AG
EDITOR

ORIGINAL

Data Analysis for Live Streaming Behavior: Insights from a Bibliometric Analysis (2010-2024)

Análisis de datos para el comportamiento de las secuencias en directo: reflexiones a partir de un análisis bibliométrico (2010-2024)

Nuohan Li[1] , Nadzirah Binti Rosli[1] ✉

[1]Faculty of Economics and Management, The National University of Malaysia. Bangi, 43600, Selangor, Malaysia.

ABSTRACT

To elucidate the developmental trajectory of live streaming marketing re-search, this study conducts a quantitative bibliometric analysis and visualiza-tion of 216 peer-reviewed articles indexed in the Web of Science (WoS) core collection between 2010 and 2024, utilizing VOSviewer software. Through co-occurrence analysis, cluster analysis, and co-citation mapping, this re-search identifies evolving research hotspots, collaborative networks, and dis-ciplinary trends. Key findings include: (1) The establishment of a nascent yet fragmented author collaboration network, with core authors contributing 59, 26 % of publications; (2) A dominance of retail and e-commerce-focused journals, notably "Journal of Retailing and Consumer Services" and "Frontiers in Psychology", with open-access journals significantly advancing the field; (3) Rapid expansion in research breadth and depth over the past decade, driven by interdisciplinary explorations of consumer behavior, technological affordances and trust dynamics. This study synthesizes foundational literature, highlights methodological contribu-tions, and outlines future research directions to guide scholars and practition-ers in navigating this dynamic domain.

Keywords: Live Streaming; Social Commerce; Bibliometric Analysis; Co-Citation Network; Vosviewer.

RESUMEN

Para elucidar la trayectoria de desarrollo de la investigación de marketing en streaming en directo, este estudio lleva a cabo un análisis bibliométrico cuantitativo y visualización de 216 artículos revisados por colegas indexados en la Web of Science (WoS) core Collection entre 2010 y 2024, utilizando el software VOSviewer. A través del análisis de co-ocurren, el análisis de agrupaciones y el mapeo de co-citación, esta investigación identifica los puntos críticos de investigación en evolución, las redes de colaboración y las tendencias pedagógicas. (1) el establecimiento de una naciente pero fragmentada red de colaboración entre autores, con autores centrales contribuyendo con el 59,26 % de las publicaciones, alineándose con la ley de Price; (2) un dominio de las revistas dedicadas al comercio minorista y al comercio electrónico, en particular "Journal of Retailing and Consumer Services" y "Frontiers in Psychology", con revistas de acceso abierto que avanzan significativamente en este campo; (3) rápida expansión en la amplitud y profundidad de la investigación durante la última década, impulsada por exploraciones interdisciplinaria del comportamiento del consumidor, los precios tecnológicos y la dinámica de confianza. Este estudio sintetiza la literatura fundacional, destaca las contribuciones metodológicas y esquemas futuras direcciones de investigación para guiar a los académicos y profesionales en la navegación por este dominio dinámico.

Palabras clave: Transmisión en Vivo; Comercio Social; Análisis Bibliométrico; Red de Co-Citación; Vosviewer.

INTRODUCTION

Amid the deep integration of the digital economy and social media, Live Streaming Marketing (LSM) is reshaping the fundamental logic of global e-commerce. As an emerging interactive paradigm that intertwines technology, commerce and society, this transformation is driven by advancements in 5G network infrastructure, the growing adoption of smart devices, and breakthroughs in real-time interactive technologies. Grand View Research estimates that the worldwide live streaming market would reach USD 345,13 billion by 2030, growing at a compound annual growth rate (CAGR) of 23,0 % from its 2024 valuation of about USD 99,82 billion.[1] With revenues hitting USD 150 billion in 2022 and predicted to make up 20 % of all e-commerce transactions in the next two years, live streaming commerce has grown to be a substantial part of China's digital economy.

The COVID-19 pandemic has further accelerated the adoption of LSM, fundamentally altering consumer behaviors and expectations. A study by Sun highlights that factors such as trust, perceived risk and consumer innovation significantly influence users' intentions and behaviors in live-streaming shopping environments.[2] Moreover, the integration of social elements into commerce has resonated strongly with younger demographics. For instance, a cross-national study by Statista reports that 83 % of Gen Z consumers perceive LSM as an integrated experience that combines social engagement and consumer decision-making.[3] Moreover, the user stickiness index, measured by the daily active users to monthly active users' ratio, stands at 0,39 for LSM platforms, significantly surpassing the 0,21 observed on traditional e-commerce platforms.

Academically, LSM has attracted attention across various disciplines, leading to the application of multiple theoretical frameworks to understand its dynamics, with three primary theoretical perspectives dominating the field. First, the Technology Acceptance Model (TAM) emphasizes the role of perceived enjoyment and presence in shaping user engagement with live streaming platforms.[4] Second, the Social Exchange Theory (SET) explores the dynamics of the anchor-viewer relationship, particularly the trust transfer mechanism within live streaming interactions.[5] Third, the Theory of Planned Behavior (TPB) has been employed to investigate the catalytic role of group norms in driving impulse purchases.[6]

Despite these valuable contributions, current research remains fragmented, lacking a comprehensive framework that captures the structural evolution and interdisciplinary growth of knowledge in this domain. Furthermore, there exists a significant imbalance in knowledge distribution, necessitating further exploration to develop a more holistic understanding of the mechanisms underlying LSM.

To address this gap, this study employs bibliometric techniques to map the trajectory of LSM research from 2010 to 2024. The primary objective is to uncover the intellectual structure and evolution of LSM by analyzing publication trends, author collaborations, journal contributions, and keyword dynamics. Through this analysis, the study seeks to identify core research themes and their temporal progression, evaluate collaborative networks and interdisciplinary connections, and highlight the most influential works and methodological approaches. By doing so, the paper offers a foundational overview that not only synthesizes past developments but also guides future research by pinpointing underexplored areas and emerging scholarly directions.

