

SOCIAL COMMERCE RESEARCH IN THE DIGITAL ERA: A BIBLIOMETRIC ANALYSIS OF RESEARCH TRENDS, INTELLECTUAL STRUCTURE, AND EMERGING THEMES BASED ON SCOPUS DATA (2020–2026)

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ABSTRACT

Social commerce has emerged as an important component of the digital economy, integrating social interaction, electronic commerce, digital marketing, and consumer engagement. This study aims to examine the research trends, intellectual structure, and emerging themes in social commerce research during 2020–2026. A bibliometric analysis was conducted using publications indexed in the Scopus database. An initial search identified 26,428 documents, which were subsequently filtered by subject area, document type, language, and open-access status, resulting in 2,821 documents for the final analysis. Data were analyzed using VOSviewer and Bibliometrix/Biblioshiny through keyword co-occurrence, density, and overlay analyses. The findings indicate that commerce, electronic commerce, social media, marketing, and social commerce constitute the core conceptual structure of the field. Meanwhile, customer engagement, influencer marketing, impulse buying, digitalization, and livestream commerce represent increasingly important research directions. The overlay analysis further reveals the emergence of artificial intelligence, large language models, and AI-enabled digital commerce as recent research frontiers. Geographically, China, the United Kingdom, and the United States are the leading contributors, while Indonesia also demonstrates a substantial contribution to the field. Overall, the findings indicate a transition from conventional e-commerce and social media research toward interactive, personalized, influencer-mediated, and intelligent social commerce. The study provides a comprehensive overview of the evolution of social commerce research and identifies opportunities for future research, particularly concerning AI, algorithmic personalization, influencer commerce, livestreaming, sustainability, and cross-cultural consumer behavior.

Keywords: *social commerce; e-commerce; social media; bibliometric analysis; VOSviewer*

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I. INTRODUCTION

The rapid expansion of digital platforms, social media, mobile technologies, and interactive communication has fundamentally transformed the contemporary business environment. Consumers are no longer positioned merely as recipients of commercial information but increasingly participate in content creation, product evaluation, recommendation, and purchasing activities through digitally mediated social interactions. This transformation has contributed to the emergence of social commerce, which integrates commercial transactions with social media functionalities and interpersonal interactions. Social commerce therefore represents an important evolution of electronic commerce because it combines transactional activities with social interaction, user-generated content, electronic word-of-mouth, recommendations, and community engagement (Hajli, 2015; Liébana-Cabanillas et al., 2019). Rather than treating commerce and social interaction as separate activities, social commerce creates an integrated environment in which social interaction can facilitate product discovery, trust formation, engagement, and purchasing decisions.

The importance of social commerce has increased substantially during the 2020–2026 period. The COVID-19 pandemic accelerated the adoption of digital technologies and online purchasing practices, while social media platforms increasingly incorporated commercial functions into their ecosystems. These developments have strengthened the convergence between social networking and electronic commerce and have encouraged businesses to use social platforms not only for communication and promotion but also for product discovery, customer engagement, and transactions. Research has demonstrated that social commerce adoption is influenced by multiple social and technological factors, including social support, trust, social presence, perceived usefulness, and perceived value (Dwivedi et al., 2023; Leong et al., 2023). The growing integration of social and commercial activities has consequently positioned social commerce as an important research domain within digital marketing, information systems, consumer behavior, and business studies.

The development of social commerce has also produced a substantial diversification of research themes. Early research frequently emphasized social commerce adoption, trust, social support, social presence, and purchase intention, whereas subsequent studies have increasingly examined customer engagement, electronic word-of-mouth, interactivity, social influence, impulse buying, platform

affordances, and consumer experience. A recent meta-analysis demonstrated that social commerce outcomes are shaped by a combination of informational, emotional, social, and technological factors, indicating that consumer responses cannot be explained adequately through a single theoretical perspective (Leong et al., 2023). Similarly, research on social commerce engagement has highlighted the importance of community, collaboration, and interactivity in shaping customer engagement and subsequent behavioral responses (Algharabat et al., 2020). These developments suggest that social commerce research has progressively shifted from a narrow focus on technology adoption toward a broader examination of the interaction between technological affordances, social relationships, and consumer psychology.

An especially important development during the recent period has been the emergence of livestream commerce as a closely related form of social commerce. Livestream commerce combines real-time video, social interaction, product presentation, entertainment, and immediate purchasing opportunities within a single digital environment. The interactive characteristics of livestreaming can reduce the psychological distance between sellers and consumers while simultaneously increasing product vividness, social presence, and consumer involvement. Recent empirical research indicates that interactivity, authenticity, and vividness can significantly influence consumers' purchase intentions in livestream social commerce environments (Batra & Sharma, 2024). The increasing convergence between social commerce and livestream commerce has therefore expanded the conceptual boundaries of the field and created new research questions concerning real-time interaction, influencer and creator roles, social proof, consumer trust, and platform-mediated purchasing behavior.

Technological developments have further accelerated this transformation. Artificial intelligence is increasingly being integrated into digital commerce through recommendation systems, conversational agents, virtual streamers, automated content generation, and personalized shopping experiences. Recent research has begun to examine how AI-enabled virtual streamers influence consumer purchase intentions in livestreaming environments, demonstrating that the role of artificial intelligence is becoming increasingly relevant to the social and experiential dimensions of digital commerce (Sun & Tang, 2024). The emergence of AI-enabled commercial interactions suggests that the future of social commerce may involve increasingly complex relationships among consumers, human creators, algorithms, virtual agents, brands, and digital platforms. Consequently,

contemporary social commerce research is expanding beyond conventional social media interactions toward technologically mediated and algorithmically enhanced forms of commerce.

