The Applications of Operations Research in Social Commerce

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ABSTRACT: This paper adopts a quantitative, data-driven approach, consistent with the Operations Research (OR) emphasis on evidence-based decision-making, to examine how scholarly research on social commerce analytics has developed. Social commerce, the integration of social media interaction with commercial transactions, increasingly depends on analytical techniques to interpret consumer behaviour and to support managerial decisions. A systematic literature review and bibliometric analysis were conducted on records retrieved from Scopus using the search string "Social Commerce" AND "Analytics". Sequential screening by time span, document type, language and source type reduced an initial 1,455 records to a final dataset of 416, of which 415 documents published between 2016 and 2026 were retained for the main analysis. Using R Studio and Biblioshiny, the study applied performance analysis and science mapping, including annual scientific production, source and country productivity, three-field plots and thematic evolution. The dataset records an annual growth rate of 14.53%, 1,337 contributing authors, 33.98% international co-authorship and an average of 46.46 citations per document. Annual output rose from 17 publications in 2016 to 66 in 2026 ($R^2 = 0.7954$), with India, China and the USA emerging as leading contributors and IEEE Access as the most productive source. Thematic evolution shows a shift from foundational social media and e-commerce themes before 2020, towards data analytics and machine learning during the COVID-19 period, and towards predictive analytics, artificial intelligence and strategic decision-making after 2022. The findings provide a structured knowledge map for scholars and practical direction for organisations adopting analytics-led social commerce strategies. The findings offer an organized knowledge map for scholars and guidance for organizations using analytics-driven social commerce strategies.

KEYWORDS: Social commerce; Analytics; Bibliometric analysis; Operations Research; Thematic evolution; Decision-making

1. INTRODUCTION

Social commerce has emerged as one of the most significant opportunities in digital retail, converting social interaction into measurable commercial value. Mordor Intelligence (2026) valued the global social commerce market at USD 1.63 trillion in 2025 and projected it to reach USD 7.55 trillion by 2031, a compound annual growth rate of 29.12%. This expansion generates large volumes of behavioural, textual and transactional data, which presents both an opportunity and a problem: such data must be converted systematically into reliable decisions. Operations Research employs analytical and mathematical techniques that support decision-making in an environment of limited resources and uncertainties. The techniques employed in OR include mathematical modeling, optimization, forecasting and decision making based on data analysis. Operations Research techniques also play a role in the research process since, before conducting any kind of analytics, the body of knowledge should be mapped to determine what techniques have been used in research, what evidence is available and the gaps that remain unfilled. Bibliometric analysis offers a systematic, quantitative and reproducible procedure for this purpose (Donthu et al., 2021; Zupic & Čater, 2015). Therefore, in this paper, scientific literature is treated as data. The study employs a systematic literature review combined with a bibliometric approach. Records were retrieved from Scopus using the search string "Social Commerce" AND "Analytics", and a PRISMA-style screening process was applied sequentially. The time-span filter (2016–2026) reduced

1,455 records to 1,324; the document-type filter (Article and Review) reduced these to 420; the language filter (English) to 418; and the source-type filter (Journal and Trade Journal) to a final dataset of 416 records. As 2027 is an incomplete year, its inclusion produced an artificial annual decline of 22.71%, and the main analysis was therefore restricted to the 415 documents published between 2016 and 2026. The review followed the four-step bibliometric procedure proposed by Donthu et al. (2021): defining the aims and scope, choosing the techniques, collecting the data, and running the analysis and reporting the findings. Four tools supported the process: Scopus for data retrieval, Mendeley Desktop for reference management, R Studio as the computing environment, and Biblioshiny, the web interface of the Bibliometrix package (Aria & Cuccurullo, 2017), for performance analysis and science mapping. From the analysis, it is apparent that the research domain is increasingly becoming diverse and expanding. 415 documents published from 257 sources by 1,337 authors with an annual growth of 14.53%, an average citation per document of 46.46 and 33.98% international collaboration in authorship. The number of publications increased from 17 in 2016 to 66 in 2026 through a linear trend ($R^2 = 0.7954$) despite variations on a yearly basis. IEEE Access ranks as the most prolific source with 14 publications while India, China and USA rank as the most productive countries. Theme evolution in the periods between 2016–2019, 2020–2021 and 2022–2026 reveal movement from social media and e-commerce fundamentals to data analytics and machine learning in the context of COVID-19 and then to predictive analytics, AI and strategic decision making after COVID-19 period. The present paper has five research objectives. Firstly, it examines the volume, growth and annual trend of scholarly publications on social commerce analytics between 2016 and 2026. Secondly, it identifies the most relevant sources, leading countries and key authors, and assesses patterns of international collaboration. Thirdly, it maps the conceptual structure of the field through the relationships among authors, countries and keywords. Fourthly, it traces the thematic evolution of the field across the pre-COVID, COVID and post-COVID periods. Finally, it derives the academic, managerial and social implications of the findings.

2. LITERATURE REVIEW

The intersection between e-commerce and social media gives birth to social commerce -commercial processes supported by social interactions among consumers (Han et al., 2018). Initially, e-commerce was mostly a transaction process, while social networks, user-generated content, and online communities made a consumer speak his mind and attract attention. According to Goyal et al. (2021), the paradigm of consumption changed from individual and isolated purchases to collaboration and interactivity of shopping. The field can be viewed through multiple lenses including psychology, sociology, computer science, and marketing, which makes the definition of the field still unclear (Han et al., 2018). As Lin et al. (2017) prove, the first research in the field emphasized the organization, advertising, and word-of-mouth instead of the concept definition.

Recurring reviews reveal three main topics: consumer behavior, social interaction, and marketing/engagement. Trust, risk perception, purchase intention, and sharing intention are the core constructs used. Lin et al. (2017) state that online reviews, trust, and electronic word-of-mouth became the focus of the researchers while two out of four themes revealed by Goyal et al. (2021) are related to purchase and sharing intention. Zhao et al. (2023) analyzed 56 articles through the lens of Stimulus–Organism–Response framework. Thus, the field moved from description of the platform to analysis of the mechanisms behind consumers' behavior. The role of social interaction through reviews, communities, and reputation is to characterize the platform itself and decrease buyers' uncertainty. The marketing perspective covers the approach to social commerce from the viewpoint of the firm.

The technological environment has also changed. Herzallah et al. (2025) compared 2008–2018 with 2019–2022 and found a shift from perceived sociability and mobile commerce towards UTAUT, small and medium-sized enterprises, perceived risk and live streaming. They also pointed to artificial intelligence, augmented reality and blockchain as possible future directions. These are emerging directions rather than established research areas, and it is still open how far they have entered the published literature.

The existing systematic and bibliometric reviews differ in purpose, corpus and method. The summary of the reviews conducted in this field is given in Table 1.