METHOD

Bibliometrics is the cross-disciplinary study of assessing all knowledge carriers quantitatively using mathematics and statistics. It is a complete knowledge system that includes mathematics, statistics, and bibliographies, with a concentration on quantification. The primary units of measurement are the volume of literature (various publications, particularly journal articles and citations), the number of authors (individuals, collectives, or groups), and the number of words (various literature markers, the majority of which are narrative words).[7,8] Bibliometrics has several applications in scientific study, with the primary goal of revealing an academic field's development history, research hotspots, and future development direction. Bibliometric analysis allows researchers to easily discover major papers, authors, or organizations with the most publications in the area, as well as comprehend the subject's development history, present state, and development trend. With the advancement of big data technologies, bibliometric analysis has grown in popularity in academic research, research assessment, and other sectors, becoming one of academia's vital tools.Subsequent paragraphs, however, are indented.

According to Pan, VOSviewer is one of the most often used software in bibliometric analysis and has been widely employed across several fields, demonstrating its adaptability in scientific research.[9] The VOS (visual similarity) method employed in VOSviewer produces more accurate and understandable mapping results than typical multidimensional scaling analysis.[10] It has extensive text mining and visualization features for efficiently processing and analyzing enormous volumes of text data. This enables scholars to go deeper into the material, identifying probable patterns and trends.[11] Studies have revealed that maps created with VOS approaches better reflect data sets than typical multidimensional scale analysis methods.[12] Thus, this work uses a bibliometric technique and a visualization tool called VOSviewer.[13]

RESULTS

In order to ensure the coverage and authority of the analyzed data, Web of Science (core collection) was

selected as the data source, indexes were selected from SSCI and SCI-Expended, and the selected search strategy was TS = ("live streaming marketing" OR "live broadcast marketing" OR " live streaming e-commerce" OR 'live broadcast e-commerce' OR ("marketing" AND ("live streaming" OR 'live broadcast' OR ("e-commerce" AND ("live streaming" OR 'live broadcast'))))).The retrieval period is from January 2010 to December 2024, with a deadline of December 31, 2024. The document type is Articles, the language is English, and 268 document records are acquired. However, data retrieved directly from the search algorithm may contain errors such as duplication or inconsistency with the topic, thus the data must be pre-processed before analysis to avoid the data's quality influencing the analysis findings. After screening each article, the researcher acquired a total of 216 genuine documents. The specific data screening process is shown in PRISMA flow diagram (figure 1).
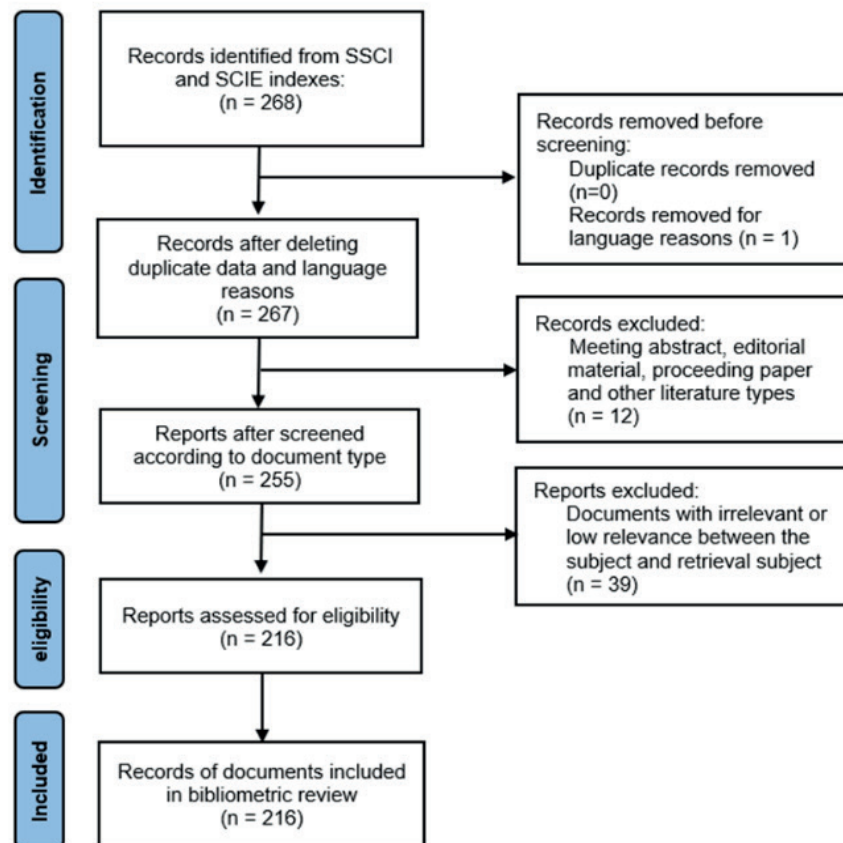

Figure 1. PRISMA flow diagram

Descriptive statistics and findings
Temporal Distribution of Publications

Figure 2 illustrates the distribution of papers published in the subject of LSM from 2010 to 2024. The volume of material released in recent years might show the progress of study in this topic. It can be observed that it has three stages of development:

1. Incubation (2010–2017): the literature at this stage clearly shows that research on live marketing prior to 2018 is relatively in the dark, which is because at this stage social media marketing is rapidly developing, live marketing is still in the early germination stage, live broadcasting technology is not mature, and the way of live shopping has not yet formed a generalization, so the field has not received a lot of attention.

2. Emergence (2018–2021): todd and Melancon were the first to analyze customers' desire to watch live streaming in 2018, taking into account gender disparities. The study's findings give an initial understanding of variances in perceptions and reasons for watching live feeds.