Despite the rapid growth of the literature, social commerce research remains highly interdisciplinary and conceptually fragmented. Researchers have employed a variety of theoretical perspectives to explain social commerce behavior, including the Technology Acceptance Model, Theory of Planned Behavior, social support theory, social presence theory, trust-based approaches, and stimulus-organism-response perspectives. This theoretical diversity reflects the multidimensional nature of social commerce but also makes it difficult to determine how the intellectual structure of the field has evolved over time. Meta-analytic evidence suggests that social support, trust, perceived value, and other social and psychological mechanisms have different roles in explaining consumer responses to social commerce (Dwivedi et al., 2023; Leong et al., 2023). Therefore, a systematic examination of the relationships among major concepts, authors, sources, institutions, and research themes is necessary to understand the development and intellectual structure of this increasingly complex field.

Bibliometric analysis provides an appropriate methodological approach for addressing this need because it enables researchers to systematically examine the development, structure, and evolution of a scientific field. Bibliometric techniques can identify publication and citation trends, influential authors, journals, institutions, countries, collaboration networks, co-citation structures, bibliographic coupling, and keyword co-occurrence patterns. More importantly, science-mapping techniques can reveal the conceptual structure of a research domain and identify emerging themes that may not be apparent from conventional narrative reviews. Recent bibliometric research confirms that social commerce has developed into a broad and increasingly interdisciplinary research field. Herzallah et al. (2025), for example, conducted a comprehensive bibliometric analysis of social commerce research and identified substantial changes in the field's intellectual and thematic development. Their findings demonstrate the value of bibliometric approaches for examining the historical evolution and future directions of social commerce scholarship.

Nevertheless, the continuing transformation of the digital commerce environment creates a need for a more temporally focused examination of the literature. Existing bibliometric research has generally employed broad historical periods to capture the development of social commerce as a research domain. For

example, Herzallah et al. (2025) examined the field from a long-term perspective and provided an extensive overview of its past, present, and future development. While such an approach is valuable for understanding the historical foundations of the field, a more focused analysis of the 2020–2026 period can provide a different contribution by concentrating on the most transformative phase of contemporary social commerce. This period encompasses the acceleration of digital commerce during and after the COVID-19 pandemic, the rapid expansion of social shopping, the development of livestream commerce, the growing influence of content creators and influencers, and the increasing integration of artificial intelligence into digital shopping environments. A recent bibliometric study focusing specifically on trust in social commerce also indicates that research is increasingly incorporating live endorsement and social proof, demonstrating the emergence of new conceptual dimensions within the field (Jati et al., 2026). Thus, an updated bibliometric mapping is necessary to determine whether and how the research priorities of social commerce have shifted during this period.

Against this background, this study aims to provide a comprehensive bibliometric analysis of social commerce research published between 2020 and 2026 and indexed in the Scopus database. The study specifically examines the development of publication and citation performance, influential authors and sources, geographical and institutional contributions, collaboration patterns, intellectual structures, and the evolution of research themes. In addition, the study seeks to identify emerging research topics that characterize the contemporary social commerce landscape. By focusing on the 2020–2026 period, this research contributes an updated temporal perspective that captures the transition of social commerce from conventional social media-based shopping toward more interactive, platform-mediated, livestream-enabled, influencer-driven, and AI-enhanced forms of digital commerce. The findings are expected to provide researchers with a structured understanding of the intellectual and conceptual development of the field while offering directions for future research in digital marketing, consumer behavior, information systems, and business research.

II. LITERATURE REVIEW

Social commerce represents the integration of social media functionalities, social interaction, and commercial activities within digital environments. Unlike conventional e-commerce, social commerce enables consumers to participate

actively in product discovery, information exchange, recommendations, reviews, and purchasing through social interactions. Liang and Turban (2011) conceptualized social commerce as an extension of e-commerce in which social media facilitates interactions among consumers and between consumers and sellers, while Hajli (2015) emphasized the role of social commerce constructs in developing trust and purchase intention. Accordingly, social commerce has evolved from a transactional environment into a broader digital ecosystem in which social relationships, user-generated content, and technological affordances influence commercial outcomes.

The theoretical development of social commerce research reflects its multidimensional nature. Studies have employed the Technology Acceptance Model, Theory of Planned Behavior, social support theory, social presence theory, and Stimulus-Organism-Response framework to explain consumer behavior in social commerce environments (Ajzen, 1991; Davis, 1989; Mehrabian & Russell, 1974). These perspectives demonstrate that social commerce behavior is influenced not only by technological characteristics but also by trust, social influence, perceived value, social support, interactivity, and psychological responses. Recent evidence further indicates that social support, trust, and other social and psychological mechanisms play important roles in explaining social commerce adoption and behavioral intention (Leong et al., 2023). This theoretical diversity demonstrates the interdisciplinary character of social commerce while simultaneously contributing to the fragmentation of its intellectual structure.

The empirical literature has increasingly focused on consumer engagement and behavioral outcomes. Social interaction, electronic word-of-mouth, online reviews, recommendations, and community participation can reduce uncertainty and strengthen trust, while interactivity and social presence can increase consumers' engagement with platforms, sellers, and brands (Algharabat et al., 2020). Consequently, purchase intention, customer engagement, loyalty, electronic word-of-mouth, and impulse buying have become important outcomes within social commerce research. The increasingly interactive nature of digital platforms has also blurred the boundaries between social interaction and commercial persuasion, making consumer behavior in social commerce fundamentally different from traditional online shopping.

Since 2020, the scope of social commerce research has expanded considerably alongside the rapid development of livestream commerce, influencer marketing, creator commerce, and platform-based shopping. Livestream commerce integrates

real-time interaction, product demonstrations, entertainment, social presence, and immediate purchasing opportunities, thereby strengthening the social and experiential dimensions of digital commerce. At the same time, influencers and content creators increasingly function as intermediaries between brands and consumers by generating social proof, trust, engagement, and product recommendations. These developments have shifted research attention from conventional social commerce adoption toward more complex questions concerning interactivity, authenticity, consumer engagement, impulse buying, and social influence.