Table 1. Summary of Review articles

Authors	Scope of Review	Type of Study
Baethge, Klier & Klier (2016)	Structured overview of the knowledge areas addressed by the information systems, e-commerce and marketing communities, with a research agenda (116 papers, 2007–2014)	Structured literature review
Lin, Li & Wang (2017)	Defines the boundary of the field and its themes and trends (418 social commerce papers identified from 1,369 publications)	Latent semantic analysis
Han, Xu & Chen (2018)	Taxonomy of the literature and its multidisciplinary base, with knowledge gaps identified (407 papers, 2006–2017)	Systematic review and data synthesis
Li, Huang, Li & Qi (2018)	Key journals and countries (USA, China and England dominant) and three research areas (1,900 Web of Science publications, 2003–2018)	Bibliometric analysis
Goyal et al. (2021)	Four themes (purchase intention, sharing intention, social media marketing and engagement, user preferences and concerns) and a conceptual model (about 660 Web of Science papers)	Bibliometric analysis with HistCite and content analysis of 53 top-cited papers
Zhao et al. (2023)	Drivers, consequences and consumer response processes (56 papers, 2017–2021)	Systematic review using the SOR framework
Herzallah et al. (2025)	Thematic shift from sociability and mobile commerce towards UTAUT, SMEs, risk and live streaming, with AI, AR and blockchain as future directions (Web of Science, 2008–2018 and 2019–2022)	Science mapping with SciMAT and VOSviewer

The reviews have moved from descriptive and definitional work towards periodised, evolution-oriented analysis. They use different databases, time windows and techniques, so their results are not directly interchangeable. Where review periods are reported, they end between 2017 and 2022, and the earliest start year is 2003. Whether technology-related themes such as live commerce, AI and blockchain have moved from the margins to the centre of the field is not clearly established in these studies. This does not mean social commerce has been neglected. Because the field evolves quickly, its thematic structure needs to be reassessed periodically, and an updated analysis covering a recent period is therefore justified.

3. RESEARCH METHODOLOGY

Systematic Literature Review (SLR) is a well-established methodology that can be employed to identify, filter, categorize, and analyze studies related to a particular area of research. SLR is a tool which allows for a systematic approach to gathering the body of research and highlighting important achievements, themes, and trends. The current study employs a systematic literature review and bibliometric approach to analyze the state of research on Social

Commerce Analytics. The subject matter represents an intersection between social commerce and the analysis of digital consumers, their social interaction, engagement, buying behaviour, and business decision making.

Article Selection, Inclusion and Exclusion Criteria

Database search was performed in Scopus using the search string "Social Commerce" AND "Analytics" where the keywords identified publications related to the topics under study by means of title, abstract, and keywords. The search and selection process progressively reduced the initial number of publications depending on the inclusion and exclusion criteria established by the researcher. Overall process was built in accordance with the PRISMA-style screening method in order to present how initial search results were reduced to the final bibliometric database. Initial search in Scopus resulted in 1,455 publications. The following four filters were then applied successively:

1. Time span (2016-2026): reduced the initial number of publications from 1,455 to 1,324 by eliminating those publications which do not belong to the chosen ten-year time frame.

2. Document type (Article and Review): reduced the number of publications from 1,324 to 420. The final number of publications at this step consisted of 394 Articles and 26 Reviews.

3. Language (English): reduced the number of publications from 420 to 418 by excluding two publications which failed to satisfy the English language requirement.

4. Source type (Journal and Trade Journal): reduced the number of publications from 418 to 416 which made up the final.

The final dataset used for the bibliometric analysis therefore consisted of 416 papers, drawn from an initial pool of 1,455 Scopus records. The filtering sequence was applied consistently so that each stage established a more focused dataset for the subsequent analysis. The PRISMA flow diagram presented separately in Figure 1 provides a visual representation of this screening process.

Comments on the filtering process

Filtering exemplifies the necessity of setting definite boundaries before making the bibliometric analysis. To begin with, the first search yielded 1,455 records in total. Filtering by "2016-2026-time restriction" brought down the number of records to 1,324 while making a consistent time period of ten years for analyzing contemporary activity in Social Commerce Analytics. Filtering by the document type reduced the dataset from 1,324 to 420 records, which included 394 Articles and 26 Reviews. It makes it possible to analyze the consistent academic literature while ignoring other document types present in the broad set of Scopus results.

Filtering by language made a relatively small influence on the number of records left in the dataset. Specifically, 420 records became 418 records when filtered by the English language. This means that only two records were left out of the process. Limiting the final dataset to the English language makes it consistent for further bibliometric analysis.

The third source-type filter further decreased the dataset size from 418 records to 416 records. The selected source types were Journal and Trade Journal. Thus, the resulting 416 papers can be considered the final database, which was obtained after applying all the mentioned Scopus filtering criteria. This sequence of numbers of records (from 1,455 to 416) represents a transparent way for the further analysis to be conducted.

It is necessary to draw the line between the sequential Scopus filters and the stage of eliminating duplicates. Considering the filtering data used in this research, 416 records can be considered the final number, considering the time span, document type, language, and source type filters. There was no specified step of numerical removal of duplicates, so 416 records are reported as the final filtered database.

Filtering numbers in Scopus should be considered regarding the sequence of screening. It means that the sequence used in the current study is 1,455 initial records, 1,324 after the time span filter, 420 after document type, 418 after language, and 416 after source type

This final selection also establishes a consistent evidence base for comparing publications across the selected period. By applying the same criteria to every record, the study reduces variation in the composition of the dataset and provides a clearer foundation for identifying publication trends, frequently occurring keywords, thematic relationships, and changes in research attention within Social Commerce Analytics throughout the ten-year period covered by the review.

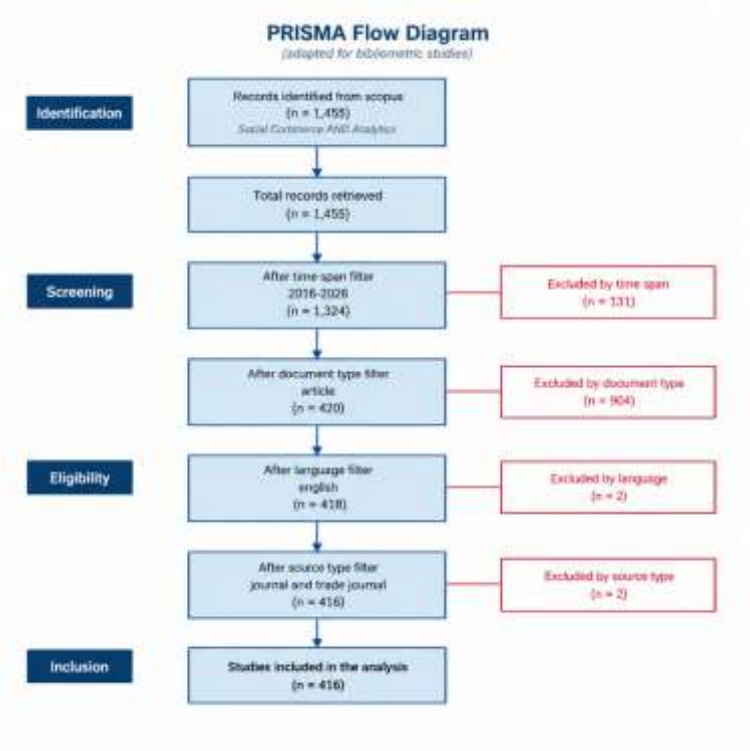


Fig 1: PRISMA Flow Diagram of the screening process (author's work)

Bibliometric Analysis

It is necessary to conduct a bibliometric analysis since this will allow for the creation of a quantitative and systematic picture of the research field. Bibliometrics are especially helpful when there is a large volume of publications within a review, and the aim is to find some hidden patterns. In the current case, the final dataset consisting of 416 papers serves as a good basis for studying the evolution and structure of the field of Social Commerce Analytics using the quantitative bibliometric approach

Bibliometric analysis makes it possible to investigate publication trends, keyword trends, theme evolution, and major research areas related to Social Commerce Analytics. Such indicators allow creating an evidence-based picture of the development of the field during the chosen period and finding connections between concepts that appear repeatedly in the literature.