3. Expansion (2022–2024): LSM study is officially getting started. The third phase spans 2022-2024. LSM research starts a phase of continuous expansion. Since 2022, the number of articles published has remained above 30, and in 2024, it reached 110. This demonstrates that this study subject has garnered increasing attention from researchers in recent years, establishing itself as a new hotspot for marketing research.
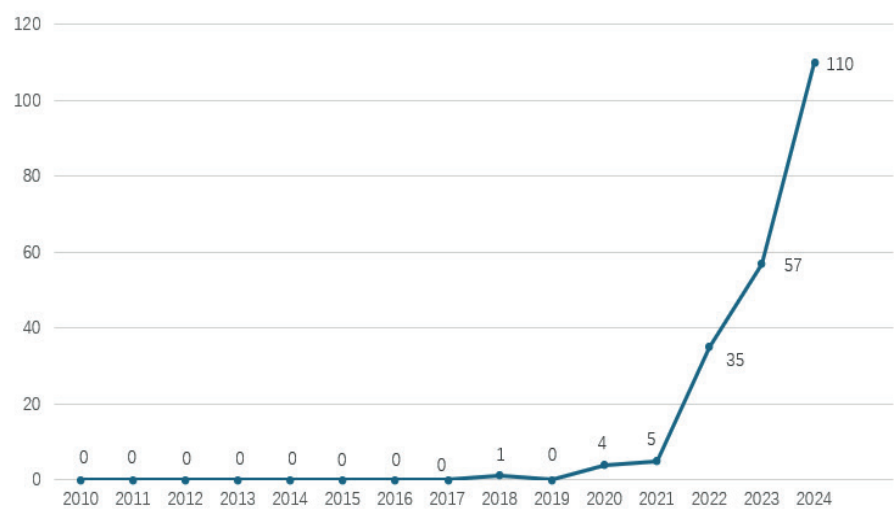
Figure 2. Annual publication trends in LSM research

Author Productivity and Collaboration Networks

The number of publications by writers reflects the breadth of the scholar's study in the topic and his or her scholarly influence. Furthermore, the distribution of authors may be utilized to identify the core group of writers of academic research in the topic. By examining the writers of the literature, this collection of 216 research documents has a total of 640 authors, including the initial author and co-authors. The number of writers who produced one piece of writing accounted for the highest proportion of authors (90,31 %), while 58 authors published two or more pieces of literature, accounting for 9,06 % of the total number of authors. However, just four writers have three or more publications, making up only 0,62 % of the total number of authors.

In addition, a study states that half of the papers on the same topic are written by a group of prolific authors whose number is numerically equal to the square root of the total number of all authors, which means that if there are N authors in a field, then about of those prolific authors contribute to about 50 percent of the papers in the field. In addition, Price's Law provides a calculation to determine a lower bound on the number of papers published by core authors:

$$m = c \times \sqrt{\mu_{max}} \qquad (1)$$

Where m is the minimum number of papers published by core authors and μ_{max} is the number of papers by the most prolific authors in the field (here μ_{max} = 3). According to this formula, core authors need to publish at least m papers. Therefore, m ≈ 1,30 in this paper, so authors with more than 2 publications (including 2) are positioned as core authors in the field, i.e., 62 core authors with a total of 128 publications, accounting for 59,26 % of the total number of publications, meeting the 50 % criterion proposed by Price. Table 1 gives highly productive authors who have published more than 3 articles in the field.

Table 1. High-productivity authors (≥3 publications)				
Rank	**Author**	**Documents**	**Citations**	**Average citation**
1	Xie, Chaowu	3	123	41
2	Yu, Jun	3	123	41
3	Hua, Ying	3	106	35,33
4	Huang, Ling	3	22	7,33

Although all four writers contributed three articles, Xie, Chaowu, and Yu, Jun's works received the most citations, with 123 and an average of 41, respectively. Both researchers work at Huaqiao University's College of Tourism and have partnered on various occasions. According to the published papers, both experts specialize on value-based marketing exploration, and their research backgrounds are mostly in live tourism. Hua, Ying is the second most popular academic, with 106 citations and an average of 35 citations per work.

Vosviewer was used to investigate the co-authorship relationships in 216 pieces of literature. According to the statistics, just 2,34 % of the literature was generated by one author individually, while the majority of the literature was co-authored by two to four writers, accounting for 79,17 % of the literature, with some studies co-authored by more than five authors. The closest co-authorship is discovered in two author groups consisting of three writers, Qiao, Kai, Li, Zhenyu, and Li, Zongwei, and four authors, Chen, Tinggui, Cong, Guodng, Tong, Chenhao, and Yang, Jianjun, with a total link strength of 9,0 %, much greater than that of the other authors. Much greater than the co-authorship link strengths of the other writers. Although the trend toward multi-author collaborative research is more obvious, there are fewer high-intensity and close co-authorship relationships, implying that a large number of mature and stable collaborative research relationships have yet to form in the current field of LSM.
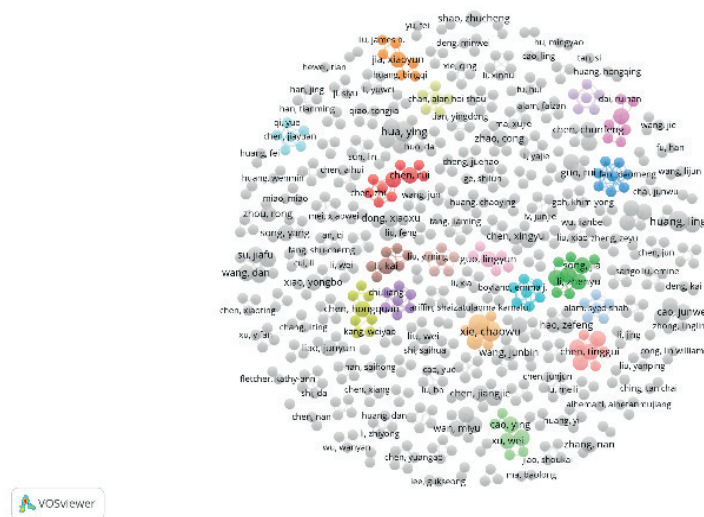