Artificial intelligence has further introduced a new dimension to social commerce research. AI-powered recommendation systems, conversational agents, virtual influencers, and AI-enabled livestreaming are increasingly integrated into digital shopping environments. Recent research on AI-enabled virtual streamers demonstrates that artificial intelligence can influence consumer purchase intentions in livestream commerce (Sun & Tang, 2024). The emergence of AI therefore introduces new research questions concerning personalization, algorithmic interaction, authenticity, trust, human–AI relationships, and consumer decision-making. Together with livestream commerce and influencer-mediated shopping, these developments indicate that the conceptual boundaries of social commerce are continuously expanding.

The increasing volume and interdisciplinary nature of social commerce publications make bibliometric analysis particularly relevant. Bibliometric methods allow researchers to identify publication and citation trends, influential authors and journals, collaboration patterns, intellectual structures, conceptual clusters, and emerging research themes through techniques such as co-authorship, co-citation, bibliographic coupling, and keyword co-occurrence analysis (Donthu et al., 2021). Previous bibliometric research has demonstrated the substantial development and diversification of social commerce scholarship (Herzallah et al., 2025). However, the period 2020–2026 represents a particularly important phase characterized by the acceleration of digital commerce, the expansion of livestream and influencer commerce, and the increasing integration of artificial intelligence. A focused bibliometric examination of this period can therefore provide an updated understanding of how research priorities, intellectual structures, and emerging themes have evolved in contemporary social commerce scholarship.

III. RESEARCH METHODOLOGY

This study employed a bibliometric analysis to systematically examine the development, intellectual structure, and emerging themes of social commerce research. Bibliometric analysis was selected because it enables the quantitative mapping of scientific publications and provides an objective overview of research productivity, citation impact, collaboration patterns, conceptual relationships, and thematic evolution (Donthu et al., 2021). The study followed a structured research procedure consisting of database selection, search strategy, data screening, data extraction, and bibliometric analysis.

The bibliographic data were retrieved exclusively from the Scopus database, which was selected because of its broad multidisciplinary coverage and standardized bibliographic information. The search was conducted in August 2026, with the publication period limited to 2020–2026. The search strategy was designed to capture publications explicitly addressing social commerce and related terminology. The search query used the following Boolean expression in the Scopus TITLE-ABS-KEY field: TITLE-ABS-KEY ("social commerce" OR "social e-commerce" OR "social ecommerce" OR "social shopping")

The search was subsequently restricted to journal articles and conference papers written in English and published between 2020 and 2026. Documents outside the defined publication period, non-English publications, books, book chapters, editorials, notes, letters, and other document types were excluded. Duplicate records and publications that were not substantively related to social commerce were also removed during the screening process. The final dataset was then exported from Scopus in CSV and RIS formats to facilitate subsequent bibliometric analysis.

The analysis was conducted using VOSviewer and Bibliometrix/Biblioshiny. Biblioshiny was used to perform descriptive and performance analyses, including annual scientific production, citation trends, most productive authors, sources, countries, institutions, and the overall development of the research field. VOSviewer was employed to construct and visualize scientific networks, including co-authorship, co-occurrence, citation, bibliographic coupling, and co-citation networks. Keyword co-occurrence analysis was used to identify the dominant concepts and conceptual clusters within social commerce research, while bibliographic coupling and co-citation analyses were used to examine relationships among publications and identify the intellectual structure of the field (van Eck & Waltman, 2010; Aria & Cuccurullo, 2017).

In addition to descriptive analysis, the study examined the evolution of research themes during the 2020–2026 period. Keywords were standardized before analysis by merging synonymous terms and correcting variations in terminology where appropriate. Thematic mapping was performed using the dimensions of centrality and density to classify research themes into motor themes, basic themes, niche themes, and emerging or declining themes. Thematic evolution analysis was then used to identify changes in the conceptual structure of social commerce research across different periods. Particular attention was given to emerging concepts associated with livestream commerce, influencer commerce, social shopping, consumer engagement, impulse buying, platform affordances, and artificial intelligence.

The methodological workflow was designed to ensure transparency and reproducibility. The study therefore reports the database, search period, search query, document types, language restrictions, analytical software, and bibliometric techniques used in the research. The overall analytical procedure consisted of five stages: (1) identification of relevant publications from Scopus; (2) screening and application of inclusion and exclusion criteria; (3) data cleaning and standardization; (4) performance and science-mapping analysis; and (5) interpretation of intellectual structures and emerging research themes. This procedure provides a systematic basis for assessing how social commerce research has developed between 2020 and 2026 and for identifying directions for future research.

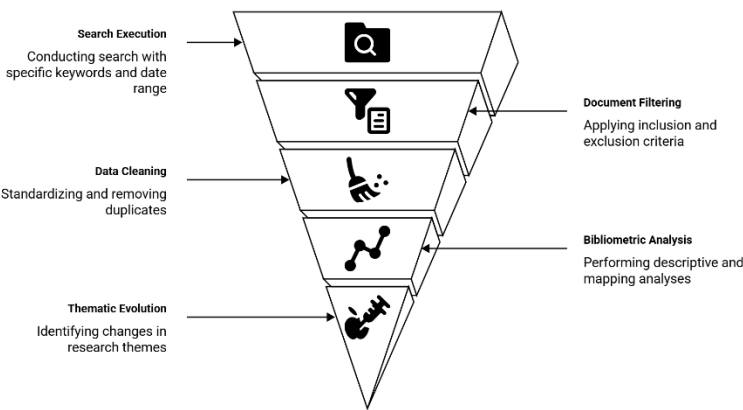


Figure 1. Stages in Conducting Bibliometric Research

IV. RESULTS AND DISCUSSION

RESULTS

Descriptive Overview of Social Commerce Research

The initial Scopus search identified 26,428 documents related to social commerce published between 2020 and 2026, before applying any subject-area, document-type, language, or open-access restrictions. This initial result indicates the substantial volume of scholarly attention surrounding social commerce during the selected period. However, the broad search results also included publications from disciplines and document categories beyond the specific focus of the present study. Therefore, a series of filtering procedures was applied to obtain a more relevant and analytically manageable dataset.

