

Revisiting the social commerce paradigm: the social commerce (SC) framework and a research agenda

Revisiting the
social
commerce
paradigm

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Received 27 August 2022

Revised 21 February 2023

25 June 2023

Accepted 28 June 2023

Abstract

Purpose – Social commerce (SC) is a new genre in electronic commerce (e-commerce) that has great potential. This study proposes a new research framework to address deficiencies in existing social commerce research frameworks (e.g. the information model).

Design/methodology/approach – In the era of Industrial Revolution 4.0 technologies and new social commerce (s-commerce) models, the authors believe that there is an immediate need for a new research framework. The authors analysed the progress of the s-commerce paradigm between 2003 and 2023 by

Funding: This work was supported by the UCSI University under the *UCSI World's Top 2% Scientist Research Grant* under the project number *T2S-2023/003*.

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applying longitudinal science mapping. The authors then developed a research framework based on the themes in the strategic diagrams and evolution map.

Findings – From 2003 to 2010, studies on s-commerce mainly focused on social networking sites, virtual communities, social shopping and analytic approaches. From 2011 to 2015, it shifted to s-commerce, consumer behaviour, Web 2.0, artificial intelligence, social technologies, online shopping, user studies, data gathering methods, applications, service-based social commerce constructs, e-commerce and cognitive factors. Social commerce remained the primary research paradigm from 2017 to 2023.

Practical implications – The SC framework may be analogous to popular research frameworks such as technology-organisation-environment (T-O-E) and stimulus-organism-response (S-O-R). Based on this SC framework, researchers may gain a better understanding by determining the factors of the social, commercial, technological and behavioural dimensions.

Originality/value – The authors redefined s-commerce and developed an SC framework. Practical guidelines for the SC framework and an exemplary research model are presented. Overall, this study offers a new research agenda for the extant understanding of s-commerce, with the SC framework as the next frontier of the theoretical advancements and applications of s-commerce.

Keywords Social commerce framework, research agenda, science mapping, evolution map, scoping review, bibliometric analysis, performance analysis

Paper type Research paper

1. Introduction

The rise of social media has led to the development of social commerce (SC), or s-commerce (Hajli, 2020; Leung *et al.*, 2021; Ooi *et al.*, 2023). In addition, social networking sites (SNSs), such as Meta, WhatsApp, Twitter, WeChat, Instagram and LinkedIn, have contributed to the popularity of s-commerce (Jami Pour *et al.*, 2022; Leung *et al.*, 2022; Lu *et al.*, 2019). Yahoo first coined the term “social commerce” in 2005 to explain how social media is utilised to facilitate business transactions (Cui *et al.*, 2018). T-Commerce on Twitter is an example of s-commerce (Cui *et al.*, 2018). Unlike conventional electronic commerce (e-commerce) in which buyers interact with online vendors individually, s-commerce involves virtual communities and supports user-generated content (UGC) and user interactions (Sheikh *et al.*, 2019). For instance, consumers rely heavily on buying products with low tipping points (Lee *et al.*, 2015). In s-commerce, buyers can build social relationships, communicate, review others’ opinions, rate products, recommend products and services, and share experiences (Bazi *et al.*, 2020; Hajli, 2013). Currently, s-commerce is being studied both practically and theoretically (Busalim and Hussin, 2016; Lin and Wang, 2022); however, little effort has been put towards determining its current state and progress (Esmaeili and Hashemi G, 2019). S-commerce is a more sociable, innovative and collaborative way of conducting online business (Gonçalves Curty and Zhang, 2013; Wang *et al.*, 2020). This has evolved into a new phenomenon of universal attention among vendors, marketers, and scholars (Baethge *et al.*, 2016; Ooi *et al.*, 2018). S-commerce research has grown exponentially over the last decade and has become an important emerging research area (Lin *et al.*, 2017). Despite the rapid growth and substantial effects of s-commerce, studies on this phenomenon remain at an early stage and demand further exploration (Han *et al.*, 2018; Huang and Benyoucef, 2013).

S-commerce is anticipated to achieve US\$84.2 billion in 2024, contributing 7.8% of US e-commerce retail sales (Tugba Sabanoglu, 2020). Retail s-commerce sales in China are expected to reach US\$474.81 billion by 2023 (Influencers MarketingHub, 2021). The S-commerce market revenue is forecast at US\$3369.8 billion in 2028 (Grand View Research, 2021). The size of the s-commerce market is expected to grow by US\$2051.49 billion between 2020 and 2024 (Technavio, 2021). The enormous potential of s-commerce has attracted considerable interest from practitioners and researchers (Zhou *et al.*, 2013). However, “due to the complexity and innovativeness of s-commerce, it is necessary to have a framework to organise relevant knowledge in a cohesive way that may be used to guide researchers and practitioners” (Liang and Turban, 2011, p. 7).

There are several shortcomings in the existing research frameworks on s-commerce (e.g. Huang and Benyoucef, 2013; Liang and Turban, 2011; Wang and Zhang, 2012; Wu *et al.*,