Figure 3. Co-authorship network in LSM research

Rank	Publications/Journal	Documents	Citations	Average citation
	Table 2. Top Journals by publication volume			
1	Frontiers in Psychology	20	308	15,40
2	Journal of Retailing and Consumer Service	14	336	24
3	Electronic Commerce Research	13	88	6,77
4	Plos One	9	23	2,56
5	Asia Pacific Journal of Marketing and Logistics	7	10	1,43
6	Sustainability	7	110	15,71
7	Sage Open	7	15	2,14
8	Electronic Commerce Research and Applications	6	49	8,17
9	Journal of Theoretical and Applied Electronic Commerce Research	6	50	8,33
10	Behavioral Sciences	6	8	1,5
11	Journal of Research in Interactive Marketing	6	140	23,33

Over the past 15 years, with the exception of a few general journals, the majority of publications featuring articles on this topic have primarily focused on e-commerce. Table 2 shows the top 11 journals by number of papers published. Journals with more than ten papers include Frontiers in Psychology, Journal of Retailing and Consumer Service, and Electronic Commerce Research, which have 20, 14, and 13 articles respectively. Frontiers in Psychology is one of these, indicating that the rapid rise of open access journals in recent years has had a significant impact on research advancement in the discipline. Although scientists continue to dispute on the ideal means to achieve open access, the principle that research findings should be made freely available has gained widespread acceptance. The citation analysis of journals reveals that the journal with the highest number of published citations is Journal of Retailing and Consumer Service, which has 14 articles with a total of 336 citations, with an average of 24 citations per publication, implying that the articles published in this journal are of high quality and have received a lot of attention. An examination of the published literature

reveals that the papers in this journal are primarily empirical research, concentrating on determining how various elements influence consumers' buy intention or behavior in live marketing.

To determine which nations have made the most significant contributions to the field of live marketing research, this study examined the number of publications from 18 countries. First, all nations with published articles were visualized using VOSviewer, with the results given in figure 4. It shows that larger circular nodes imply more publications, node connecting lines reflect the degree of link, thicker lines indicate more collaborative publications between the two nations, and node colors signify various clusters. As seen in figure 3, the distribution of nations publishing in the subject is quite unequal, with the top effect being particularly substantial, and the majority of articles produced by scientists from a few countries.
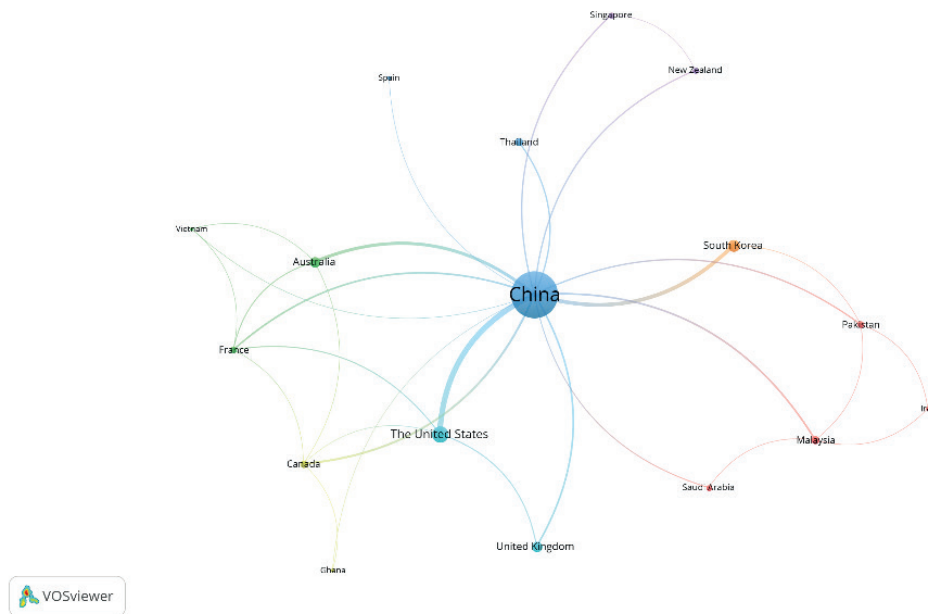

Figure 4. Nations with published articles

Table 3 lists the top five nations by the number of articles published in this discipline. Obviously, Chinese researchers provided the most research papers in this subject (195 in total), accounting for 90,28 % of the total number of publications, but the number of literature citations is low, and it can only be rated fourth among the five nations, barely ahead of South Korea. The United States ranks second with 23 articles published and 727 citations, with the greatest average number of citations per publication at 31,61. It is worth noting that Australia scored second out of the five countries, despite publishing only nine publications with 26 citations per piece.