The other advantage of the bibliometric analysis is that it enables the study of changes in research priorities throughout the years. Year-to-year publication trends can indicate how the research activities have been developing between 2016 and 2026. Keyword trends are used to see which concepts have gained popularity; keyword co-occurrence helps to see which concepts are often studied together.

A systematic review should be sufficiently transparent for another researcher to understand and reproduce its major stages. The present methodology records the search terms, database, publication period, document-type criteria,

language criterion, source-type criterion, and final number of papers. This provides a clear methodological foundation for the subsequent analysis

Donthu et al. (2021) propose a structured process for conducting bibliometric reviews. This is how the present review has followed the process:

Step 1- Define the aims and scope of the bibliometric study

The first phase involved setting the research area as Social Commerce Analytics and the scope of the literature review. This work will only include articles based on the search terms "Social Commerce" AND "Analytics", dated between 2016 and 2026. Ultimately, the aim of the research is to conduct a quantitative analysis of the research area and highlight the key patterns of publications, keywords, and themes within it. The final set of 416 articles serves as the basis for this work.

Step 2- Choose the techniques

Based on the study objectives, we selected appropriate bibliometric and science-mapping techniques. These include publication trend analysis, keyword analysis, keyword co-occurrence analysis, and thematic mapping. Publication analysis provides an overview of research activity over time; keyword analysis identifies frequently occurring concepts; co-occurrence analysis examines relationships between concepts; and thematic mapping helps organize the literature into broader research themes. Together, these techniques provide a quantitative view of the structure and development of Social Commerce Analytics.

Step 3- Collect the data

The data collection stage involved retrieving the literature from Scopus using the search string "Social Commerce" AND "Analytics". The initial search generated 1,455 records. The predefined inclusion and exclusion criteria were then applied sequentially: the 2016–2026-time span produced 1,324 records; Article and Review document types produced 420 records; English-language filtering produced 418 records; and Journal and Trade Journal source types produced the final 416 records. These 416 records constitute the database used for the bibliometric analysis.

Step 4- Run the analysis and report the findings

The final stage involves applying the selected bibliometric techniques to the 416-paper dataset and reporting the findings through quantitative results and visualisations. Performance analysis and science mapping complement each other: publication activity indicates development of the field, while science mapping shows relationships among keywords and themes. The results can therefore describe the research trajectory of Social Commerce Analytics and identify areas for future research.

Lastly, the following software and resources were used for the bibliometric analysis:

1. R Studio- this software enables access to "Biblioshiny," which can be used for bibliometric analysis and visualisation of the research dataset.

2. Biblioshiny- a free and open-source, web-based graphical interface for the Bibliometrix R package, allowing bibliometric and science-mapping analysis to be performed through a graphical interface rather than requiring extensive coding

3. Mendeley Desktop- used as the reference manager for this review. All ".ris" files exported from Scopus were imported into Mendeley for ease of management and citing.

4. Scopus- the database used to identify and retrieve the literature forming the dataset for this bibliometric review. The final database consisted of 416 papers after the specified screening criteria were applied.

4. DATA ANALYSIS

Main Overview

The dataset consists of 415 documents published between 2016 and 2026 across 257 sources with an annual growth rate of 14.53%, which indicates an overall expansion of research interest in social commerce during the selected period. Initially, the dataset included documents between 2016 and 2027, with 416 documents which resulted in a declining growth rate of -22.71% annually. Since 2027 is an incomplete year, its inclusion resulted in an artificial decline in the calculated growth rate. Therefore, the 2016-2026 dataset is used for the main analysis.

The dataset has an average document age of 3.86 years and an average of 46.46 citations per document, indicating that the publications have received considerable scholarly attention. A total of 1337 authors contributed to the dataset with an average of 3.56 co-authors per document. This indicates that the research in social commerce is dominated by single-author studies rather than a large group of collaborative authors. The 33.98% international co-authorship rate indicates the presence of cross-country collaboration.

The dataset contains 1644 author keywords and 2791 keyword plus terms, highlighting the wide range of concepts and research areas associated with social commerce. It consists of 390 document-type articles, and 25 publications are review papers showing that the research is majorly based on original research.

Annual Scientific Production

The graph in **Figure 2** shows the annual publication trend in social commerce research from 2016 to 2026. Overall, the trend is upward, although there are fluctuations across individual years. Publications increased from 17 in 2016 to 28 in 2018, followed by a decline to 22 in 2019. Research output then increased sharply to 32 articles in 2020 and 50 in 2021.

A significant decline is observed in 2022, when publications fell to 32, but the trend recovered in 2023 and remained relatively stable in 2024. The strongest growth occurs in 2025 and 2026 with publications rising to 61 and 66 respectively, the highest levels recorded during the study period.

The upward trendline, represented by y= 4.209x + 11.982, indicates an average increase of approximately 4.29 publications per year. The R^2 value of 0.7954 shows that around 79.54% of the variation in publication output is explained by the overall linear growth trend. Thus, despite temporary declines, the graph demonstrates a clear and sustained increase in scholarly interest in social commerce.

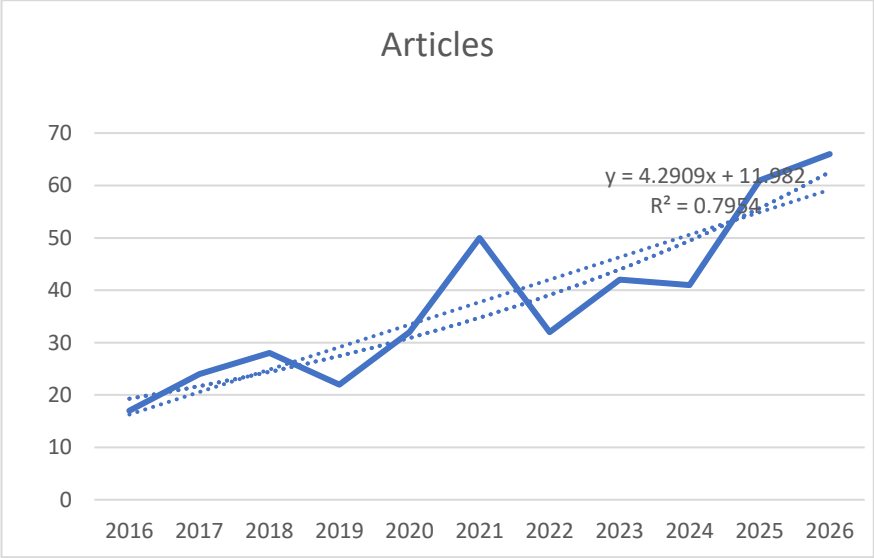


Figure 2: *Annual Scientific Production*

Three-Fields Plot

The Three-Field Plot in **Figure 3**, illustrates the relationship between authors, their countries and the major keywords in social commerce research. It shows how researchers and countries are connected to the key themes of the field.

Among the countries, India, China and USA show strong contributions along with countries such as the UK, Korea, Australia, Malaysia, Canada and Indonesia indicating the international nature of social commerce research. The author field highlights researchers such as Li X, Zhang Z, Cheng X, Wang Y and Kauffman RJ who are connected with various research themes.