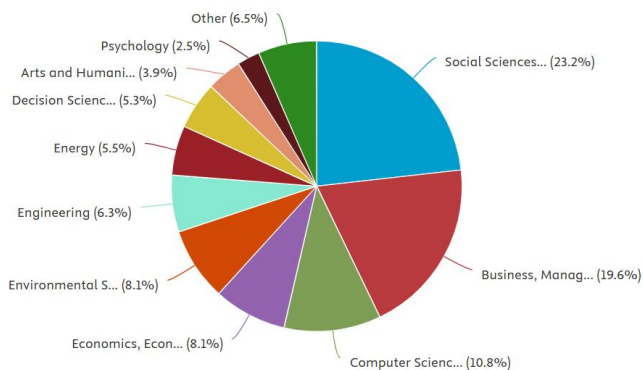


Figure 2. Subject Area of Social Commerce Research in Scopus

The dataset was subsequently refined by limiting the subject areas to Social Sciences; Business, Management and Accounting; and Economics, Econometrics and Finance. The document type was restricted to articles, the language to English, and the accessibility status to Open Access. Following these criteria, the dataset was reduced from 26,428 to 2,821 documents, which constituted the final dataset for the bibliometric analysis. The subject-area distribution shows that Social Sciences accounted for 1,608 documents, followed by Business, Management and Accounting with 1,359 documents, and Economics, Econometrics and Finance. Because Scopus allows a single publication to be indexed in more than one subject area, these figures should not be interpreted as mutually exclusive categories. The overlap indicates the inherently interdisciplinary

character of social commerce research, particularly at the intersection of social sciences, business, management, and economics.

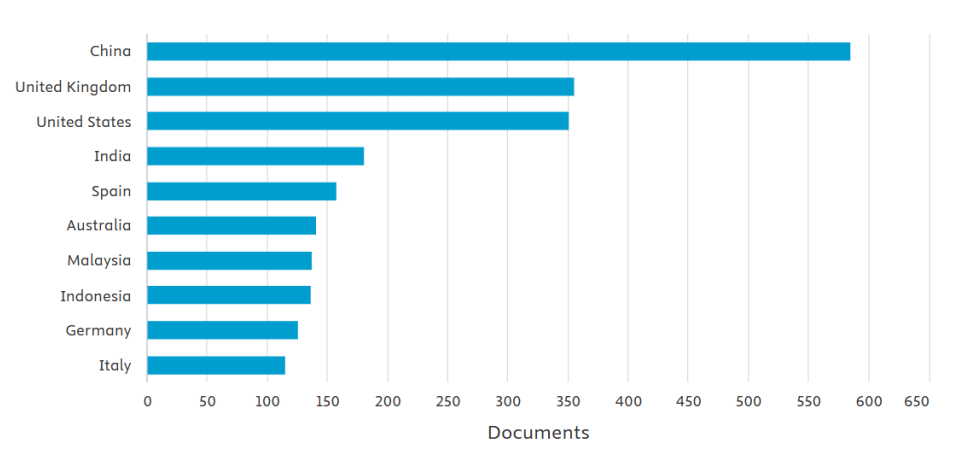


Figure 3. Geographical Distribution in Social Commerce Research

The geographical distribution of the final dataset demonstrates a broad international interest in social commerce research. China emerged as the most productive country, with 584 publications, followed by the United Kingdom (355) and the United States (350). Other major contributors included India (180), Spain (157), Australia (140), Malaysia (137), Indonesia (136), Germany (125), Italy (114), and the Netherlands (102). The strong contribution of China is particularly notable, accounting for approximately one-fifth of the identified country-level publications. The United Kingdom and the United States also demonstrate substantial research productivity, indicating that social commerce has become an important research topic across both Asian and Western academic communities. Meanwhile, the presence of Malaysia and Indonesia among the ten most productive countries highlights the growing contribution of Southeast Asian scholars to social commerce research.

The broader geographical distribution further demonstrates that social commerce has developed into a genuinely global research field. Publications were identified from countries across Asia, Europe, North America, South America, Africa, and Oceania. In addition to the leading countries, substantial contributions were observed from France (86), Viet Nam (84), South Korea (84), Saudi Arabia (73), Canada (72), Thailand (65), Brazil (64), Hong Kong (60), Sweden (59), Portugal (55), Taiwan (54), and Turkey (51). Although many countries contributed fewer than 50 publications, their presence indicates the diffusion of social commerce

scholarship beyond the major research-producing economies. This geographical breadth is consistent with the inherently global nature of digital platforms, where social commerce practices operate across national and cultural boundaries.