Table 3. Top countries by publication output				
Rank	Country	Publications	Citations	Average citation
1	China	195	2970	15,23
2	The United States	23	727	31,61
3	South Korea	12	70	5,83
4	Australia	9	234	26
5	United Kingdom	9	141	15,67

Thematic and intellectual structure
Keyword Co-occurrence Analysis
Keywords connect the heart and spirit of a document, and keyword co-occurrence analysis can identify research hotspots in a scientific topic.[14] Keyword mapping was carried out on 216 publications using VOSviewer, and terms with a frequency higher than or equal to 7 were chosen for visualization. This produced the keyword co-occurrence mapping seen in figure 5.
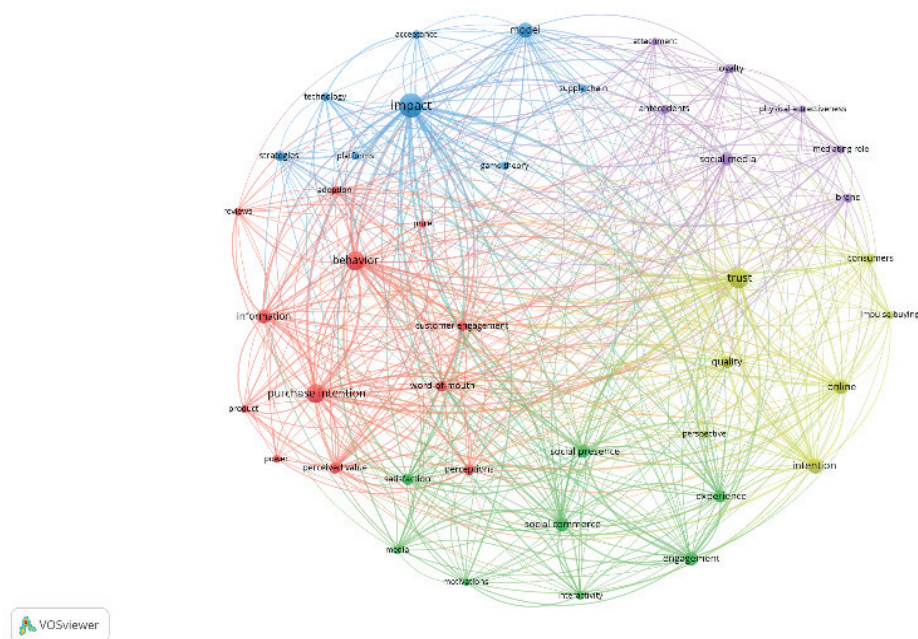
Figure 5. Keyword co-occurrence network

VOSviewer organizes all keywords into five grouped column groups based on keyword analysis and the greater the node in figure 4, the more frequently the term appears. As shown, high-frequency keywords such as effect, trust, behavior, and purchase intention are typical phrases in the area. To have a better knowledge of the intricacies of the terms, table 4 displays the unique clusters and their members.

		Table 4. Clusters and members
Rank	**Keywords**	**Member of a clustering**
1	Behavior	Adoption, Customer engagement, Information, Perceived value, Perceptions, Power, Price, Products, Purchase intention, Reviews, Word-of-mouth
2	Social commerce	Engagement, Experience, Interactivity, Media, Motivations, Satisfaction, Social presence
3	Impact	Acceptance, Game theory, Model, Platforms, Strategies, Supply chain, Technology
4	Trust	Consumers, Impulse buying, Intention, Online, Perspective, Quality
5	Social media	Antecedents, Attachment, Brand, Loyalty, Mediating role, Physical attractiveness

Combining figure 4 and table 4, we can see that, after excluding the core keywords in the search terms, high-frequency keywords such as impact, trust, and behavior demonstrate the goal of conducting live marketing research, which is to predict consumer buying behavior through the analysis and mining of impact factors in live marketing. Cui et al, for example, used the SOR model to test the effect of cognitive and perceptual cues on the impulse to buy impulsively through flow experience.[15] Furthermore, social media, social commerce, and other high-frequency keywords reflect comprehensive research on the performance evaluation of live marketing, particularly regarding the impact of emerging marketing tools such as short videos and live streaming on consumer purchase intention ; and a conceptual model has been proposed to outline the impact of live social media streaming on consumer decision-making at various stages.[16,17]

Co-citation Analysis

The co-citation analysis aims to identify publications that have been used more frequently in the field of research, as well as the journals that published them.[18] The co-citation mapping of journals was accomplished using VOSviewer by setting the minimum number of citations criterion for cited journals to 35, leaving 65 journals for co-citation analysis of cited journals, and ultimately displaying the mapping of co-citation links as shown in figure 6.
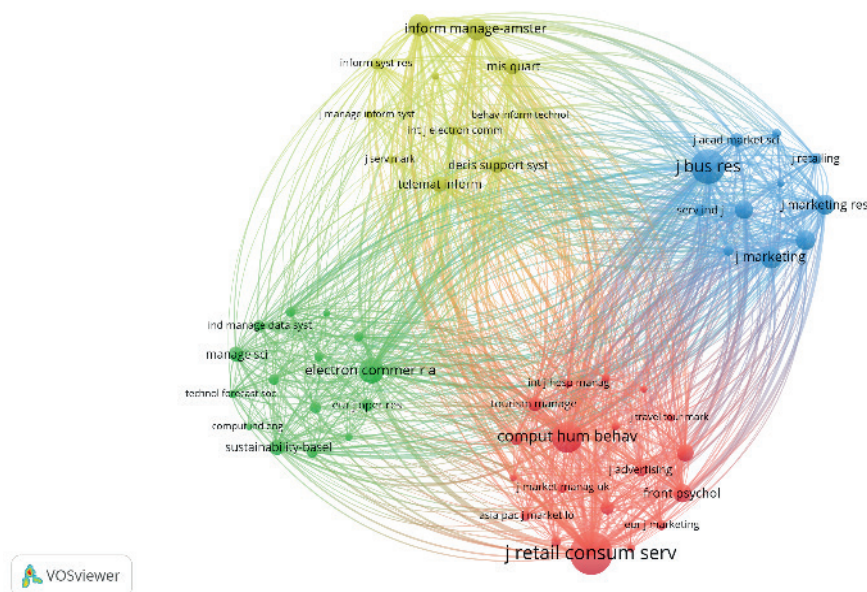
Figure 6. Co-citation mapping

Figure 6 shows that the co-citation network of journals is divided into four clusters corresponding to the four colors in the figure, with the top three most cited journals being Journal of Retailing and Consumer Service (795 citations), Journal of Business Research (554 citations), and Computers in Human Behavior (463 citations). All three journals come from JCR-1.