The major keywords include commerce, social media, social networking, data analytics, big data and electronic commerce, economic and social effects with more focus on sentiment analysis, machine learning, predictive analysis and decision making. Overall, the plot shows that social commerce research is increasingly connecting social media and commercial activity with data-driven and analytical approach.(Tian & Liu, 2017)

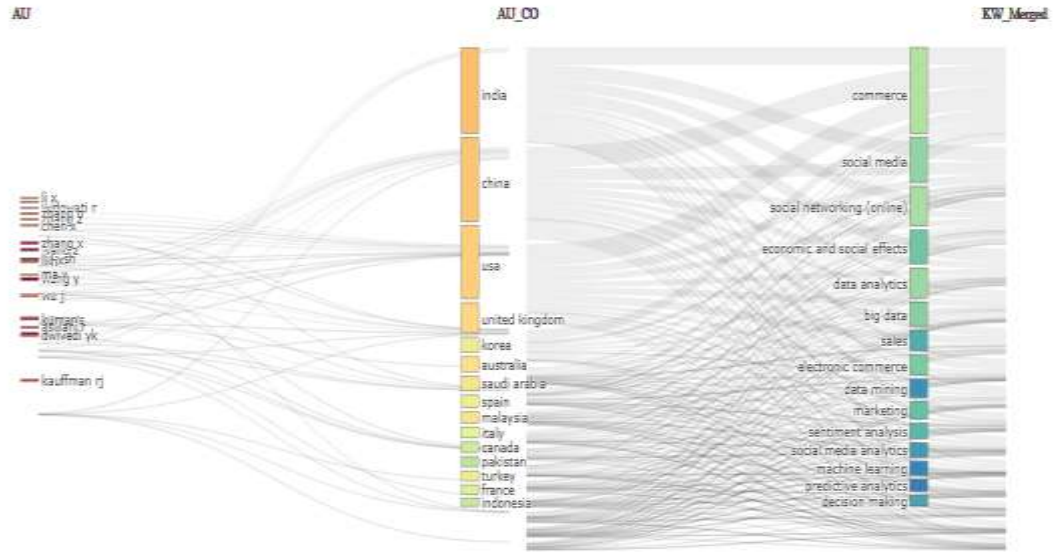


Figure 3: *The three-fields plot*

Most Relevant Sources

IEEE ACCESS	14
ELECTRONIC COMMERCE RESEARCH AND APPLICATIONS	9
EXPERT SYSTEMS WITH APPLICATIONS	9
INFORMATION (SWITZERLAND)	8
JOURNAL OF BIG DATA	7
JOURNAL OF RETAILING AND CONSUMER SERVICES	6
JOURNAL OF THEORETICAL AND APPLIED ELECTRONIC COMMERCE RESEARCH	6
IEEE TRANSACTIONS ON VISUALIZATION AND COMPUTER GRAPHICS	5
INDUSTRIAL MANAGEMENT AND DATA SYSTEMS	5
INFORMATION AND MANAGEMENT	5

INTERNATIONAL JOURNAL OF INFORMATION MANAGEMENT	5
SOCIAL NETWORK ANALYSIS AND MINING	5
TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE	5

Figure 4: *Most Relevant Sources for Social Commerce*

The source analysis in **Figure 4** indicates that **IEEE Access** is the most productive journal in the dataset, with 14 publications, followed by **Electronic Commerce Research and Applications** and **Expert System with Applications**, each with 9 publications. **Information** and **Journal of Big Data** follow with 8 and 7 publications respectively.

The distribution indicates that social commerce is not just limited to traditional marketing or e-commerce journals but is also a leading source for electronic commerce, information systems, artificial intelligence, big data, social networks and retailing.

The inclusion of publications like Electronic Commerce Research and Applications and Journal of Retailing and Consumer Services points to the commercial and consumer-focus of social commerce; on the other hand, the publications Expert Systems with Applications and Journal of Big Data further highlight the growing importance of computational and analytics.

This is in line with the previous social commerce reviews, where we find relationship of social commerce with areas like information systems, consumer behaviour, technology, marketing and online interaction. (Sharma et al., 2023; Singh & Singh, 2018)

Average Citations per Year

The graph in **Figure 5** shows the average number of citations received by articles published in each year from 2016 to 2026. The citations have been increasing significantly from 4.4 in 2016 to 25 in 2021. The sharp peak in 2021 indicates that the articles published during this year received higher citations than others.

After 2021, the average citations can be seen decreasing to around 7 in 2022 and remain constant at 6 in 2023-2024. A further decline can be seen in 2025 and 2026 to approximately 2.1 and 0.6, respectively.

The decline in citations in recent years is considerably due to less time to accumulate citations compared to older publications. Overall, the graph indicates 2021 as the peak-citations impact year while declining after that largely reflects the shorter time available for newer publications to receive citations.

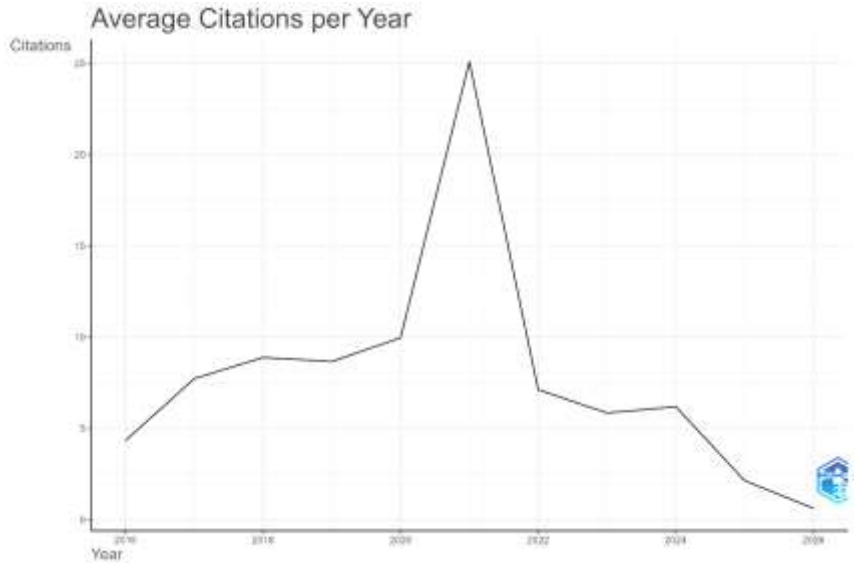


Figure 5: *Average Citations per Year*

Sources' Production Over Time

The source-production-over-time graph in **Figure 6** indicates a shift in publication sources for social commerce research. Electronic Commerce Research and Applications shows activity earlier in the period and a relatively stable rate of publications for the domain, suggesting a more niche focus in the field of electronic and social commerce research.

Meanwhile, the publication amount for IEEE Access rises sharply in the latter years, indicating that social commerce research has been increasingly drawing on the lens of technology and computation. The accelerating development of **Expert Systems with Applications** and **Journal of Big Data** also hints at more concern about artificial intelligence, analytics, machine learning and data-driven decision-making. (Alrumiah & Hadwan, 2021; Arasu et al., 2020)

Thus, in the evolution of publication sources, social commerce should be abandoned in favour of e-commerce or marketing literature and the inclusion of technology and data analytics.