2015; Zhang and Benjamin, 2007; Zhou *et al.*, 2013). First, the frameworks were introduced between 2007 and 2015. They did not include state-of-the-art technologies such as artificial intelligence, Industry 4.0, blockchain, machine learning, big data analytics (BDA), Internet of things (IoT) and wearable devices. Since 2015, several new s-commerce models have emerged, including meta-verse commerce, conversational commerce, mobile social commerce (ms-commerce), live-streaming commerce, Twitter commerce (t-commerce) and shared commerce (Hew *et al.*, 2019; Koohang *et al.*, 2023; Tan *et al.*, 2023; Theadora *et al.*, 2022). Second, existing frameworks cannot comprehensively explain the nexus between the social and behavioural components of social commerce. For example, the I-model (Zhang and Benjamin, 2007) only entails the components of people, information, technology and organisation/society, while the framework by Liang and Turban (2011, p. 11) does not explain the role of technology in social commerce. Similarly, Wang and Zhang's (2012) model, which consists of the components of management, people, information and technology, cannot explain the role of social and behavioural components in social commerce. Similarly, the framework by Zhou *et al.* (2013) cannot explain the role of social factors and behaviour as it only comprises the components of people, information, technology and business. Similarly, the frameworks of Huang and Benyoucef (2013) and Wu *et al.* (2015) are unable to explain the nexus of the components of social factors, behaviour and technology, as these frameworks only provide a set of design principles as guidelines for s-commerce system developers. Third, existing frameworks are developed based on qualitative literature reviews. Thus, these frameworks lack quantitative scientific support. Fourth, few articles were gathered in the reviews, and the existing frameworks were developed based on old definitions of social commerce that are already outdated and thus may not be relevant and valid in the current timeframe. Hence, there are issues of definition accuracy as well as issues of empirical validity, comprehensiveness and coverage of the frameworks that need to be addressed because the existing frameworks are not accurate or comprehensive enough, as they do not cover some components of social commerce. Moreover, they are unsuitable and insufficient for application now because of the rise of new technologies and s-commerce models; thus, there is an urgent need for a refined s-commerce framework. Finally, existing studies do not provide a clear understanding of the evolution of social commerce through the years in terms of research themes, areas and trends and have failed to provide a clear research agenda for social commerce. Hence, this study aims to develop a refined s-commerce research framework called the SC framework. Unlike existing frameworks that were developed through systematic reviews that are qualitative in nature, the current study combined a systematic review with science mapping that is both qualitative and quantitative to provide comprehensive and extensive coverage of the components of social commerce to scientifically develop a new social commerce framework. It also examines the evolution of the s-commerce paradigm by analysing research and publication trends and author performance. To address the shortcomings of the existing frameworks, this study aims to answer the following research questions:

- RQ1.* What is the state-of-the-art definition of social commerce?
- RQ2.* What are the new dimensions for the social commerce framework?
- RQ3.* What is the evolution of social commerce?
- RQ4.* What is the research trend of social commerce?
- RQ5.* What is the research agenda for social commerce?

This study addresses the shortcomings of existing frameworks in several ways. First, it fills this gap by introducing a new definition of s-commerce and proposing a refined s-commerce research framework, known as the SC framework, for future s-commerce studies. Second, practical guidelines for the application of the SC framework are provided for future theoretical developments. With these practical guidelines, researchers can develop various

research models that further extend the extant literature. An exemplary research model is presented to illustrate the application of the SC framework to the context of metaverse commerce. We believe that the SC framework has great potential to emulate the success of other frameworks such as T-O-E and S-O-R. Third, methodologically, this pioneering study applied empirical science-mapping data to develop and refine an s-commerce research framework. Fourth, it identifies the four key components that constitute s-commerce, thus redefining the contextualisation of s-commerce artefacts. Fifth, it provides an evolution map of s-commerce since its emergence in 2003, which may serve as a future research direction or research agenda. Finally, it provides a comprehensive analysis of authors' performance, institutions, countries and publication trends in s-commerce.

The paper begins with an introduction, followed by a literature review of the existing s-commerce frameworks. We then explain the application of longitudinal science mapping and the research methodology. The analysis and results are elaborated, followed by the introduction of the SC framework. Finally, we discuss the research findings in terms of theory and practice before presenting the study's limitations and directions for future research.

2. Literature review

2.1 What is s-commerce?

Until now, there have been inconsistencies in the definition of s-commerce (Zhang and Benyoucef, 2016; Zhang *et al.*, 2020). Liang and Turban (2011) assert that s-commerce has three key attributes: social media technologies, commercial activities and community interactions. Huang and Benyoucef (2013, p. 247) define s-commerce as "an Internet-based commercial application, leveraging social media and Web 2.0 technologies which support social interaction and UGC to assist consumers in their decision-making and acquisition of products and services within online marketplaces and communities". Zhou *et al.* (2013, p. 61) define this concept as "the use of Internet-based media that allow people to participate in the marketing, selling, comparing, curating, buying, and sharing of products and services in both online and off-line marketplaces, and communities".

On the other hand, Busalim and Hussin (2016, p. 1077) define s-commerce as "exchange-related activities that take place between and are influenced by social network users in computer mediated social environments, where the activities correspond to the need recognition, pre-purchase, purchase, and post-purchase stages of a focal exchange". Wang and Zhang (2012, p. 106) refers to s-commerce as "a form of commerce that is mediated by social media and is converging both online and offline environments". However, Lin *et al.* (2017, p. 191) define s-commerce as "any commercial activities facilitated by or conducted through the broad social media and Web 2.0 tools in consumers" online shopping process or business' interactions with their customers'. Han *et al.* (2018, p. 46) assert that s-commerce includes "social media (e.g. SNS), social activities (e.g. WOM, social interactions), e-commerce and Web 2.0". In contrast, Esmaeili and Hashemi (2019) refer to s-commerce as "an Internet-based commercial application that makes use of Web 2.0 technologies and social media, and it supports user-generated content and social interactions".