Among these four clusters, the journals in the blue and red clusters are primarily concerned with the influencing factors on purchasing behavior in live broadcast marketing, and the purpose of citing these journals is primarily to analyze and review the existing research to provide existing theoretical and empirical support for their own research; whereas the journals in the green and yellow clusters are primarily concerned with exploring The primary goal of mentioning these articles is to give technical backing for their own study.

Analyzing the top 5 cited articles in this subject from 2010 to 2022 reveals that the 5 highly co-referenced works are from 5 distinct author groups, as shown in table 5.

Table 5. Top 5 cited articles					
Rank	**Title**	**Author(s)**	**Journal**	**Year**	**Citation**
1	"The role of live streaming in building consumer trust and engagement with social commerce sellers."	Wongkitrungrueng, A., Assarut, N.	Journal of Business Research	2020	104
2	"How live streaming influences purchase intentions in social commerce: An IT affordance perspective."	Sun, Y., Shao, X., Li, X., Guo, Y., Nie, K.,	Electronic Commerce Research and Applications	2019	85
3	"The effects of match-ups on the consumer attitudes toward internet celebrities and their live streaming contents in the context of product endorsement."	Park, H. J., Li, M. L.	Journal of Retailing and Consumer Services	2020	56
4	"Live streaming commerce and consumers' purchase intention: An uncertainty reduction perspective."	Lu, B. J., Zhen, J. C.	Information & Management	2021	52
5	"Evaluating structural equation models with unobservable variables and measurement error."	Fornell, C., Larcker, D. F.	Journal of Marketing Research	1981	51

Next, we used VOSviewer to create a reference co-citation graph. When using VOSviewer to generate a reference co-citation graph, it is necessary to provide a minimum citation threshold for cited articles to ensure the graph's clarity and interpretability. Typically, the threshold should be determined depending on the size of the dataset and the study's requirements. Some studies used a minimum citation requirement of 20 to guarantee that the collected literature had enough influence to increase the analysis's reliability. For example, one research retrieved relevant literature from the Web of Science database between 1963 and 2018, evaluated articles with at least 20 citations, and built a co-citation network.[19] Thus, setting the minimum

citation threshold for a cited paper to 20, leaves us with 34 articles to study the co-citation of the cited papers, and ultimately showed a co-citation connection graph (figure 7).

Figure 7. Co-citation connection

Figure 7 depicts the literature co-citation connection, with each node representing a representative researcher and their literature inside each knowledge cluster. VOSviewer determines that the co-citation network of highly co-cited articles is separated into three primary clusters, which correspond to the three colors in the figure. This study combines literature reading to identify the research themes of the literature in each knowledge cluster and names the three knowledge clusters: the influence mechanism of consumer behavior in live e-commerce (red knowledge cluster), live commerce and technology application (green knowledge cluster), and trust construction and relationship marketing in live marketing (blue knowledge cluster).

The red knowledge cluster focuses on the mechanisms that influence consumer behavior in live e-commerce, with a particular emphasis on the dynamic role of anchor characteristics (e.g., physical characteristics, emotions, and professional skills) and interactivity in influencing consumer trust, engagement behavior, and purchase intention.[20,21,22,23] Most studies are based on psychological theories (e.g., signaling theory, S-O-R framework) and empirical data, revealing the importance of emotional interactions between anchors and viewers, as well as information transfer, on consumer decisions.[24,25,26,27] This knowledge cluster's research is substantially theory-driven and empirically rich, providing a solid foundation for future study.[28,29,30,31]

The green knowledge cluster focuses on the various applications of live streaming as a type of social commerce, including technological affordability (e.g., IT affordability), celebrity matching effects, and user motivations for continuous involvement (e.g., entertainment and social interaction). The study focuses on the mix of social elements (e.g., gender disparities, idolatry) and technology tools (e.g., text mining) to examine the psychosocial and technologically driven logic underlying user behavior.[32,33,34,35] This knowledge cluster's research examines diverse application scenarios of social commerce by merging technology and social variables.[36,37,38,39]

The blue knowledge cluster focuses on trust and relationship-building mechanisms in live streaming, such as seller strategies (for example, selling strategy), consumer perceived value (symbolic/hedonic), and techniques (for example, structural equation modeling).[40,41,42,43] Live streaming's impact on sales conversion and loyalty has been studied from both the seller's (e.g., customer acquisition strategies) and the consumer's (e.g., psychological distance) perspectives.[44,45,46,47] The study in this knowledge cluster investigates the commercial benefit of live streaming for buyers and sellers from both a trust and relationship standpoint.

DISCUSSION

This study conducted a comprehensive bibliometric analysis of the live streaming marketing (LSM) literature from 2010 to 2024 using VOSviewer. The findings reveal the overall development trajectory, core contributors, and thematic evolution of the field. Compared with prior bibliometric studies in adjacent domains such as social marketing and influencer marketing, the research on LSM is still in its formative phase, showing patterns

of rapid expansion but lacking structural maturity. Research findings are as follows.[48,49]

Research in the field of live broadcast marketing is gradually becoming more important, particularly in China, but research in this field in general began late and is currently in the stage of research consolidation; the research is not yet fully mature, and it is still in the stage of quantitative accumulation. Based on the distribution of authors, it is clear that current research is dominated by cooperative research in the form of multi-person or team research, but a stable core group of authors has yet to emerge, and a lack of sufficient academic influence has not yet resulted in the formation of a relatively stable group of authors collaborating.

The journals that publish articles in this topic are mostly focused on retail and e-commerce, with occasional papers appearing in more general publications. The large share of open access journals among those publishing articles in this discipline suggests that the open access movement has effectively aided the advancement of research in this area.

Keyword co-occurrence and evolution analysis show that this study field has grown fast over the last decade, with a significant increase in breadth and depth. For example, research based on numerous viewpoints and application situations, such as customers and sellers, has grown increasingly detailed, creating a solid platform for future study on various elements of consumer psychology and behavior, as well as business performance management.