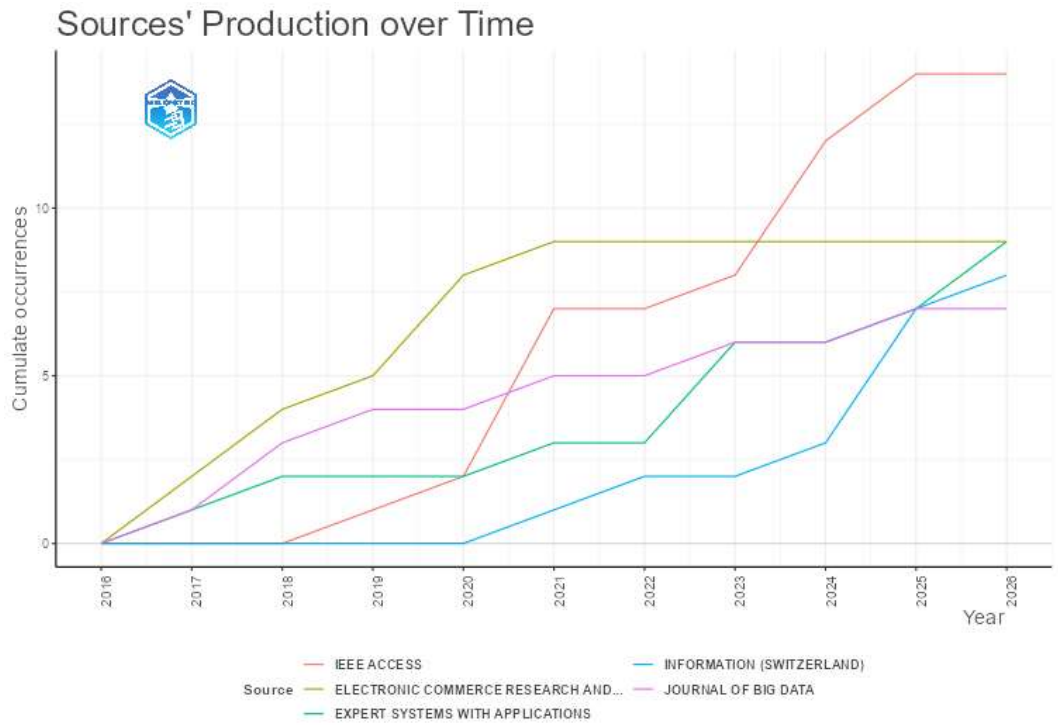


Figure 6: *Sources' Production over Time*

Countries Production over Time

The chart in **Figure 7** represents Australia's production over time. It shows a steady increase in social commerce research with publications rising from 2 in 2016 to 33 in 2026. The trend equation, y = 2.963x- 1.7818. indicates an average increase in approximately 2.96 publications per year. The R^2 value of 0.9779 shows that 97.79% of the variation in publication output is explained by the linear trend, indicating a strong and consistent upward trend.

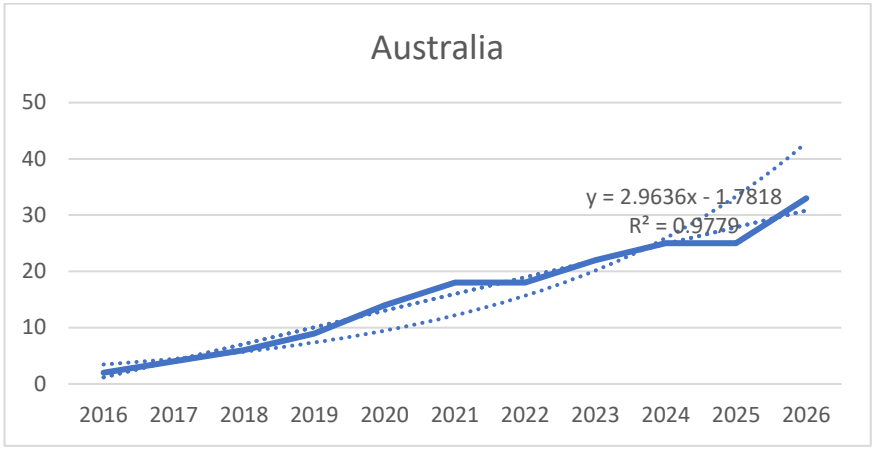


Figure 7: Australia's Production over time

In **Figure 8,** China demonstrates substantial growth, increasing from 9 publications in 2016 to 165 in 2026. Its trend equation, y = 15.3636x − 25.0909, indicates an average annual increase of approximately 15.36 publications. The R^2 of 0.9541 means that around 95.41% of the variation is explained by the linear trend, reflecting strong and sustained growth in research production.

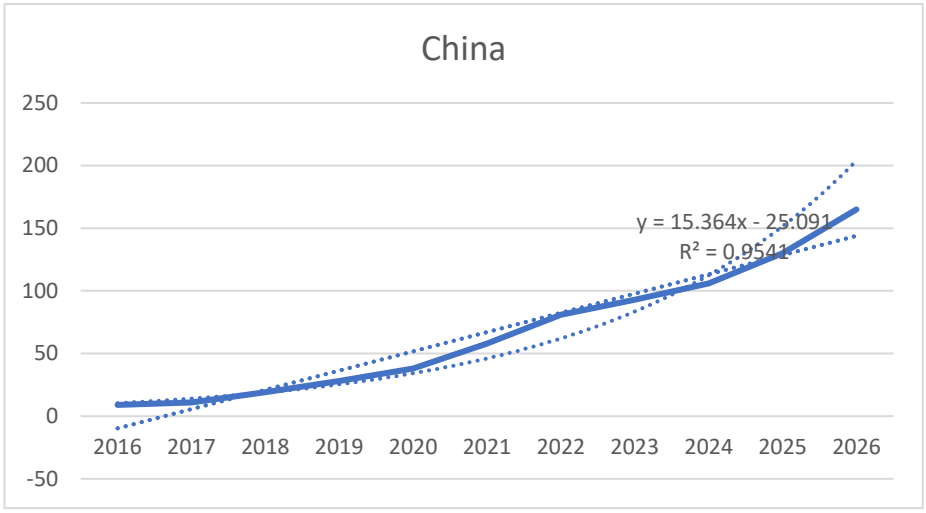


Figure 8: *China's Production over time*

In **Figure 9,** India records the steepest growth among the five countries, with publications increasing from 3 in 2016 to 197 in 2026. The equation y = 19.7455x − 32.8364 indicates an average increase of approximately 19.75 publications per year, the highest growth rate among the countries. Its R^2 of 0.9771 indicates that approximately 97.71% of the variation is explained by the linear trend, demonstrating a very strong upward trend.

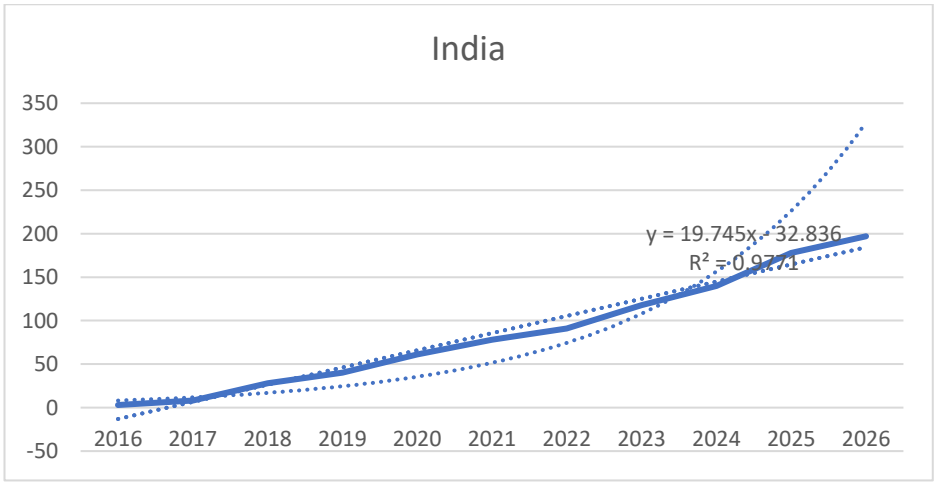


Figure 9: *India's Production over time*

In **Figure 10,** The UK shows gradual but consistent growth, increasing from 3 publications in 2016 to 53 in 2026. The trend equation y = 5.5636x − 4.2909 indicates an average annual increase of approximately 5.56 publications. The R^2 value of 0.9759 shows that 97.59% of the variation is explained by the trend, indicating a highly consistent increase in research output.

