of the scientific production by year, area of study, journal, and country was carried out. Then, in a second phase, an analysis was made of co-authorship by author and country and the co-occurrence of keywords by author (Gómez-Cano et al., 2024; Duque-Ramos, 2024).

## RESULTADOS

Table 1 shows that scientific production on sports marketing has increased recently. It is noticeable how studies have shown an interest in the behavior of brands to create visible products and services that generate lasting loyalty with customers; in addition, the importance of sports marketing for the development of brands and commerce is highlighted.

**Table 1. Documents by year**

YEAR	DOCUMENTS
2025	8
2024	437
2023	316
2022	346
2021	306
2020	319
2019	250
2018	293
2017	254
2016	247
2015	264
2014	182

Table 2 shows that the first three places are occupied by Business, Management, and Accounting (2571), Social Sciences (1240), and Economics, Econometrics, and Finance (914).

Nº	SUBJECT AREA	DOCUMNETS
1	Business, Management and Accounting	2571
2	Social Sciences	1240
3	Economics, Econometrics and Finance	914
4	Medicine	760
5	Decision Sciences	445
6	Health Professions	415
7	Engineering	383
8	Computer Science	367
9	Psychology	254
10	Arts and Humanities	209

Table 3 shows that the journals that have published the most papers on sports marketing are the International Journal Of Sports Marketing And Sponsorship (225), International Journal Of Sport Management And Marketing (147), and Sport Management Review (97). Scientific research has fostered the development of innovative theories and models to optimize advertising campaigns and the connection between sport and marketing.

**Table 3. Documents by journal**

Nº	SOURCE TITLE	DOCUMENTS
1	International Journal Of Sports Marketing And Sponsorship	225
2	International Journal Of Sport Management And Marketing	147
3	Sport Management Review	97
4	Developments In Marketing Science Proceedings Of The Academy Of Marketing Science	93
5	Journal Of Sport Management	78
6	Sport Business And Management An International Journal	60
7	European Sport Management Quarterly	53
8	Sustainability Switzerland	49
9	Journal Of Sport And Tourism	45
10	Journal Of Physical Education And Sport	43

Table 4 shows that the countries with the highest scientific production on sports marketing are the United States (1448), the United Kingdom (460), and Australia (445). Researchers have become interested in this multidisciplinary field, analyzing brands, consumer behavior, and, in general, the economic impact of sports.

**Table 4. Documents by country**

Nº	COUNTRY	DOCUMENTS
1	United States	1448
2	United Kingdom	460
3	Australia	445
4	Canada	266
5	China	239
6	Germany	213
7	Spain	207
8	South Korea	183
9	France	126
10	India	116

In order to analyze co-authorship per author, four published papers per author were taken as a criterion. The results showed that out of 4289 papers, only 18 papers met the criterion. Table 5 shows that the authors with the most published papers are Jr. (8), Achen R. M. (7), and Baena V. (7). The authors with the most citations are Ratten V. (269), Vogel H. L. (178) and Kelly B. et al. (171). It should be noted that the map of co-authorship by author reveals that there is no collaboration between authors.

**Table 5. Co-authorship by author**

Nº	AUTHOR	DOCUMENTS	AUTHOR	CITATIONS
1	Jr.	8	Ratten V.	269
2	Achen R.M.	7	Vogel H.L.	178
3	Baena V.	7	Kelly B. Et Al.	171
4	Desbordes M.	7	Baena V.	109
5	Eisenstein P.	7	Kruger M.; Saayman M.	87
6	Lee J.W.	6	Achen R.M.	80
7	Wang Y.	5	Jr.	74
8	Yüce A.	5	Manoli A.E.	51
9	Akihara K.	4	Jensen J.A.	43

10	Jensen J.A.	4	Desbordes M.	14

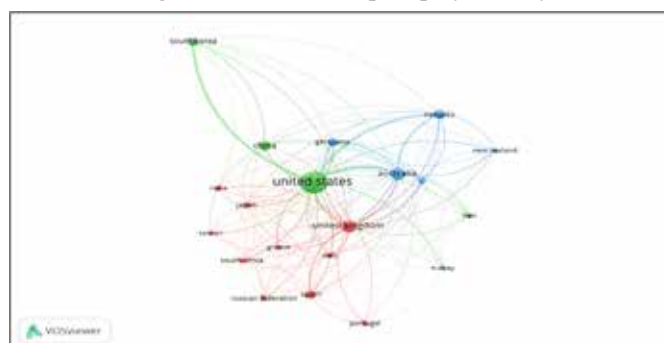
Regarding co-authorship by country, considering a minimum of sixty-four published papers, out of 185 countries, only 20 countries met the criterion. Table 6 shows that the three countries with the most published papers are the United States (1437), United Kingdom (456) and Australia (443); likewise, the three countries with the most citations are the United States (25260), Australia (11512) and United Kingdom (8688).