Abdelsalam *et al.* (2020, p. 89043) define s-commerce as "a new business model of e-commerce, which makes use of Web 2.0 technologies and social media to support social-related exchange activities". Zhao *et al.* (2023, p. 2) defined s-commerce as "the marriage of e-commerce and e-word-of-mouth (e-WOM), which brings about the understanding of user-generated content and social interaction among the online community". However, Hu *et al.* (2022, p. 120) define s-commerce as "a new form of electronic commerce (e-commerce) that combines e-commerce with social media techniques". Leung *et al.* (2022, p. 1132) refer to s-commerce as the "leveraging of online social capital to support commercial transactions and activities on SNSs". Mou and Benyoucef (2021, p. 2) define s-commerce as "the exchange-related activities that occur in an individual's social network in computer-mediated settings,

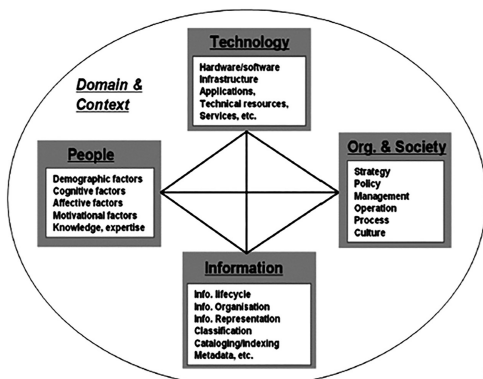
following a process that includes need recognition, pre-purchase, purchase, and post-purchase stages”. Owing to the inconsistencies in definitions and the emergence of new architectures and technologies (e.g. BDA, IoT, RFID) involved in s-commerce, there is a need for scholars to update the definition of s-commerce (Han *et al.*, 2018).

Based on the SC framework developed through a scoping review and science mapping of 765 articles published between 2003 and 2023, we define the s-commerce artefact as consisting of four basic dimensions: “Commerce”, “Behaviour”, “Social” and “Technology”. Hence, we define s-commerce as “any commercial activities involving consumer behaviours that happen through social media platforms and facilitated by any state-of-the-art technologies”. We elaborate the content of each dimension of the SC framework in detail in the relevant section.

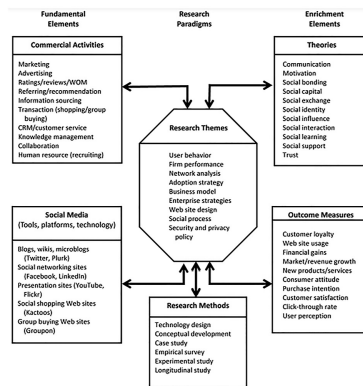
2.2 Existing s-commerce research frameworks

This research framework is a useful guide for recent social commerce studies (Zhang and Benyoucef, 2016). The framework must be grounded in existing research foundations and key attributes of s-commerce (Liang and Turban, 2011). The first social commerce research framework was introduced in 2007 (Zhang and Benjamin, 2007). The Information Model, or I-Model (Figure 1a), entails four basic dimensions: people, information, technology and organisation/society. The integration and interaction of these basic components may generate exciting and interesting research streams with many potential applications (Zhang and Benjamin, 2007). However, the I-model is not suitable in the current time frame as over the course of 16 years, there have been many advancements in terms of technology and architecture, especially with the introduction of social media and state-of-the-art technologies. In addition, none of the four components represents commercial activities in s-commerce. Therefore, the I-model should be revised to suit the current context. In 2011, Liang and Turban (2011) proposed an s-commerce research framework (Figure 1b) with four example papers in a special issue. The framework comprises six components: social media, theories, commercial activities, research themes, research methods and outcome measures. However, Liang and Turban (2011, p. 11) agree that “the examples described in this introduction are not all-inclusive. Interested readers may extend the framework to fit their study”.

Wang and Zhang (2012) revised the I-model and proposed the dimensions of people, management, information and technology. However, due to the various strategies, policies, processes, opportunities and business models in s-commerce, the term “management” was used instead of “organisation/society” to avoid potential confusion. Nevertheless, in the current context,



The I-model (a)



The social commerce research framework (b)

Source(s): Figure by authors

Figure 1. S-commerce research models

none of these dimensions represents commercial activities in s-commerce. With state-of-the-art technologies (e.g. the Internet, BDA, blockchain) and new business models (e.g. social group buying, sharing shopping), this model cannot provide an accurate prediction; thus, there is a need to revise it.

In 2013, [Zhou et al. \(2013\)](#) introduced an integrated view of the s-commerce research framework ([Figure 2](#)), consisting of the dimensions of people, information, technology and business, which integrate strategic fit, based on a review of 317 papers published between 2003 and 2012. However, the framework does not include any social factors that explain social interactions or UGC in s-commerce. Moreover, the framework is already 10 years old, and there have been many advancements in technologies and architectures within this timeframe. Hence, its parsimony and relevance are more minimal in the current setting.

In 2013, [Huang and Benyoucef \(2013\)](#) proposed a Social Commerce Design Model ([Figure 3a](#)) with four layers: individual, conversation, community and commerce. In 2015, [Wu](#)