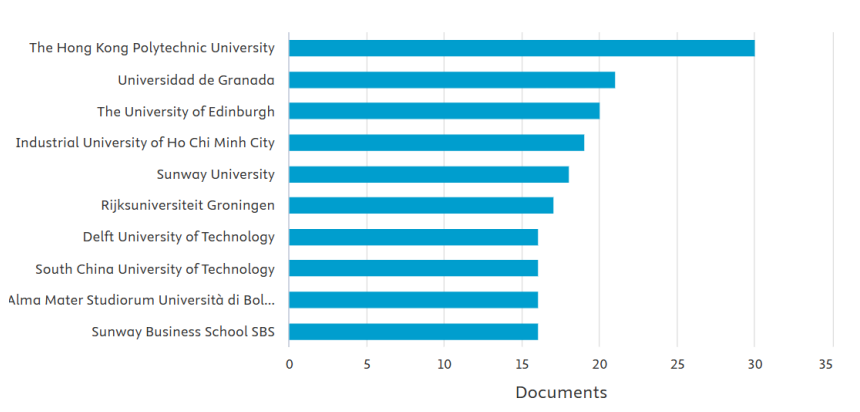


Figure 4. The Affiliation Distribution of Social Commerce Research

At the institutional level, the distribution of publications reveals a similarly diverse research landscape. The Hong Kong Polytechnic University was the most productive institution, with 30 publications, followed by the Universidad de Granada (21), The University of Edinburgh (20), and the Industrial University of Ho Chi Minh City (19). Other prominent institutions included Sunway University (18), Rijksuniversiteit Groningen (17), Delft University of Technology (16), South China University of Technology (16), Alma Mater Studiorum Università di Bologna (16), and Sunway Business School (16). The institutional ranking further includes leading universities from the United Kingdom, China, Malaysia, Australia, the Netherlands, Spain, Singapore, Indonesia, and other countries, demonstrating the multidisciplinary and geographically dispersed nature of social commerce research.

The institutional results also reveal an important pattern concerning the relationship between social commerce research and universities with strong capabilities in business, management, information systems, technology, and social sciences. Institutions such as Tsinghua University, University of Oxford, University of Manchester, National University of Singapore, University of Hong Kong, London School of Economics and Political Science, University of Queensland, Universitas Padjadjaran, Universitas Indonesia, and Bina Nusantara University appear among the productive institutions in the dataset. This distribution

reinforces the observation that social commerce research is not confined to a single academic discipline but is increasingly positioned at the intersection of digital technology, business, marketing, consumer behavior, and social science.

Keyword Co-Occurrence and Conceptual Structure

The keyword co-occurrence analysis was conducted using VOSviewer to identify the conceptual structure of social commerce research during 2020–2026. The visualization reveals a highly interconnected research landscape characterized by several major thematic clusters. The size of the nodes represents the frequency of keyword occurrences, while the connecting lines indicate the strength of relationships between keywords. The proximity of nodes also reflects the degree of conceptual association among terms. Overall, the network demonstrates that social commerce research is strongly connected with broader concepts of commerce, electronic commerce, social media, marketing, social networking, artificial intelligence, consumer behavior, sustainability, and digital transformation.

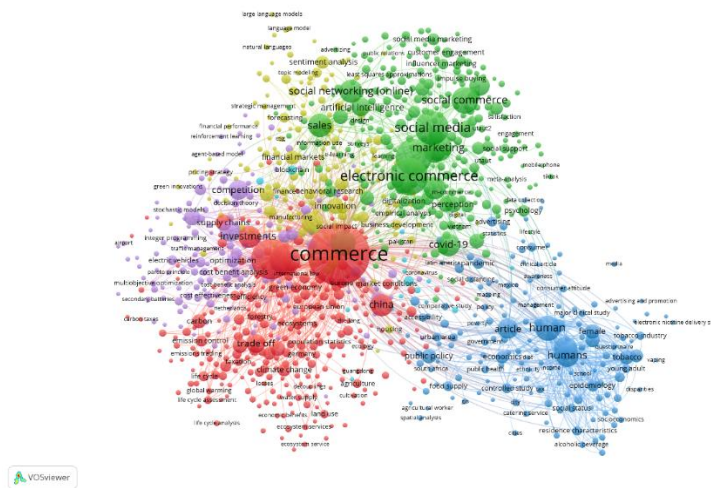


Figure 5. Network Visualization of Social Commerce

The most prominent keyword in the network is “commerce”, represented by the largest node at the center of the visualization. Its central position and extensive connections indicate that social commerce research remains strongly embedded within the broader commerce and digital commerce literature. Closely connected to this central concept are

“electronic commerce,” “social media,” “marketing,” “social commerce,” and “social networking (online)”. The strong relationship among these keywords suggests that contemporary social commerce research is primarily structured around the convergence between electronic commerce and social media. In particular, the proximity of *social commerce*, *social media*, *marketing*, and *electronic commerce* indicates that social commerce is increasingly conceptualized not merely as a transactional mechanism but as a digitally mediated marketing and consumer engagement ecosystem.

A prominent green cluster is centered on social media, social commerce, marketing, social media marketing, influencer marketing, customer engagement, social support, impulse buying, and consumer-related concepts. This cluster reflects the strong behavioral and marketing orientation of social commerce research. The presence of *influencer marketing*, *customer engagement*, and *impulse buying* suggests that researchers increasingly investigate how social interactions and persuasive digital content influence consumer responses. The appearance of terms such as TikTok, mobile phone, engagement, satisfaction, and social support further indicates the growing importance of mobile and platform-based social commerce. This cluster therefore represents a major research stream concerned with the relationship between social media environments, marketing activities, and consumer behavior.

Another important feature is the emergence of artificial intelligence as a visible keyword positioned close to social networking, social commerce, electronic commerce, and marketing. Its relatively central location suggests that AI has become increasingly connected to mainstream digital commerce research rather than remaining an isolated technological topic. The network also includes related terms such as *language model*, *large language models*, *natural languages*, *sentiment analysis*, *topic modeling*, and *machine learning*. This indicates an emerging technological research direction in which AI, natural language processing, and data-driven analytical techniques are increasingly incorporated into social commerce and digital marketing research.

The visualization also identifies a red cluster associated with commerce, trade-off, carbon, emissions, climate change, green economy, ecosystems, and sustainability-related concepts. Although this cluster is less directly associated with the core social commerce concepts, its presence demonstrates that the broader commerce literature represented in the dataset intersects with sustainability and environmental economics. Keywords such as *green economy*, *carbon*, *climate change*, *emission control*,

life cycle, and *ecosystem services* indicate a substantial sustainability-oriented research stream. This finding suggests that social commerce research exists within a wider scholarly ecosystem in which digital commerce is increasingly discussed alongside environmental and sustainability considerations.