The co-authorship map shows the formation of three clusters (Figure 1). The red cluster comprises Greece, Italy, India, Japan, Portugal, the Russian Federation, South Africa, Spain, Taiwan, and the United Kingdom. The green cluster comprises China, Iran, South Korea, Turkey, and the United States. The blue cluster comprises Australia, Canada, France, Germany and New Zealand.

**Table 6. Co-authorship by country**

Nº	COUNTRY	DOCUMENTS	COUNTRY	CITATIONS
1	United States	1437	United States	25260
2	United Kingdom	456	Australia	11512
3	Australia	443	United Kingdom	8688
4	Canada	265	Canada	5281
5	China	239	Germany	3620
6	Germany	212	Spain	2529
7	Spain	207	South Korea	2438
8	South Korea	183	New Zealand	2078
9	France	125	Greece	1607
10	India	115	China	1510

**Figure 1. Co-authorship map by country**



## DISCUSIÓN

A minimum of forty-eight words was considered to analyze the cooccurrence of keywords per author. The results showed that out of 9170 words, only 17 met the criterion. Three common words were joined with the thesaurus program.

Three clusters were generated (Figure 2). The first cluster identified with red comprises the words Branding, Football, Satisfaction, Social Marketing, Sport Management, Sports Marketing, Tourism, and Sport Tourism. The second cluster, identified with green, is integrated with the words Advertising, Gambling, Marketing, Sponsorship, and Sport. The third cluster, identified with blue color, is integrated into the words Consumer Behavior, Relationship Marketing, Social Media, and Sports Sponsorship.

The first cluster is related to sports marketing. Sports marketing is a tool that promotes products or services related to sports to improve brand positioning and attract new customers (Sierra-Narváez *et al.*, 2023). With the design of appropriate strategies, it is possible to build

customer loyalty and achieve a sense of belonging thanks to identifying customers with the brand values (Suriya-Kumari *et al.*, 2024). Some ways to carry out sports marketing are through sponsorship of athletes and events, advertising in sports media, and creating content that generates positive experiences and emotions in the context of sports (Quintero-Vega *et al.*, 2024).

Marketing campaigns must be carefully designed to deliver the right message to the target audience that has an identity with the brand; this will maximize the positive impact of the strategies, increase the visibility and prestige of the brand, and achieve an emotional connection with customers to increase sales (Pérez-Rojas, 2024; Noguera-López, 2020).

The second cluster is related to sport gambling. In this regard, it has been evidenced that sport has always been linked to gambling, which has generated large profits over the years (Romero *et al.*, 2023). Gambling allows spectators to become involved with the game, which increases their interest, enjoyment, and enthusiasm for the sport (Mastromartino, 2024). Gamblers often seek information on teams and players to place bets, which has become an opportunity to promote sports broadcasts (Purwaningsih *et al.*, 2024).

Sports gambling has maintained fans' interest in person or through television broadcasting, and they are highly motivated by betting, which influences the revenues obtained from the sport (Eslava-Zapata *et al.*, 2024b). It should be noted that betting helps maintain spectators' attention during the competition and has allowed the development of a variety of bets that help to maintain uncertainty about the results and reinforce the value of advertising spaces (Latha and Chandran, 2024).

The third cluster is related to sports social media. Social media have become one of the best means of communication in sports since they generate synergy with the public and maximize the impact of marketing strategies (Ramírez-Martínez *et al.*, 2025). Hence, the effective management of social networks allows for building a solid online presence with attractive content that favors the reputation of brands (Martínez-Carvajal *et al.*, 2024). Measuring the impact of strategies helps to adjust them to foster strong communities and ensure the success of social networks (Eslava-Zapata *et al.*, 2024c).

Combining creativity, interaction, and analysis is necessary to maximize social media. In addition, it is necessary to know the audience to design attractive, exclusive, and quality content, for example, live broadcasts or interviews in real-time, to increase the community's interest (Lali and Chakor, 2023). Recently, stories have become a trend to capture the public's attention, and collaboration with brands and influencers extends the reach and captures new audiences with shared content. Also, direct videos and immersive technologies such as augmented and virtual reality set the standard in the digital environment (Linares-Giraldo *et al.*, 2023).