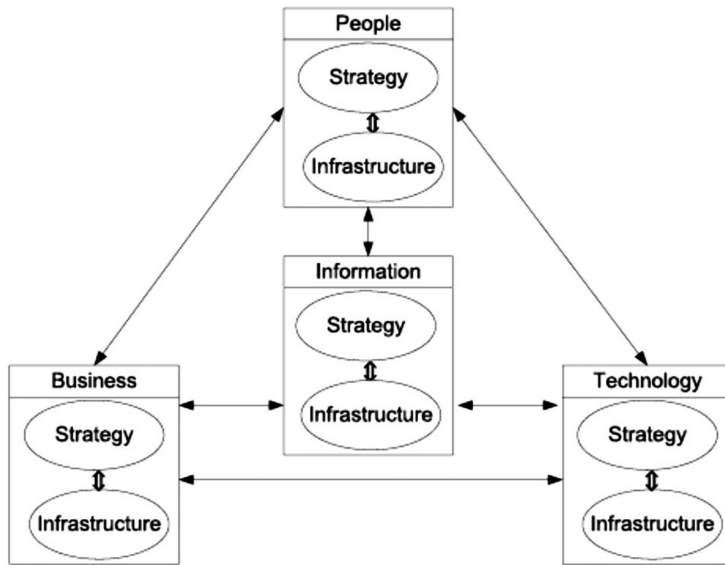


Figure 2.
An integrated view of the s-commerce framework

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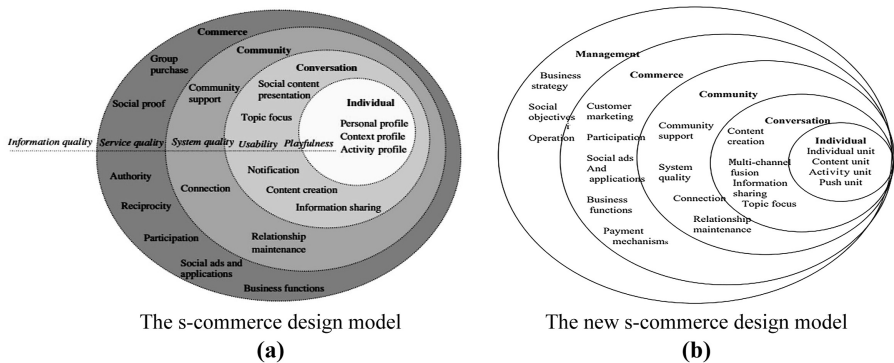


Figure 3.
S-commerce design models

Source(s): Figure by authors

et al. (2015) introduced a new s-commerce design model by extending the existing model with another management layer (Figure 3b). However, these models provide only a set of design principles as guidelines for s-commerce website developers and platform designers. Therefore, existing s-commerce frameworks and models have various limitations that warrant an updated framework for future studies. A summary of existing studies in the s-commerce framework is presented in Table 1. This study conducted a scoping review to refine the s-commerce research framework (Cram *et al.*, 2016; Leidner, 2018).

3. Methodology

We conducted a scoping review to gather the articles required for our study based on five stages (Arksey and O'Malley, 2005; Levac *et al.*, 2010).

3.1 Stage 1: identification of the research questions

This study uses the 7 W model (What, When, Where, Who, Why, Which and How) to provide a comprehensive understanding of the progress of s-commerce and the s-commerce framework to answer the following questions (1) What is s-commerce? (2) When did s-commerce arise? (3) Why is there a need to propose an updated s-commerce research framework? (4) How has research on s-commerce progressed over time? (5) Who researches s-commerce? (6) Which research outlets are most receptive to s-commerce studies? (7) Where are the research centres and institutions that examine s-commerce? (8) Which research themes have been published on s-commerce? (9) What are the dimensions of the s-commerce framework? (10) What is the updated definition of s-commerce?

3.2 Stage 2: identification of the relevant studies

Scopus database was chosen for its broad coverage (25,100 titles, 5,000 international publishers, 23,452 peer-review journals, 294 trade articles, 852 book series, 9.8 million conference papers, and 77.8 million records since 1970), quality standards, ease of downloading data and excellent analytical tools; moreover, "it delivers the most comprehensive overview of the world's research output in the fields of science, technology, medicine, social science, and arts and humanities" (Elsevier, 2020, p. 4). Mendeley reference management software was used to manage the references. We extracted articles using the following search keywords: "social commerce", "social shopping", "s-commerce", "Facebook commerce", "f-commerce" and "mobile social commerce". We included articles published after 2002, when s-commerce studies began to appear (Cui *et al.*, 2018). The bibliometric analysis involved 1,543 articles.

3.3 Stage 3: selection of studies

Two reviewers applied the inclusion and exclusion criteria outlined in this step. When there were ambiguities in the abstracts of relevant studies, the full articles were reviewed. The reviewers set a deadline on an agreed-upon date after which no more studies were included. Articles not written in English were excluded (Kitsiou *et al.*, 2013; Paré *et al.*, 2007, 2010; Ringeval *et al.*, 2020; Templier and Paré, 2015, 2018). The reviewers filtered the remaining articles and removed all duplicates (Wagner *et al.*, 2021). The final number of articles included in this study after the filtering process for the science mapping analysis was 765, as shown in Figure 4.

3.4 Stage 4: charting the data

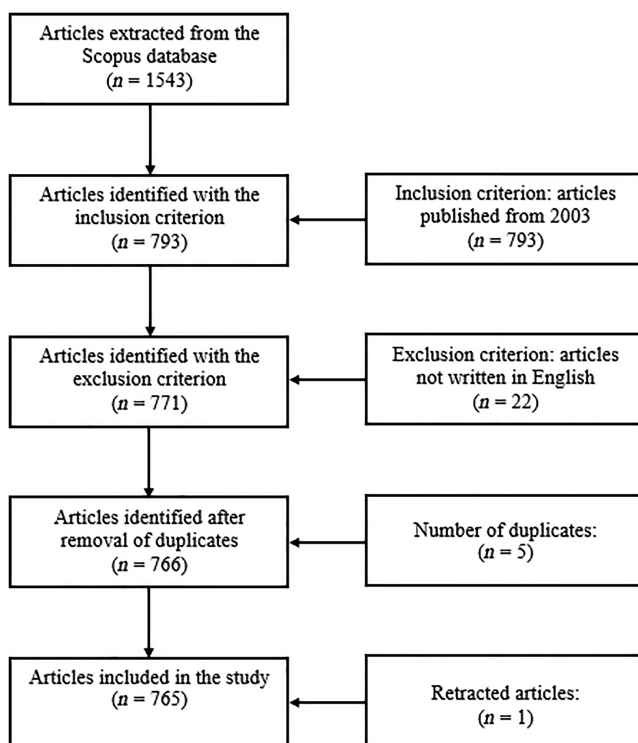
To chart the data, we applied longitudinal science mapping (Hu *et al.*, 2022; Zheng *et al.*, 2023). Existing studies have not analysed the roots of s-commerce that can provide information on the dynamic evolution of the field and enable us to understand the origin of s-commerce, its