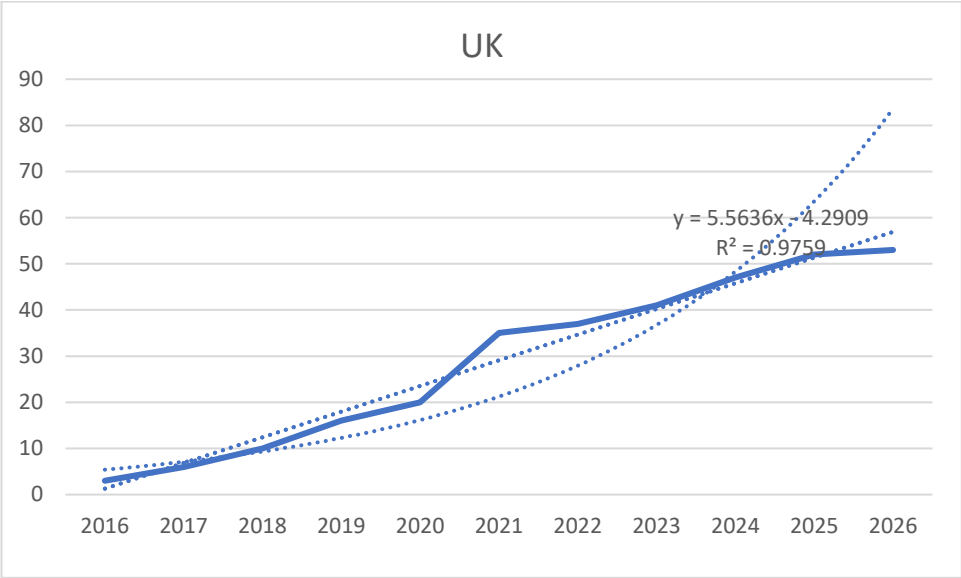


Figure 10: *UK's production over time*

In **Figure 11,** The USA maintains a strong research presence, with publications increasing from 12 in 2016 to 137 in 2026. Its equation, y = 12.2818x − 1.6000, indicates an average increase of approximately 12.28 publications per year. The R^2 value of 0.9895 is the highest among the five countries, showing that approximately 98.95% of the variation is explained by the linear trend and indicating particularly consistent growth.

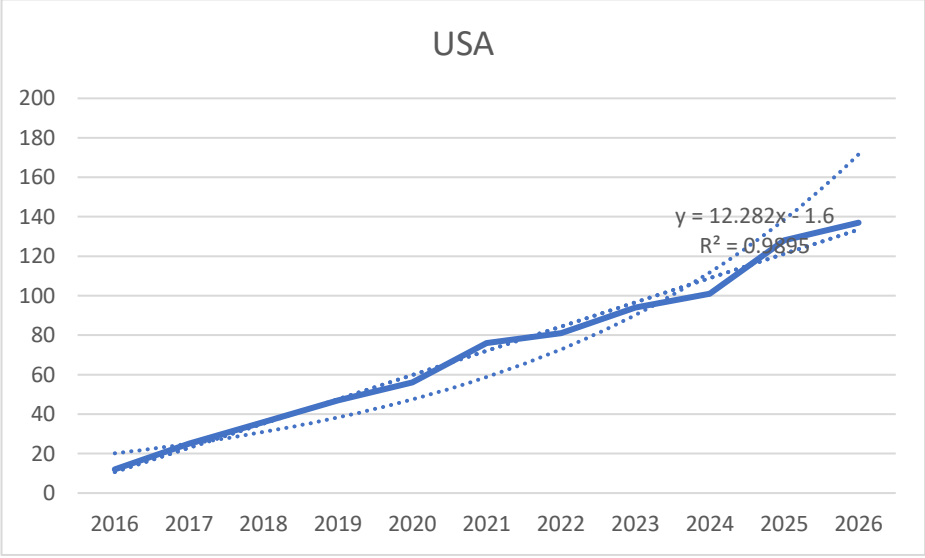


Figure 11: *USA's production over time*

Overall, India exhibits the steepest growth in research production while the USA shows the strongest linear fit, indicating that its increase in publications has been particularly consistent over the period.

Thematic Evolution

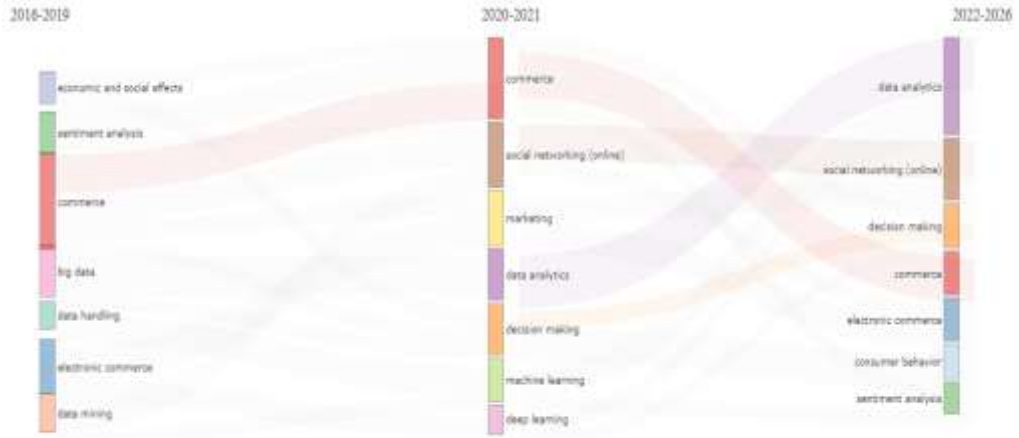


Figure 12: *Thematic Evolution Map*

The thematic evolution analysis provides evidence of gradual transformation in the major focus on social commerce research across three periods: 2016-2019, 2020-2021, and 2022-2026. The publication trend can be viewed through the three time slices to understand how the research focus developed alongside the growing importance of social and digital commerce. The evolution map in **Figure 12** shows how there has been a substantial increase in the importance of online and digitally mediated commerce after the COVID-19 pandemic.