Figure 2. Keyword co-occurrence map by author

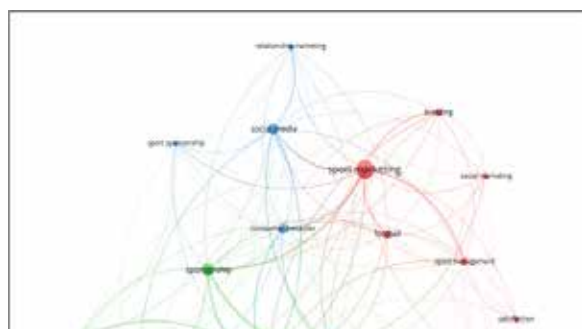


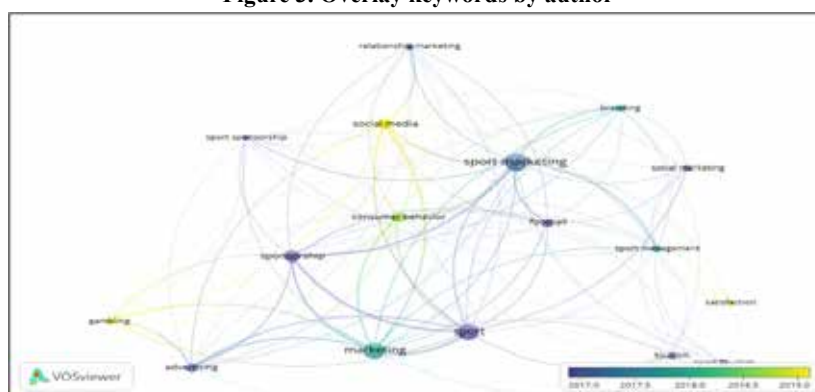
Figure 3 shows the author's overlay of keywords. The results reveal that research focuses on studying social media and gambling. In recent years, research in social media and gambling



has grown significantly due to the use of digital platforms and sports betting promotion. Social networks have become an ally for real-time betting, information exchange, and community generation. This scenario has aroused the interest of researchers considering the influence of the strategies developed by brands on the public, especially in the younger audience, who are susceptible to gamification and exposure to promotional content.

Research has also focused on understanding the risks derived from the normalization of digital gambling and the impact on the health of users derived from gambling. Scientific production analyzes how marketing strategies in social networks drive impulsive consumption patterns and are developing algorithms to segment messages. Therefore, academics are interested in understanding the dynamics between social networks and gambling to promote the design of regulatory documents and educational approaches to mitigate the negative effects on the public.

**Figure 3. Overlay keywords by author**



## CONCLUSIONES

Marketing has stood out in the sports sector. It has allowed to focus goods and services to athletes, with promotional strategies, communication, and events, among others, to position the brand and connect with the public. Currently, various sports, such as soccer, baseball, and basketball, are influencing the lives of people, cultures, and the financial and political spheres; for this reason, marketing has acquired a vital role in sports.

Sports marketing has become an ally of brands that want to expand and enter new markets, using various lines of business, such as broadcasts of competitions, sponsorships of other companies, and the management of social networks. Therefore, researchers have important challenges to continue generating knowledge about the new strategies used by sports companies to position their brands and explore the regulatory environment that arises in the context of the generation of content on social networks and the bets that are made in the media on the results of sporting events.

## REFERENCIAS BIBLIOGRÁFICAS

Albeshchenko, O., Pryhara, O., Krupenna, I., Budnikovich, I. and Shevchenko, O. (2024). Managing tourism development: deploying successful strategies and techniques. *Salud, Ciencia Y Tecnología - Serie De Conferencias*, 3, .1135. <https://doi.org/10.56294/sctconf2024.1135>

Beek, R., Van Hoecke, J. and Derom, I. (2023). Sponsorship and social justice: Brand positioning on diversity and inclusion in sport marketing during the 2020 UEFA European football championships. *International Journal of Sports Marketing and Sponsorship*, 24(3), 538-557. <https://doi.org/10.1108/IJMS-03-2022-0069>

Cárdenas-Londoño, L. V. and Bernate-Martínez, J. M. (2024). *Marca Región Meta, una herramienta*

de fortalecimiento económico y turístico para el territorio llanero. *Región Científica*, 3(2), 2024287. <https://doi.org/10.58763/rc2024287>