The co-citation analysis identifies the most commonly referenced journals and articles in the area, allowing future academics to better understand the core content and general structure of the topic.

CONCLUSIONS

Using bibliometric techniques, this study offers a methodical summary of the development of the topic by examining co-citation networks, core journals, publication distribution, collaboration patterns and keyword dynamics. According to the results, LSM is a quickly developing but still young field of study, with a distributed author network and rising theme coverage. Its dissemination has been greatly aided by open access publication. Analyses of keywords and co-citations show a slow transition from exploratory research to more in-depth examinations of platform tactics, consumer psychology and business applications.

This research offers a valuable foundation for scholars seeking to engage with or contribute to LSM literature. It also highlights several underexplored areas, such as cross-cultural comparisons, theoretical integration, and methodological diversity that warrant further investigation. As LSM continues to evolve alongside digital technology and consumer trends, sustained scholarly attention will be essential to fully understand its implications for marketing theory and practice.

Limitations and recommendations

This study contains limitations due to a variety of circumstances. To begin, bibliometric analysis software has high data specifications and standards, so in order to ensure the quality and completeness of the collected data, this study only used journal articles from the core collection of Web of Science databases indexed by SSCI and SCIE, excluding other databases (e.g., Scopus); this naturally leads to the problem of incomplete data analysis. Furthermore, quantitative analysis necessitates the study and interpretation of data, which necessitates that researchers have a thorough grasp of the topic; otherwise, the results would be subjective.

We have reason to anticipate that live marketing research will continue to be dynamic, thus this study is significant and worth investigating further. In the following study, we must first integrate the literature from multiple databases to make the filtered data as comprehensive as possible and actively communicate with scholars in the field of live broadcast marketing to understand the field's cutting-edge development, improve and deepen the objective understanding of the field, and avoid the subjectivity of personal analysis and interpretation as much as possible.

BIBLIOGRAPHIC REFERENCES

1. Chen, C. C., & Lin, Y. C.. What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement. Telematics and Informatics, 2018:35(1), 293-303.

2. Chen, C., Ibekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of cocitation clusters: A multiple-perspective cocitation analysis. J Am Soc Inf Sci Technol, 61(7), 1386-1409.

3. Cui, Y., Liu, Y., & Gu, M. (2022). Investigating the key drivers of impulsive buying behavior in live streaming. J Glob Inf Manag, 30(1), 1-18. https://doi.org/10.4018/jgim.314226.

4. De Bellis, N. Bibliometrics and citation analysis: from the science citation index to cybermetrics. Scarecrow Press; 2009.

5. Deng, M. W., Yang, Y. T., & Sun, B. Q. Research on the purchase intention of social commerce consumers

in video streams: dual pathways of affection and rationality. Behav Sci. 2024;14(9):19. doi:10.3390/bs14090738

6. Fletcher, K. A., & Gbadamosi, A. Examining social media live stream's influence on the consumer decision-making: a thematic analysis. Electron Commer Res. 2024;24(3):2175-2205. doi:10.1007/s10660-022-09623-y

7. Fornell, C., & Larcker, D. F. Evaluating structural equation models with unobservable variables and measurement error. J Mark Res. 1981;18(1):39–50. doi:10.2307/3151312

8. Garfield, E. Citation indexes for science: a new dimension in documentation through association of ideas. Science. 1955;122(3159):108–111.

9. Guo, Y., Zhang, K., & Wang, C. Way to success: understanding top streamer's popularity and influence from the perspective of source characteristics. J Retail Consum Serv. 2022;64:102786.

10. Hou, F., Guan, Z., Li, B., & Chong, A. Y. L. Factors influencing people's continuous watching intention and consumption intention in live streaming: evidence from China. Internet Res. 2020;30(1):141–163.

11. Hu, M., & Chaudhry, S. S. Enhancing consumer engagement in e-commerce live streaming via relational bonds. Internet Res. 2020;30(3):1019–1041.

12. ITU. Global connectivity report 2022. Geneva: International Telecommunication Union; 2022. Available from: https://www.itu.int/itu-d/reports/statistics/global-connectivity-report-2022/index/.

13. Kang, K., Lu, J., Guo, L., & Li, W. The dynamic effect of interactivity on customer engagement behavior through tie strength: evidence from live streaming commerce platforms. Int J Inf Manag. 2021;56:102251.

14. Li, J., & Wei, R. B. Research on the current status of VOSviewer application and its knowledge base. J Agric Libr Inf. 2022;34(6):61–71.

15. Lin, Y., Yao, D., & Chen, X. Happiness begets money: emotion and engagement in live streaming. J Mark Res. 2021;58(3):417–438.

16. Lu, B., & Chen, Z. Live streaming commerce and consumers' purchase intention: an uncertainty reduction perspective. Inf Manag. 2021;58(7):103509.

17. Merton, R. K. The Matthew effect in science: the reward and communication systems of science are considered. Science. 1968;159(3810):56–63.

18. Park, H. J., & Lin, L. M. The effects of match-ups on the consumer attitudes toward internet celebrities and their live streaming contents in the context of product endorsement. J Retail Consum Serv. 2020;52:101934.

19. Pan, X., Yan, E., Cui, M., & Hua, W. Examining the usage, citation, and diffusion patterns of bibliometric mapping software: a comparative study of three tools. J Informetrics. 2018;12(2):481–493.

20. Estrada Meza RU, Carrillo Regalado S. Impact of the macrobus line on users' origin-destination travel times and costs, Guadalajara metropolitan area, 2012. Transport, Mobility & Society. 2022; 1:10.

21. Sanchez Carrillo SE, Rosso Cerón AM. Optimization of the drinking water treatment system in Bochalema: a technical and operational proposal. eVitroKhem. 2024; 3:38.