Table 1. Summary of existing s-commerce frameworks in comparison to the SC framework

Year	Study	Title of paper	Journal	Period of articles	No of articles	Research method	Model/Framework	Elements/components/layers	Evolution map	Performance analysis	Research agenda
2007	Zhang and Benjamin (2007)	Understanding Information Related Fields: A Conceptual Framework	<i>Journal of The American Society for Information Science and Technology</i>	N/S	N/S	N/S	Information Model (I-Model)	People, Information, Technology, and Organisation/Society	No	No	No
2011	Liang and Turban (2011)	Introduction to the Special Issue Social Commerce: A Research Framework for Social Commerce	<i>International Journal of Electronic Commerce</i>	2011–2012	4	Literature Review	Social Commerce Research Framework	Research theme, Social media, Commercial activities, Underlying theories, Outcomes, and Research methods	No	No	No
2012	Wang and Zhang (2012)	The Evolution of Social Commerce: The People, Management, Technology, and Information Dimensions	<i>Communications of the Association for Information Systems</i>	2005–2011	N/S	Literature Review	The People, Management, Technology, and Information Dimensions	People, Information, Technology, and Management	No	No	No
2013	Zhou <i>et al.</i> (2013)	Social Commerce Research: An Integrated View	<i>Electronic Commerce Research and Applications</i>	2003–2012	317	Literature Review	An Integrated View of Social Commerce Research	People, Information, Technology, and Business	No	No	No
2013	Huang and Benyoucef (2013)	From e-Commerce to Social Commerce: A Close Look at Design Features	<i>Electronic Commerce Research and Applications</i>	N/S	N/S	N/S	Social Commerce Design Model	Individual, Community, Conversation, and Commerce	No	No	No
2015	Wu <i>et al.</i> (2015)	The Research of Design-Based on Social Commerce	<i>International Journal of Social Science Studies</i>	N/S	N/S	N/S	New Social Commerce Design Model	Individual, Community, Conversation, Commerce, and Management	No	No	No
2023	This study	Revisiting the Social Commerce Paradigm: The SC Framework and a Research Agenda	<i>Internet Research</i>	2003–2023	765	Scoping Review and Science Mapping	SC Framework	Management, Social, Commerce, Technology, and Behaviour	Yes	Yes	Yes

Note(s): N/S = Not specified

Source(s): Table by authors



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Figure 4.
The selection protocol

evolution over time, disappearing research topics and the current research paradigm. To address these issues, we applied longitudinal science mapping analysis using the SciMAT software (Cobo *et al.*, 2012). A longitudinal framework allows the progress of the research area to be analysed and traced over several successive sub-periods (Garcia-Buendia *et al.*, 2021). SciMAT was selected because it provides the greatest benefits of current science-mapping tools and offers a state-of-the-art methodology for bibliographic networks and bibliometric indicators (Fouroudi *et al.*, 2020; Moral-Muñoz *et al.*, 2020). This study uses the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) filtering process. The steps involved in science mapping are illustrated in Figure 5.

3.5 Stage 5: collating, summarising and presenting the findings

We first analysed the publication trends in s-commerce studies using the analytical tools in the Scopus database. Overall, there was an exponential publication trend from 2003 to 2022, with the highest number of publications occurring in 2022 (Figure 6). Most articles were in the subject area of computer science, followed by business, management and accounting, and the majority of publications were journal articles or conference papers. Appendix 1 presents the full analysis.

In terms of the publication outlets that are most receptive to s-commerce studies (Appendix 2), the “ACM International Conference Proceeding Series” is at the top of the list, followed by “Lecture Notes in Computer Science”, “International Journal of Information Management”, “Electronic Commerce Research and Applications”, “Journal of Retailing and Consumer Services” and “Information and Management”. We used VOSviewer (van Eck and

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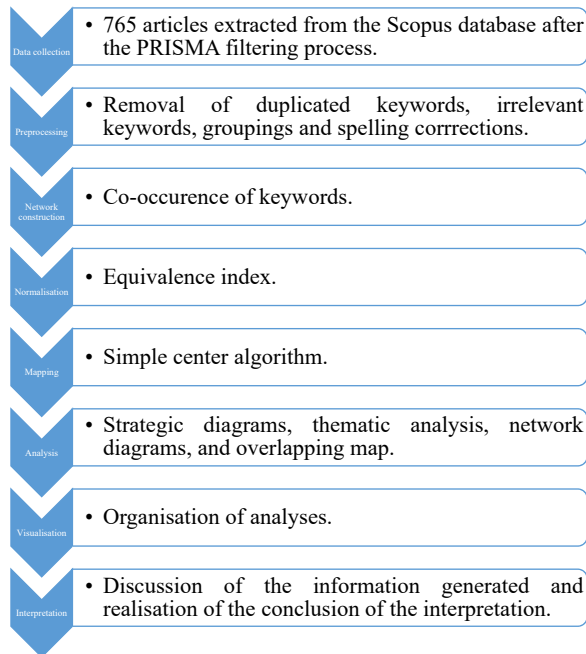