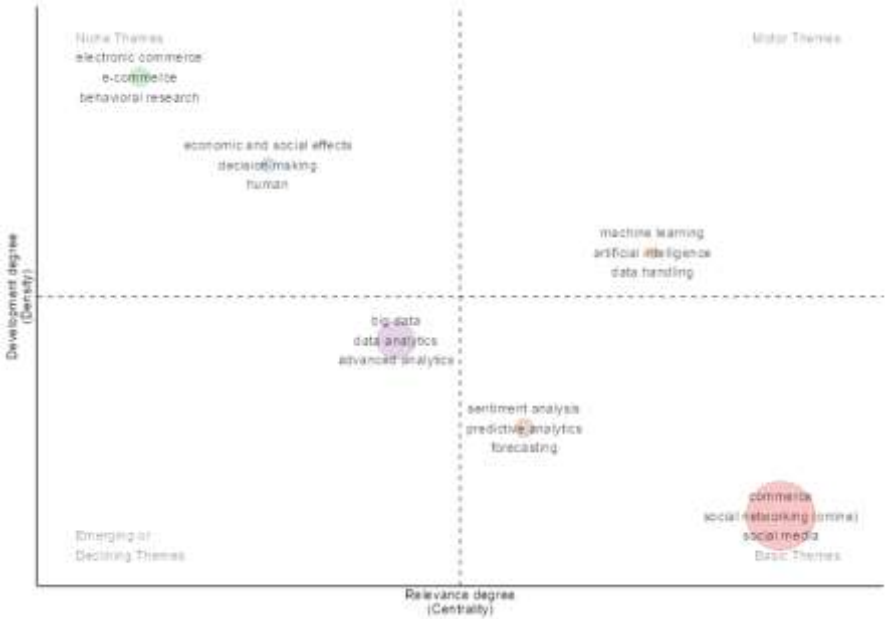


Figure 13: *Time slice 1 representing the pre-COVID period of Social Commerce*

In the first time slice in **Figure 13**, 2016-2019, the major themes include big data, commerce, electronic commerce, data mining, data handling, economic and social effects, and sentiment handling (Rahman et al., 2017; Tian & Liu, 2017). Commerce forms the central theme and is closely related to social media, networking and marketing. This indicates that the research during the pre-COVID period was primarily focused on establishing the relationship between social platforms and commercial activities. The presence of data mining, big data and sentiment analysis indicates the initial use of data-driven techniques to understand online techniques and interactions as well as consumer behaviour. The pre-COVID stage represents the foundation of social commerce research, with emphasis on social media, e-commerce and basic technological foundations of the field.

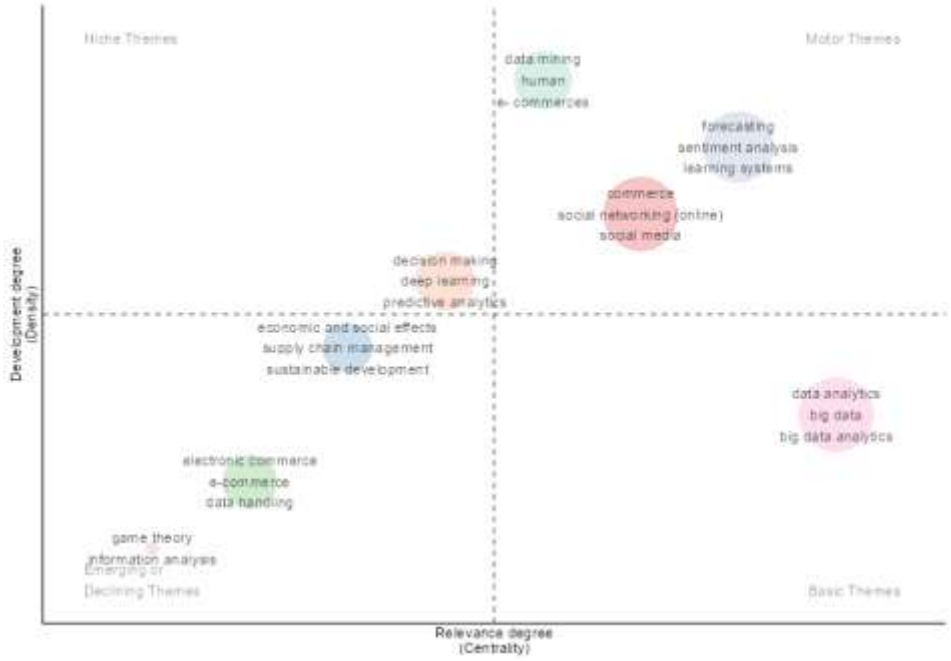


Figure 14: *Time slice 2 representing the COVID period of Social Commerce*

The second time slice in **Figure 14** represents the COVID period, 2020-2021, and shows a significant shift towards more data-driven and technology-oriented research. While social networking and commerce remain important, themes such as data analytics, machine learning, deep learning and marketing become more prominent. The increasing importance of data analytics suggests that researchers were moving beyond just understanding social commerce to increasingly analysing how digital data and analytical technologies could be used to understand consumer behaviour and support commercial decisions (Alrumiah & Hadwan, 2021; Arasu et al., 2020). The increased dependence on digital platforms during COVID gave more attention and importance to the research in the fields of social commerce.(Li et al., 2020)