A blue cluster appears relatively distinct from the central social commerce network and is dominated by human, health, consumer, public policy, economics, epidemiology, social status, and demographic variables. Terms such as *female*, *young adult*, *consumer attitude*, *poverty*, *income*, *government*, and *public policy* indicate research that examines social and demographic dimensions of human behavior. The presence of *COVID-19*, *coronavirus*, and *social distancing* further demonstrates the strong influence of the pandemic on research published during the 2020–2026 period. These keywords suggest that the development of digital commerce and social commerce was examined within broader changes in consumer behavior and social life during the pandemic.

The purple cluster is primarily associated with competition, supply chains, investment, optimization, manufacturing, pricing strategy, financial performance, and decision-making. This cluster represents the business, operational, and economic dimensions of the literature. The presence of *supply chains*, *investment*, *competition*, *optimization*, and *pricing strategy* indicates that commerce research extends beyond consumer behavior toward organizational and strategic issues. The relationship between this cluster and the central *commerce* node suggests that social commerce research is also embedded within broader discussions of business strategy, market competition, and organizational performance.

The visualization also reveals that social commerce research has not developed as a single homogeneous research stream. Rather, it consists of interconnected clusters representing digital marketing and consumer behavior, AI and digital technologies, business and strategic management, sustainability and green commerce, and social-demographic research. This multidimensional structure provides evidence that social commerce has evolved into a broad interdisciplinary research domain. The subsequent analysis of co-citation, bibliographic coupling, and thematic evolution is therefore necessary to identify the intellectual communities underlying these keyword clusters and to determine which themes represent established, emerging, or potentially declining areas of research.

Keyword Density Analysis

The keyword density visualization provides a complementary perspective on the conceptual structure of social commerce research by highlighting areas with the highest concentration of frequently occurring keywords. Unlike the network visualization, which emphasizes relationships among terms, the density map identifies the research areas that receive the greatest concentration of scholarly attention. In the visualization, the yellow areas represent the highest keyword density, followed by green and blue areas with progressively lower concentrations.

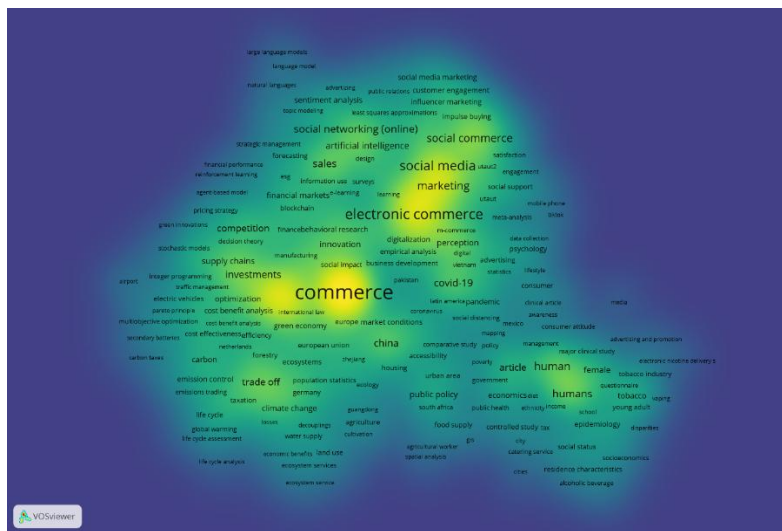


Figure 6. Density Visualization of Social Commerce

The highest density is concentrated around “commerce”, which occupies the central position of the research landscape. This indicates that commerce functions as the broad conceptual foundation connecting different research streams. A second prominent high-density area is located around electronic commerce, marketing, social media, and social commerce. The concentration of these terms demonstrates that contemporary research on social commerce remains strongly associated with the transformation of conventional electronic commerce through social media and digital marketing. The close density relationship among these concepts suggests that the boundaries between e-commerce, social media marketing, and social commerce have become increasingly interconnected.

Another relatively high-density area appears around marketing, social media, and electronic commerce. This concentration reflects the

strong emphasis on marketing-related issues within social commerce research. The presence of social media marketing, influencer marketing, customer engagement, impulse buying, social support, satisfaction, and engagement around this area indicates that researchers increasingly examine social commerce through the lens of consumer interaction and marketing effectiveness. Thus, the density visualization reinforces the finding from the network analysis that consumer engagement and social influence constitute important components of the contemporary social commerce research landscape.

The area surrounding artificial intelligence also demonstrates notable density, although it is less concentrated than the core commerce and marketing areas. Its position between social networking, sales, electronic commerce, and social commerce is particularly significant. This suggests that AI is increasingly connected to established digital commerce concepts rather than functioning as an entirely independent research stream. The presence of large language models, language models, natural languages, sentiment analysis, topic modeling, and machine learning-related concepts around this area indicates the emergence of computational and AI-driven approaches within the broader social commerce literature. This pattern may signal a transition toward more intelligent, personalized, and data-driven digital commerce environments.

The density visualization also reveals a substantial concentration around investment, competition, supply chains, innovation, optimization, and green economy. This area reflects the strategic, operational, and economic dimensions of commerce research. Although these concepts are positioned further from the immediate core of social commerce, their density demonstrates that the broader literature addresses commerce not only from a consumer perspective but also from organizational and economic perspectives. In particular, the presence of innovation, business development, financial markets, pricing strategy, supply chains, and investment suggests that digital commerce is increasingly examined in relation to business competitiveness and organizational transformation.

A further dense area is visible around carbon, climate change, green economy, emissions, ecosystems, and life-cycle analysis. This concentration indicates the presence of a substantial sustainability-oriented research stream within the broader commerce dataset. The relationship between commerce and environmental sustainability suggests that contemporary commerce research increasingly incorporates issues such as green innovation, carbon emissions, environmental policy, and

resource efficiency. However, compared with the central social commerce and digital marketing themes, these sustainability concepts appear to constitute a more peripheral research domain.