Figure 5.
The science mapping protocol

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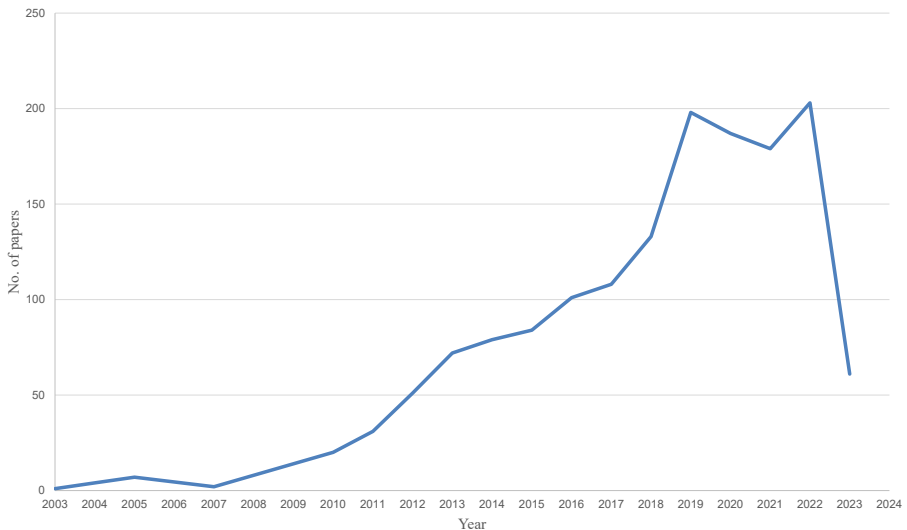
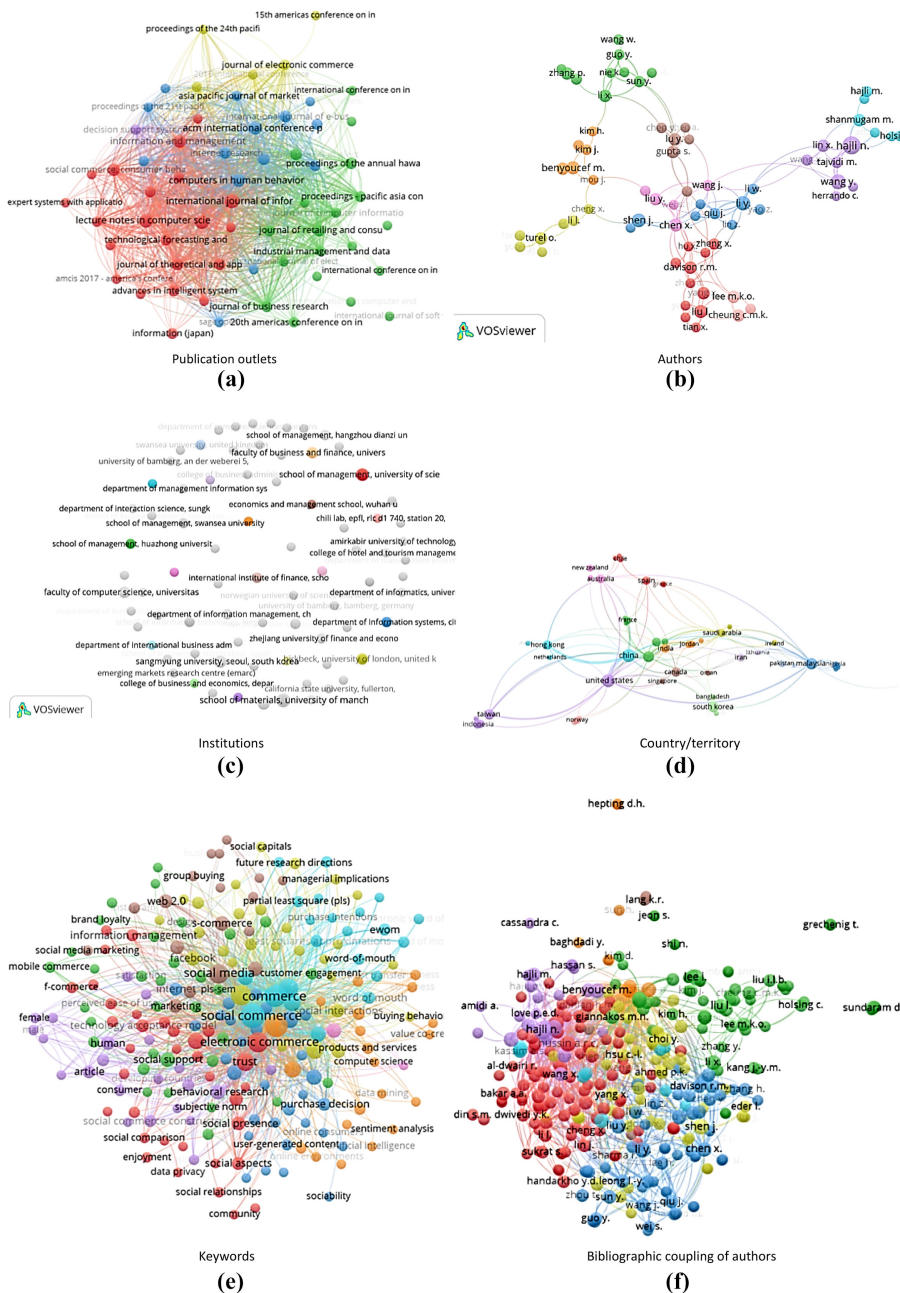


Figure 6.
Yearly publications in s-commerce studies as of 6 April 2023

Source(s): Figure by authors

Waltman, 2010) to generate a networking map of the journals (Figure 7a). Based on a minimum of three articles with zero citations, 60 items and five clusters were obtained.

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Source(s): Figure by authors

Figure 7. Matrix of network maps

In terms of the most prolific authors (Appendix 2), Hajli tops the list, followed by Shanmugam, Dwivedi, Benyoucef, Chen, Lin, Sundaram, Davison, Hussin, Liu and Wang.

However, in terms of the most influential authors based on citation count (Appendix 5), Liang and Turban are the leaders, followed by Benyoucef, Hajli, P. Zhang, Huang, Kim, Lu, Gupta and H. Zhang. The authors' network map, with a minimum of two articles and zero citations (Figure 7b), indicated that 70 items were spread across 10 clusters.