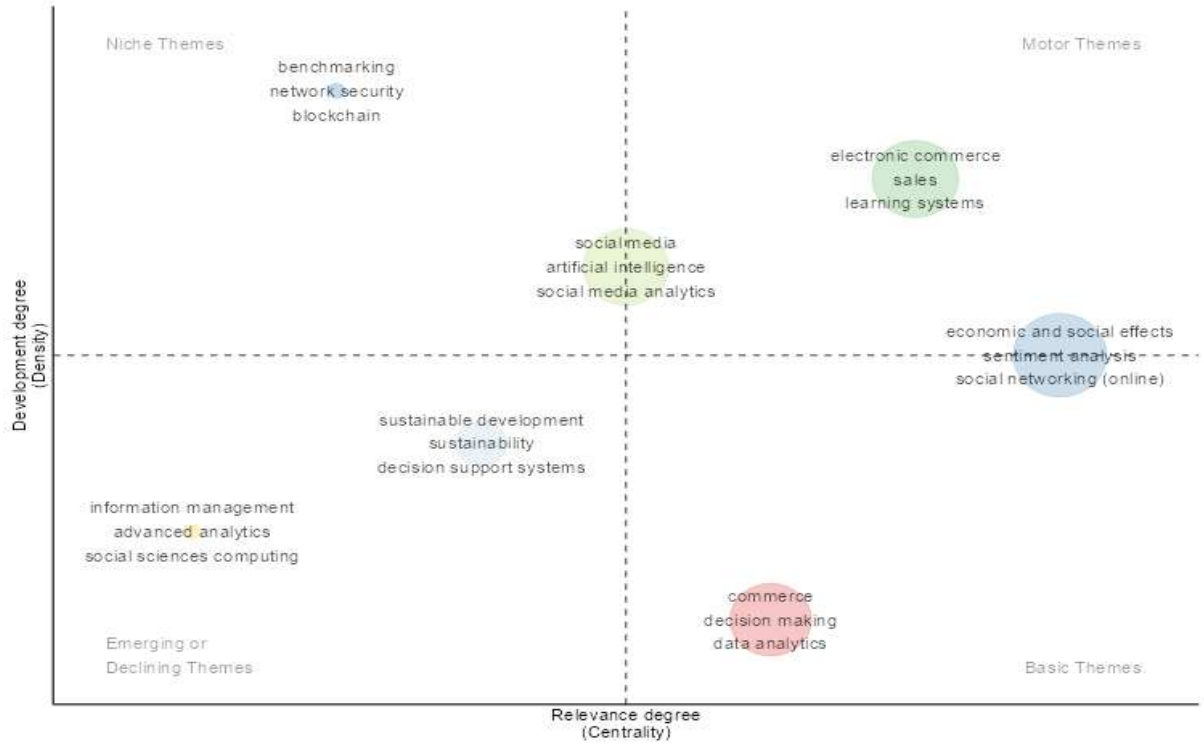


Figure 15: *Time slice 3 representing the post-COVID period of Social Commerce*

The third time slice in **Figure 15** represents the post-COVID period, 2022-2026. It demonstrates the further expansion and diversification in the field of social commerce. Major themes include commerce, machine learning, social networking, data analytics and marketing. Even though commerce remains the central theme, it is now connected with forecasting, financial markets, predictive analytics and economic and social effects which shows a strong focus on prediction and practical applications (Sharma & Shafiq, 2022; Zhang & Song, 2022) . Social networking is also increasingly associated with social media analytics, artificial intelligence, customer engagement, and mobile commerce (Liao et al., 2022). The continued focus on deep learning and machine learning suggests that advanced technology and AI-based approaches have become an important part of social commerce research. Broader themes related to sustainability, supply chains and strategic decision-making indicate that the field is expanding beyond social commerce to wider organisational and societal applications. (Papagiannidis et al., 2019; Zhang & Song, 2022)

This comparison across the 3 stages illustrates a clear pre-COVID to post-COVID transformation in the research agenda. Pre-COVID research was focused on the traditional foundations of social media, commerce and e-commerce. Research during the COVID-19 period has incorporated data analytics, decision-making, and machine learning (Arasu et al., 2020) that reflect the increased relevance of digital commerce, while the post-COVID period depicts much the same but at a higher level, such as new forms of AI, predictive analytics, deep learning and strategic decision-making (Sharma & Shafiq, 2022; Zhang et al., 2022). In broad terms, the representational theme evolution involves a shift from social media and commerce data analytics and computational approaches to AI and prediction and strategic decision-making.

5. FUTURE RESEARCH AGENDA

This analysis set out to trace how research on social commerce has developed between 2016 and 2026. The 415 documents examined (390 articles and 25 reviews) appear to show a field that is expanding steadily, with an annual growth rate of 14.53% and a linear trend ($y = 4.209x + 11.982$, $R^2 = 0.7954$) that would suggest sustained, if uneven, growth in output. At the same time, the thematic evolution maps indicate a gradual movement from social media and basic e-commerce toward machine learning, predictive analytics and strategic decision-making. The agenda below is organised into six areas, moving from the methodological to the substantive, and each should be read as a tentative direction rather than a definitive gap.

1. Clarifying the scope and vocabulary of the field

The dataset contains 1,644 author keywords and 2,791 keyword plus terms, which may point to a wide and somewhat fragmented vocabulary. Terms such as commerce, electronic commerce and social commerce appear to overlap in the thematic maps, so it is not entirely clear whether they describe one domain or several. Future studies could publish the exact search query, merge near-identical terms (for example, social media and social networking) and remove generic words before repeating the keyword and thematic analyses. Doing so might make it easier to judge whether social commerce is emerging as a distinct domain or remains a sub-theme of e-commerce research (Singh & Singh, 2018; Tian & Liu, 2017).

2. Testing analytical techniques with real-world data

Machine learning, deep learning, sentiment analysis and big data analytics become more prominent from the COVID period onward, and journals such as IEEE Access, Expert Systems with Applications and Journal of Big Data show rising output in the later years. Many of the studies behind these themes seem to concentrate on proposing or demonstrating models (Arasu et al., 2020; Sharma & Shafiq, 2022; Zhang et al., 2022), although this impression would need to be confirmed through closer content analysis. Researchers could examine whether such techniques improve outcomes such as purchase intention, user-intention assessment or business decision-making when applied to live platform data, across different platforms and over longer periods. Tian and Liu (2017) raise the question of whether big data necessarily leads to greater knowledge, and this question may deserve renewed attention as analytical approaches become more complex.

3. Bringing in consumer behaviour and engagement

Although the three-fields plot links keywords such as sentiment analysis and decision making with leading authors and countries, consumer-focused themes appear less central than computational ones. Earlier studies have examined engagement metrics and user behaviour on social platforms (Liao et al., 2022; Rahman et al., 2017), yet it is possible that trust, perceived risk and long-term loyalty have received comparatively limited attention. Future work could investigate how consumers respond to live-streaming, social media marketing and mobile commerce, and whether findings from one context are likely to hold in others.

4. Connecting social commerce with sustainability and supply chains

In the post-COVID period, themes related to sustainability, supply chains and strategic decision-making begin to emerge, which may indicate that the field is widening beyond marketing and platform use. However, these themes appear relatively peripheral at present (Papagiannidis et al., 2019; Zhang & Song, 2022). Future research could explore how social media shapes logistics, returns and responsible consumption, and whether social commerce contributes to, or detracts from, sustainable outcomes. Such studies would probably benefit from combining social media data with operational or environmental measures.

5. Cross-country comparison and international collaboration

India, China and the USA show the strongest growth in output, with India rising from 3 publications in 2016 to 197 in 2026 and the steepest trend line ($y = 19.7455x - 32.8364$). The UK and Australia grow more gradually, and the international co-authorship rate of 33.98% suggests that cross-country collaboration exists but may still be limited. Comparative studies across these countries could help to establish whether consumer behaviour, platform adoption and regulation differ in ways that matter for theory, as Li et al. (2020) have proposed for the wider digital economy in Asia. Partnerships with regions that appear less often in the dataset may also be worthwhile.

6. Widening the method and the time window

The average citations per year peak at around 25 for articles published in 2021 and fall sharply for 2025 and 2026. This decline is likely to reflect the shorter time available for recent papers to be cited rather than a drop in quality or relevance, and it should therefore be interpreted with caution. Later studies could repeat the analysis once 2026 is a complete year, extend the number of time slices in the thematic evolution analysis (Cobo et al., 2011), and draw on additional databases, document types and languages. Complementing bibliometric mapping with systematic content analysis could also help to verify the interpretations offered here (Aria & Cuccurullo, 2017; Zupic & Čater, 2015)

6. CONCLUSION

This study mapped the development of social commerce analytics research through a systematic and bibliometric review of 415 documents published between 2016 and 2026. In line with the research objectives, annual output grew from 17 publications in 2016 to 66 in 2026, at an annual growth rate of 14.53% ($R^2 = 0.7954$). IEEE Access, India, China and the USA emerged as the leading source and contributing countries, supported by a 33.98% rate of international co-authorship, while the conceptual structure linked social media and commerce with big data, machine learning and predictive analysis. Thematic evolution moved from social media and e-commerce foundations before 2020, to data analytics and machine learning during the COVID-19 period, and to predictive analytics, artificial intelligence and strategic decision-making after 2022.

Academically, the study provides a reproducible map of the field and shows a shift from descriptive to predictive, decision-oriented analytics, which offers a base for applying OR techniques to social commerce problems. Managerially, e-commerce platforms, retailers, marketers and small businesses selling through social channels can use these findings to prioritise sentiment analysis, machine learning and predictive analytics. Socially, the growing contribution of emerging economies and the widening focus on customer engagement and sustainability point to benefits beyond individual firms, provided that data is used responsibly. The study was limited by time and data availability, as it relied on a single database (Scopus), English-language publications and one search string, and it does not assess the quality of individual studies. These gaps can be addressed in future research by extending the dataset to additional databases and applying OR techniques, such as forecasting and optimisation, to specific social commerce decisions.

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