Copaja-Arocutipa, T. Y., Condori-Ccosi, B. S. and Romero-Carazas, R. (2025). Neuromarketing como herramienta para el posicionamiento de una marca. *Región Científica*, 4(1), 2025361. <https://doi.org/10.58763/rc2025361>

Chalapathi, B. and Rajini, G. (2024). An Empirical analysis of the effect of user behavior based on marketing sustainable fashion. *Salud, Ciencia Y Tecnología - Serie De Conferencias*, 3, 883. <https://doi.org/10.56294/sctconf2024883>

Duque-Ramos, A. P. (2024). Estudio sistemático de la participación del marketing ambiental, como método para fomentar la conciencia ambiental de estudiantes universitarios. *Región Científica*, 3(2), 2024306. <https://doi.org/10.58763/rc2024306>

Eslava-Zapata, R., Cudris-Niño, L. F. and Calderón-Ortega, M. A. N. (2024a). Marketing influencers: perspectivas futuras de la investigación. *Aglala*, 15(2), 17–33. <https://revistas.uninunez.edu.co/index.php/aglala/article/view/2493>

Eslava-Zapata, R., Becerra-Orejarena, V. and Sánchez-Castillo, V. (2024b). Social media marketing strategies: an empirical study in the hotel sector. *Revista de Investigación, Desarrollo e Innovación*, 14(2), 81-94. <https://doi.org/10.19053/uptc.20278306.v14.n2.2024.17923>

Eslava-Zapata, R., Rojas-Hermida, C. J. and García-Peñaloza, J. E. (2024c). Variables asociadas a los delitos informáticos en Latinoamérica. *Academia & Derecho*, 17(28). <https://revistas.unilibre.edu.co/index.php/academia/article/view/11822>

Flores-Anaya, Y. Z., Salinas-Solís, K. I. and Sorzano-Rodríguez, D. M. (2023). Effects of Financial Education Training on the economic wellbeing of social business. *Revista Gestión y Desarrollo Libre*, 8(15), 1-14. <https://doi.org/10.18041/2539-3669/gestionlibre.15.2023.10348>

Goebert, Ch. and Greenhalgh, G. P. (2020). A new reality: Fan perceptions of augmented reality readiness in sport marketing. *Computers in Human Behavior*, 106. <https://doi.org/10.1016/j.chb.2019.106231>

Gómez-Cano, C. A., Sánchez-Castillo, V. and Eslava-Zapata, R. (2024). Bibliometric analysis of the main applications of digital technologies to business management. *Data and Metadata*, 3, 321. <https://doi.org/10.56294/dm2024321>

Jauregui-Romero, E. R., Alca-Gómez, J., Vilca-Tantapoma, M. E. and Llanos-Gonzales, O. T. (2024). Artificial intelligence in potential customer segmentation: machine learning approach. *Data and Metadata*, 3, 305. <https://doi.org/10.56294/dm2024305>

Lali, K. and Chakor, A. (2023). Improving the Security and Reliability of a Quality Marketing Information System: A Priority Prerequisite for Good Strategic Management of a Successful Entrepreneurial Project. *Data and Metadata*, 2, 40. <https://doi.org/10.56294/dm202340>

Latha, R. and Chandran, M. (2024). Is artificial intelligence really influencing the marketing strategies and consumer behaviour? *Salud, Ciencia Y Tecnología - Serie De Conferencias*, 3, 896. <https://doi.org/10.56294/sctconf2024896>

Linares-Giraldo, M., Roza-Carvajal, K. J. and Sáenz-López, J. T. (2023). Impacto de la pandemia en el comportamiento del comercio B2C en Colombia. *Región Científica*, 2(1), 202320. <https://doi.org/10.58763/rc202320>

Martínez-Carvajal, F., Rojas-Ortega, L. F., Eslava-Zapata, R. and Díaz-Ortega, N. (2024). Personality traits of the small and medium oil palm farmer and crop productivity. *Salud, Ciencia y*



Tecnología, 4, 970. <https://doi.org/10.56294/saludcyt2024.970>

Mastromartino, B. (2024). Human capital development in sport marketing: industry insights. *International Journal of Sports Marketing and Sponsorship*, 25(3), 620-640. <https://doi.org/10.1108/IJSMS-11-2023-0238>