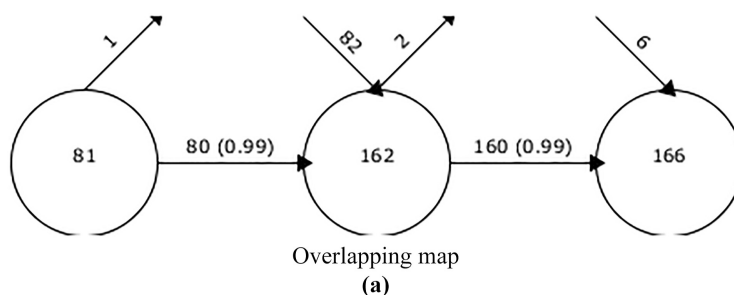
In terms of the most productive institutions (Appendix 2), the "The City University of Hong Kong" tops the list, followed by the "University of Science and Technology of China", "Swansea University", "Universiti Teknologi Malaysia", "School of Management, the University of Ottawa", "Universiti Tenaga Nasional" and "Hefei University of Technology". However, the most influential institutions are the "Department of Information Systems, National Cheng-Chi University", "University of California (Berkeley)", "National Sun Yat-Sen University", "Indian Institute of Management (Raipur)" and "School of Management, Wuhan University", as shown in Appendix 5. Using a minimum threshold of two articles with 0 citations, 111 items and 78 clusters were obtained (Figure 7c).

In terms of the most productive country/territory (Appendix 3), China tops the list, followed by the U.S., the UK, Malaysia, Taiwan, South Korea, Indonesia, Canada, India, Australia, Hong Kong and Germany. Appendix 6 shows that the most influential country/territory is the U.S., followed by China, Taiwan, the UK, Canada, South Korea, France, Malaysia, India and Hong Kong. Using a minimum of one article with zero citations, 54 items and 14 clusters were obtained (Figure 7d).

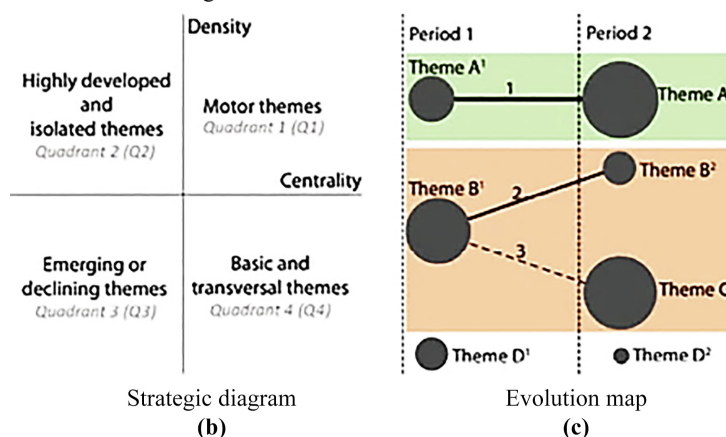
In terms of the most cited article (Appendix 4), Liang, Ho, Li and Turban's paper titled "What drives social commerce: The role of social support and relationship quality" tops the list with 828 citations, followed by Huang and Benyoucef ("From e-commerce to social commerce: A close look at design features"), Kim and Park ("Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance"), Liang and Turban ("Introduction to the special issue social commerce: A research framework for social commerce"), Stephen and Toubia ("Deriving value from social commerce networks") and B. Lu, W. Fan and M. Zhou ("Social presence, trust and social commerce purchase intention: An empirical research"). Moreover, the keywords with the highest occurrences (Appendix 6) are "Social Commerce", "Social Commerces", "Commerce", "Electronic Commerce" and "Social Networking (Online)". Based on a minimum of five keywords, 211 items and nine clusters were obtained (Figure 7e). Finally, we performed a bibliographic coupling of authors with a minimum of two articles with zero citations and obtained 318 items and eight clusters (Figure 7f).

3.6 Science mapping analysis

We applied the following SciMAT analysis configuration: unit of analysis: "words (author keywords, source keywords)"; type of network: "co-occurrence"; normalisation measure: "equivalence index"; cluster algorithm: "centres simples"; max cluster size: 12; min cluster size: 3; evolution measure: "Jaccard index"; overlapping measure: "inclusion index". For comparison, we divided the publication years into three stages: 2003 to 2010, 2011 to 2016, and 2017 to 2023. The overlapping map (Figure 8a) indicates the number of articles in each stage (circle), articles that disappeared in the next stage (outgoing arrow), newly entered articles (incoming arrow) and articles that remained in the next stage (connected arrow). The similarity index, which indicates the ratio of shared keywords between successive sub-periods, is shown in parentheses. There are two dimensions (i.e. centrality and density) and four quadrants in the strategic diagram (Figure 8b). Centrality measures the external interactions among networks, whereas density measures a network's internal cohesion (Cobo et al., 2012). The "motor themes" are well developed, important and vital for configuring a research paradigm, while the "basic and transversal themes" are not yet fully developed but are important and relevant to the research field. The "emerging or declining themes" are poorly or marginally developed themes, while the "highly developed and isolated themes"



Note(s): Circle = No. of articles in current stage, Out-going arrow = No. articles that disappeared in next stage, In-coming arrow = No. new articles that entered into the current stage, Horizontal arrow = No. articles that remained in next stage



Source(s): Figure by authors

Figure 8. Components in science mapping analysis

are well developed but of minimal importance, as they are very specific and peripheral. In an evolution map (Figure 8c), the volume of the sphere signifies the number of articles, whereas the width of the line signifies the inclusion index (i.e. the weight of the relationship between themes). The solid line represents a conceptual nexus (i.e. thematic connection), whereas the dotted line represents a component nexus (i.e. keyword connection).

3.6.1 Stage 1: 2003 to 2010 (Figure 9a). The motor themes are *social networking*, *commercial studies* and *virtual community*, while the emerging themes are *communication studies* and *analytic approach*; *social shopping* is the basic and transversal theme, and *community studies* is an isolated and highly developed theme.