The lower-right portion of the visualization contains another concentration around human, humans, public policy, consumer, economics, health, epidemiology, social status, and demographic variables. This area appears to represent research concerned with social, demographic, health, and policy dimensions. The relatively strong presence of COVID-19, pandemic, coronavirus, social distancing, and consumer attitude indicates the influence of the pandemic period on research published between 2020 and 2026. The emergence of these terms suggests that the transformation of digital commerce was examined alongside broader changes in human behavior and social conditions during the pandemic.

Research Trends Based on Overlay Visualization

The overlay visualization generated using VOSviewer provides a temporal perspective on the evolution of social commerce research. Unlike the conventional network visualization, this map emphasizes the average publication year associated with keywords, allowing the development of research topics to be traced from relatively established themes to more recent areas of interest. The color gradient ranges from blue and purple, representing relatively earlier research, to green and yellow, representing more recent research. The visualization therefore provides an important basis for identifying the thematic transition of social commerce research during the observation period.

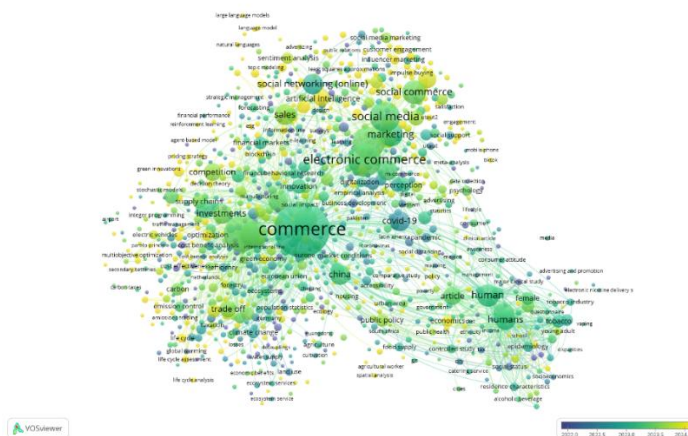


Figure 7. Overlay Visualization of Social Commerce

The map shows that commerce, electronic commerce, social media, social networking, and marketing constitute the central and relatively established conceptual foundations of the field. These keywords occupy highly connected positions in the network and are associated with a mixture of earlier and more recent colors. Their position indicates that they have remained continuously relevant throughout the development of the literature rather than representing short-lived research topics. In particular, electronic commerce and social media function as important bridges connecting traditional digital commerce research with the more specialized literature on social commerce.

A notable pattern is observed around social commerce, social media marketing, influencer marketing, customer engagement, impulse buying, and social support. These keywords are predominantly represented by greener and yellowish tones, indicating relatively more recent research activity. This pattern suggests that the research agenda has gradually moved beyond the basic conceptualization of social commerce toward questions concerning consumer engagement, social influence, digital persuasion, and behavioral responses. The increasing prominence of influencer marketing and customer engagement is particularly relevant because social commerce has become increasingly dependent on content creators, social recommendations, and interactive forms of digital marketing.

The overlay visualization also highlights artificial intelligence as an important emerging technological theme. The keyword appears relatively close to social networking, social commerce, sales, and electronic commerce and is associated with newer colors compared with several traditional commerce concepts. Its position suggests that AI has increasingly entered the social commerce research agenda as digital platforms have incorporated recommendation systems, automated interaction, intelligent content generation, sentiment analysis, and other data-driven technologies. The appearance of related terms such as large language models, language model, natural languages, sentiment analysis, and topic modeling further indicates the emergence of AI and computational methods as an expanding research frontier.

Another important development concerns digitalization, innovation, business development, and empirical analysis, which are positioned between the established commerce concepts and newer research themes. These terms indicate a broader transition in the literature toward understanding social commerce as part of organizational and digital

transformation. Rather than treating social commerce simply as an alternative channel for online transactions, recent research increasingly considers its implications for business development, innovation, strategic management, and the transformation of conventional business models.

The overlay map also shows the continuing relevance of COVID-19, pandemic, coronavirus, and social distancing. These terms occupy a relatively intermediate position in the temporal spectrum, reflecting the strong influence of the pandemic on research concerning digital commerce and consumer behavior. The pandemic accelerated the adoption of digital channels and changed patterns of consumer interaction, thereby providing an important contextual foundation for the expansion of social commerce research. However, compared with newer themes such as AI, influencer marketing, and customer engagement, pandemic-related keywords appear less indicative of the current research frontier.

In contrast, several terms associated with carbon, emissions, climate change, green economy, ecosystems, and life-cycle analysis are distributed across the lower-left portion of the map. These themes represent a sustainability-oriented research stream within the broader commerce literature. Their temporal distribution suggests that sustainability has been a continuing concern rather than an entirely new development. Nevertheless, their relatively peripheral position from the core social commerce concepts indicates that the integration between social commerce and sustainability remains less consolidated than the relationship between social commerce, marketing, social media, and consumer behavior.

The temporal pattern also reveals an important shift from transaction-centered research toward interaction- and technology-centered research. Earlier research is more closely associated with broad concepts such as commerce, electronic commerce, competition, supply chains, investment, and social networking. More recent research increasingly incorporates social commerce-specific concepts such as influencer marketing, customer engagement, impulse buying, digitalization, artificial intelligence, TikTok, and advanced computational approaches. This transition suggests that the field is becoming increasingly concerned with how emerging technologies and social interactions reshape consumer decision-making and commercial processes.