Noguera-López, M. Y. (2020). Responsabilidad Social Organizacional: estado del arte y tendencias. *Revista Gestión y Desarrollo Libre*, 5(10), 142-161. <https://doi.org/10.18041/2539-3669/gestionlibre.10.2020.8099>

Pérez-Rojas, G. A. (2024). Political marketing versus propaganda: Dilemmas of political persuasion. *Salud, Ciencia Y Tecnología - Serie De Conferencias*, 3, 674. <https://doi.org/10.56294/sctconf2024674>

Purwaningsih, E., Muslikh, M., Fathurahman, M. and Basrowi. (2024). Optimization of Branding and Value Chain Mapping Using Artificial Intelligence for the Batik Village Clusters in Indonesia to Achieve Competitive Advantage. *Data and Metadata*, 3, .620. <https://doi.org/10.56294/dm2024.620>

Quintero-Vega, C. E., Díaz-Ortega, N. I. and Maestre-Delgado, M. (2024). Variables exógenas como predictor de las ventas en las tiendas de barrio. *Revista Gestión y Desarrollo Libre*, 9(18), 1-14. <https://doi.org/10.18041/2539-3669/gestionlibre.18.2024.11780>

Ramírez-Martínez, C., Barrios-Reina, S. and Ortégón-Cortázar, L. (2025). Más allá del carisma en TikTok: Atributos clave de los creadores de contenido que atraen y prefieren las audiencias. *Región Científica*, 4(1), 2025404. <https://doi.org/10.58763/rc2025404>

Romero, H., Ramoni-Perazzi, J., Fajardo, E. and Gómez-Patiño, N. V. (2023). Volatilidad del tipo de cambio y crecimiento económico: una revisión de los mecanismos de transmisión en economías en desarrollo . *Revista Gestión y Desarrollo Libre*, 8(15), 1-16. <https://doi.org/10.18041/2539-3669/gestionlibre.15.2023.10093>

Sarián-González, M. G., Bruna-Román, C. L. and Robles-Lagos, C. (2024). Una nueva frontera para la creación de modelos de negocios: Blockchain y la State Action Reward State Action. *Revista Gestión y Desarrollo Libre*, 9(18), 1-16. <https://doi.org/10.18041/2539-3669/gestionlibre.18.2024.12107>

Sierra-Narváez, F. J., Eslava-Zapata, R., Omana-Guerrero, J. A. and Cudris-Niño, L. F. (2023). Competitiveness of companies in the rice milling sector: empirical study. *FACE: Revista de la Facultad de Ciencias Económicas Y Empresariales*, 23(1), 5-17. <https://doi.org/10.24054/face.v23i1.2439>

Sinosh, P. K. and Nandhini, M. (2024). Influence of online digital communication in the Decision-making Process amongst Engineering Students. *Salud, Ciencia Y Tecnología - Serie De Conferencias*, 3, 700. <https://doi.org/10.56294/sctconf2024700>

Suriya-Kumari, A., Mani, S. and Arumugam, A. (2024). Assessing the effectiveness of social marketing strategies in regulating exploitative buying behaviour in bangalore's urban sector. *Salud, Ciencia Y Tecnología - Serie De Conferencias*, 3, 910. <https://doi.org/10.56294/sctconf2024910>

Stegmann, P., Matyas, D. and Ströbel, T. (2023). Hype or opportunity? Tokenization as engagement platform in sport marketing. *International Journal of Sports Marketing and Sponsorship*, 24(4), 722-736. <https://doi.org/10.1108/IJSMS-08-2022-0157>

Vargas, K. A., Romero, Y. C. and Vega, N. E. (2024). Digital marketing strategies focused on social networks. Systematic review. *Data and Metadata*, 3, .230. <https://doi.org/10.56294/dm2024.230>

Wu, Y., Kim, E., Zhang, J.J., Li, F. and Duan, H. (2024). A practice of reciprocity: how dose cause-related sport marketing stimulate consumers' purchase intentions? *Asia Pacific Journal of Marketing and Logistics*. <https://doi.org/10.1108/APJML-06-2024-0818>

#### **CONFLICTO DE INTERESES**

El o los autores declaran que la presente investigación y su redacción no responde a ningún conflicto de interés y que es un artículo inédito.

#### **CONTRIBUCIÓN DE LOS AUTORES**

Rolando Eslava-Zapata y Verénice Sánchez-Castillo: Investigación y aplicación del experimento.  
Carlos Gómez Cano: Redacción y estilo científico.