22. Rabozzi Orelo MJ. Mobile application for planning and monitoring healthy eating habits with artificial intelligence and augmented reality. Nursing Depths Series. 2024; 3:132.

23. Hernández Bridón N, Pallerols Mir M. Management and Teaching in Health Science. South Health and Policy. 2022; 1:14.

24. Price, D. Little science, big science. New York: Basic Books; 1963.

25. Statista. Gen Z: where the shopping journey starts 2023. https://www.statista.com/statistics/1395020/popular-channels-for-gen-z-to-start-shopping/.

26. Sun, X. Consumer intention and usage behavior of live-streaming shopping: an extension of the unified theory of acceptance and use of technology. J Behav Sci. 2022;17(3):106–124.

27. Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. How live streaming influences purchase intentions in social commerce: an IT affordance perspective. Electron Commer Res Appl. 2019;37:100886.

28. Guataquira Rincón JL, Cuéllar Rodríguez RR, Palomino Boshell LD. Towards a Comprehensive Assessment of Water Quality in Colombia: Challenges and Proposals in the Face of Emerging Contaminants. Environmental Research and Ecotoxicity. 2023; 2:56.

29. González C GA, Navarro Noriega EDC. Integrated design and quality in government buildings. Land and Architecture. 2025; 4:152.

30. Díaz Cruz SA, Batista Villar T, Valido-Valdes D, Núñez Núñez Y, Fernández González JL. Factors that impact in the answer of the ulcers from the diabetic foot to the Heberprot-P®. Podiatry (Buenos Aires). 2025; 4:151.

31. Andrés Culetto L, Peña Álvarez E. Open innovation to accelerate the adoption of artificial intelligence in the financial services industry. EthAIca. 2024; 3:138.

32. Van Eck, N., & Waltman, L. Software survey: VOSviewer, a computer program for bibliometric mapping. Sci Metr. 2010;84(2):523–538.

33. Van Eck, N. J., & Waltman, L. Text mining and visualization using VOSviewer. ArXiv. 2011. arXiv:1109.2058.

34. Van Eck, N. J., Waltman, L., Dekker, R., & Van Den Berg, J. A comparison of two techniques for bibliometric mapping: multidimensional scaling and VOS. J Am Soc Inf Sci Technol. 2010;61(12):2405–2416.

35. Wongkitrungrueng, A., & Assarut, N. The role of live streaming in building consumer trust and engagement with social commerce sellers. J Bus Res. 2020;117:543–556.

36. Azuaje G OA, Rosales A, Da Silva F. Application of a Methodological Framework for the Development of a Hazop Study of a CSTR Reactor for the Production of Propylene Glycol from Propylene Oxide Using Process Simulation in Aspen Hysys. eVitroKhem. 2024; 3:101.

37. Tirado J. Big data and artificial intelligence for innovation in management in the agricultural industry in Extremadura. EthAIca. 2022; 1:38.

38. Santaya Labrador JM, Perojo López OL. Information management in university residences: an experience from the UCM in Pinar del Río. South Health and Policy. 2023; 2:71.

39. Estrada Meza RU, González Pérez MG. Characterisation of fair and sustainable technical fares for public transport in the Guadalajara metropolitan area, Mexico. Case study: Troncal 05. López Mateos. Transport, Mobility & Society. 2023; 2:59.

40. Wongkitrungrueng, A., Dehouche, N., & Assarut, N. Live streaming commerce from the sellers' perspective: implications for online relationship marketing. J Mark Manag. 2020;36(5–6):488–518.

41. Zhang, M., Qin, F., Wang, G. A., & Luo, C. The impact of live video streaming on online purchase intention. Serv Ind J. 2019;40(9–10):656–681. doi:10.1080/02642069.2019.1576642.

42. Shekhar, S. K., & Venugopal, P. Social marketing and consumer behavior: a bibliometric analysis. Future Bus J. 2025;11(1):85.

43. Ye, G., Hudders, L., De Jans, S., & De Veirman, M. The value of influencer marketing for business: a bibliometric analysis and managerial implications. J Advert. 2021;50(2):160–178.

44. Valencia DS. Training plan for the conservation and implementation of coccinellids (Coleoptera: Coccinellidae) as natural biological control agents. Environmental Research and Ecotoxicity. 2023; 2:52.

45. Auza-Santivañez JC, Bautista-Vanegas FE, Carías A, Apaza Huanca B, Sosa Remón A, Condo-Gutierrez AR, et al. Structural and functional disorders in children's feet, motor development, and preventive approaches in early life. Podiatry (Buenos Aires). 2025; 4:163.

46. Rabozzi Orelo MJ. Technology and conscious eating: a necessary convergence. Nursing Depths Series. 2024; 3:106.

47. Angulo Rincón SO, Solarte Solarte CM. Green innovation and territorial development in cocoa-growing communities. Land and Architecture. 2024;3:107.

48. Live streaming market size, share & growth report, 2030. Live streaming market size, share & growth report, 2030. Available from: https://www.grandviewresearch.com/industry-analysis/live-streaming-market-report.

49. Vogue Business in partnership with AliExpress. Live streaming ushers in a new era for e-commerce. Vogue Business. 2024. Available from: https://www.voguebusiness.com/story/technology/live-streaming-ushers-in-a-new-era-for-e-commerce.

FINANCING
No financing.

CONFLICT OF INTEREST
The authors declare that there is no conflict of interest.

AUTHORSHIP CONTRIBUTION
Conceptualization: Nuohan Li.
Data curation: Nuohan Li.
Formal analysis: Nuohan Li.
Project management: Nadzirah Binti Rosli.
Supervision: Nadzirah Binti Rosli.
Drafting - original draft: Nuohan Li.
Writing - proofreading and editing: Nadzirah Binti Rosli.