These findings are particularly important for identifying the future research agenda. The emergence of artificial intelligence, influencer

marketing, customer engagement, and platform-based commerce suggests that future studies may increasingly examine the interaction between human actors, digital platforms, algorithms, and commercial activities. At the same time, the relatively weaker connection between emerging technologies and established social commerce concepts indicates opportunities for further theoretical integration, particularly concerning AI-mediated trust, algorithmic persuasion, human–AI interaction, personalization, influencer–AI convergence, and consumer behavior in intelligent social commerce environments.

DISCUSSION

The findings demonstrate that social commerce research during 2020–2026 has evolved into a highly interdisciplinary field connecting e-commerce, social media, marketing, consumer behavior, and digital technologies. The centrality of commerce, electronic commerce, social media, marketing, and social commerce confirms that the field remains rooted in the convergence of social interaction and digital transactions. This pattern is consistent with Herzallah et al. (2025), who identified the expansion of social commerce from conventional e-commerce toward a broader domain involving technology, consumer behavior, marketing, and social interaction.

The strong association among social media, social commerce, social media marketing, influencer marketing, customer engagement, social support, and impulse buying indicates a shift from technology adoption toward consumer engagement and behavioral outcomes. Social commerce increasingly positions consumers as active participants who create, share, evaluate, and disseminate commercial information. Previous research has similarly shown that social support and community interaction can enhance customer engagement and influence outcomes such as electronic word-of-mouth, repurchase, and consumer participation (Molinillo et al., 2020). The growing prominence of influencer marketing further demonstrates the integration of commercial communication with social interaction, making credibility, authenticity, and social presence increasingly relevant.

Impulse buying also emerges as an important theme, suggesting greater scholarly attention to the psychological consequences of socially embedded digital environments. Product recommendations, peer opinions, social proof, and

personalized content can reduce the distance between product exposure and purchasing decisions. Recent evidence indicates that social learning mechanisms can contribute to impulsive buying in social commerce (Xu et al., 2024). Thus, contemporary research increasingly examines not only social commerce adoption but also how social environments shape consumer decision-making.

The temporal analysis further highlights artificial intelligence (AI), large language models, natural language processing, and sentiment analysis as emerging themes. Their increasing visibility indicates a transition toward intelligent and personalized social commerce. AI can support recommendation systems, conversational shopping, customer service, content generation, and sentiment analysis (Ruan & Zhao, 2024; Xu et al., 2024). At the same time, algorithmic personalization raises issues concerning transparency, fairness, privacy, trust, and consumer autonomy. These developments suggest that future research should increasingly consider human–AI interaction and algorithmic influence as integral components of social commerce.

COVID-19, pandemic, and social distancing appear as important themes in the earlier period, reflecting the acceleration of digital commerce during physical and social restrictions. However, their declining prominence relative to AI, influencer marketing, and customer engagement suggests that pandemic-related research has increasingly become a contextual foundation rather than a dominant research frontier. The field has consequently shifted from examining social commerce as a response to disruption toward understanding its long-term technological and behavioral transformation.

The network also reveals connections with competition, innovation, supply chains, pricing, investment, and business development, demonstrating that social commerce extends beyond marketing and consumer behavior. It increasingly represents a broader mechanism of business model innovation and digital transformation. Conversely, sustainability-related terms such as carbon emissions, climate change, green economy, and life-cycle analysis remain relatively peripheral. This suggests that the intersection between social commerce and sustainability remains comparatively underdeveloped and warrants further investigation, particularly given the tension between sustainable consumption and digitally stimulated purchasing.

Geographically, China emerges as the most productive country, followed by the United Kingdom and the United States, while India, Spain, Australia,

Malaysia, and Indonesia also make substantial contributions. Indonesia ranks eighth with 136 publications in the present dataset, indicating growing academic attention to social commerce within the country. This provides opportunities for comparative research examining how culture, institutions, technology adoption, and market characteristics shape social commerce across China, Indonesia, Malaysia, and Western economies.

From a managerial perspective, social commerce should increasingly be viewed as an integrated ecosystem involving social media, influencers, customer engagement, personalization, and AI rather than merely as a promotional channel. At the same time, responsible use of algorithms requires attention to transparency, privacy, fairness, and consumer autonomy. Future studies should therefore investigate AI-influencer integration, algorithmic persuasion, livestream commerce, cross-cultural differences, sustainability, and the effects of AI-mediated personalization on trust, engagement, impulse buying, and consumer well-being..

V. CONCLUSION AND RECOMMENDATION

This study analyzed the development of social commerce research during 2020–2026 using 2,821 Scopus-indexed documents. The findings demonstrate that social commerce has developed into an interdisciplinary field spanning social sciences, business, management, marketing, and economics. The keyword analysis identifies commerce, electronic commerce, social media, marketing, and social commerce as the core themes, while customer engagement, influencer marketing, impulse buying, digitalization, and artificial intelligence represent increasingly prominent research directions. These findings confirm the continuing transformation of social commerce from conventional e-commerce toward more interactive and socially embedded digital commerce. The overlay analysis further indicates that artificial intelligence, large language models, influencer marketing, and digitalization constitute emerging research frontiers. This suggests that the future of social commerce will increasingly involve AI-enabled personalization, algorithmic recommendations, influencer-mediated commerce, and interactive consumer experiences. Overall, the field can be characterized by a transition from e-commerce foundations to social and consumer engagement, and increasingly toward intelligent and interactive commerce.

Future research should focus on the intersection of AI and social commerce, particularly AI-generated content, recommendation systems, virtual influencers, personalization, trust, and consumer decision-making. Greater attention should also be given to influencer marketing and livestream commerce, as these themes increasingly shape consumer engagement and purchasing behavior. In addition, researchers should explore the relatively underdeveloped relationship between social commerce and sustainability, as well as conduct more cross-cultural studies involving emerging markets such as Indonesia and other Southeast Asian countries. For future bibliometric studies, extending the observation period beyond 2026 and incorporating co-citation, bibliographic coupling, thematic evolution, and strategic mapping would provide deeper insight into the changing intellectual structure of social commerce.

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