3.6.2 Stage 2: 2011 to 2016 (Figure 9b). *Social commerce* emerged as the top motor theme, followed by *artificial intelligence*, *online shopping* and *social technologies*. The emerging themes include *f-commerce*, *mobile applications* and *service-based*. *Consumer behaviour*, *Web 2.0* and *data-gathering methods* are the basic and transversal themes, while the isolated and highly developed themes are *user studies*, *social commerce constructs*, *shared commerce* and *cognitive factors*.

3.6.3 Stage 3: 2017 to 2023 (Figure 9c). During this stage, *social commerce* and *data-gathering methods* remain the top motor themes, followed by *innovation studies*, *product recommendation* and *human-computer-interaction*. The basic and transverse themes were replaced by *social factors*, *quality-based* and *impulse buying behaviour*. *Perceived social presence*, *consumption behaviour* and

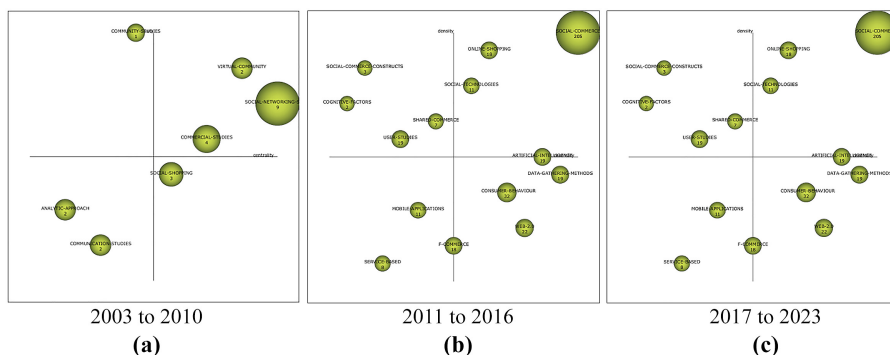


Figure 9.
Strategic diagrams of
the s-commerce
paradigm

Source(s): Figure by authors

continuance intentions are isolated and highly developed themes. The emerging theme is *consumer engagement*, and *competition* and *social commerce constructs* have transformed into declining themes from the highly developed and isolated themes in the previous stage.

Looking more closely, the subthemes for social commerce (Figure 10a) include *commercial studies*, *social networking sites*, *theories or models*, *e-commerce*, *purchase intention*, *trust-based*, *social media*, *sales*, *analytic approach*, *information systems* and *economic studies*. On the other hand, the subthemes for innovation studies (Figure 10b) include *technological factors*, *perception-based*, *risk assessment*, *mobile applications*, *m-commerce*, *value co-creation*, *adoption studies*, *privacy concerns*, *security*, *health* and *sustainability*. The subthemes for data gathering methods (Figure 10c) are *consumer decision-making*, *websites*, *research frameworks*, *social interactions*, *purchase decision*, *business studies*, *literature reviews*, *the internet*, *advertising*, *developing countries* and *food studies*. The subthemes for *continuance intentions* (Figure 10d) include *marketing studies*, *consumer satisfaction*, *gratifications*, *mobile social commerce*, *social commerce sites*, *personalisation*, *personality*, *collaborative behaviours*, *information technology*, *communication studies* and *agricultural*. Conversely, the subthemes for *human-computer-interaction* (Figure 10e) are *behavioural research*, *consumer studies*, *empirical studies*, *relationship studies*, *social influence*, *user studies*, *blockchain studies*, *cloud computing*, *cost factors*, *social design* and *interface design*. Figure 10f shows that the subthemes for consumption behaviour are *purchasing behaviours*, *e-tailing*, *business models*, *consumer-generated content*, *social network services*, *information sharing behaviour*, *utilitarian*, *participatory behaviour*, *serendipity*, *virtual community* and *uncertainty*. The subthemes for *product recommendation* (Figure 10g) consist of *machine learning approaches*, *big data*, *the fuzzy logic approach*, *swift guanxi*, *community studies*, *online systems*, *C2C commerce*, *service-based*, *social relationships*, *cognitive factors* and *affective factors*.

The subthemes for *quality-based* (Figure 10h) include *artificial intelligence*, *online consumer review*, *research methodologies*, *online platforms*, *intention to buy*, *social referrals*, *information quality*, *crowdsourcing*, *corporate social responsibilities*, *environmental studies* and *cultural factors*. For *perceived social presence*, the subthemes (Figure 10i) consist of *social commerce platform*, *social support*, *Web 2.0*, *interaction factors*, *computer applications*, *e-loyalty*, *online communities*, *product-based*, *information seeking*, *social technologies* and *emerging markets*.

Figure 10j illustrates the subthemes for *social factors*, including *consumer behaviour*, *f-commerce*, *social shopping*, *attitude*, *social identity*, *emotional factors*, *psychological studies*, *push-pull-mooring*, *relational model*, *Industry 4.0* and *behavioural intention*. Figure 10k shows the subthemes for *shopping value*, including *consumer engagement*, *electronic word of mouths*, *social media marketing*, *informational support*, *brand*, *live stream shopping*, *IT affordance*,

collective buying, perceived risk, experimental studies and organisational perspective. For impulse buying behaviour (Figure 10l), the subthemes are liability, online shopping, social aspects, hedonic value, customer value, usability, sentiment analysis, digital business studies, systematic literature review, price-based and demographic factors. Figure 10m depicts the competition's subthemes, including motivation, small and medium-sized enterprise, knowledge-based systems and event studies. Finally, the subthemes for social commerce constructs (Figure 10n) are social commerce acceptance and shared commerce.

3.7 The s-commerce paradigm evolution map

Figure 11 presents the evolution map and performance analysis of the entire s-commerce paradigm during these three stages. From 2003 to 2010, studies on s-commerce mainly

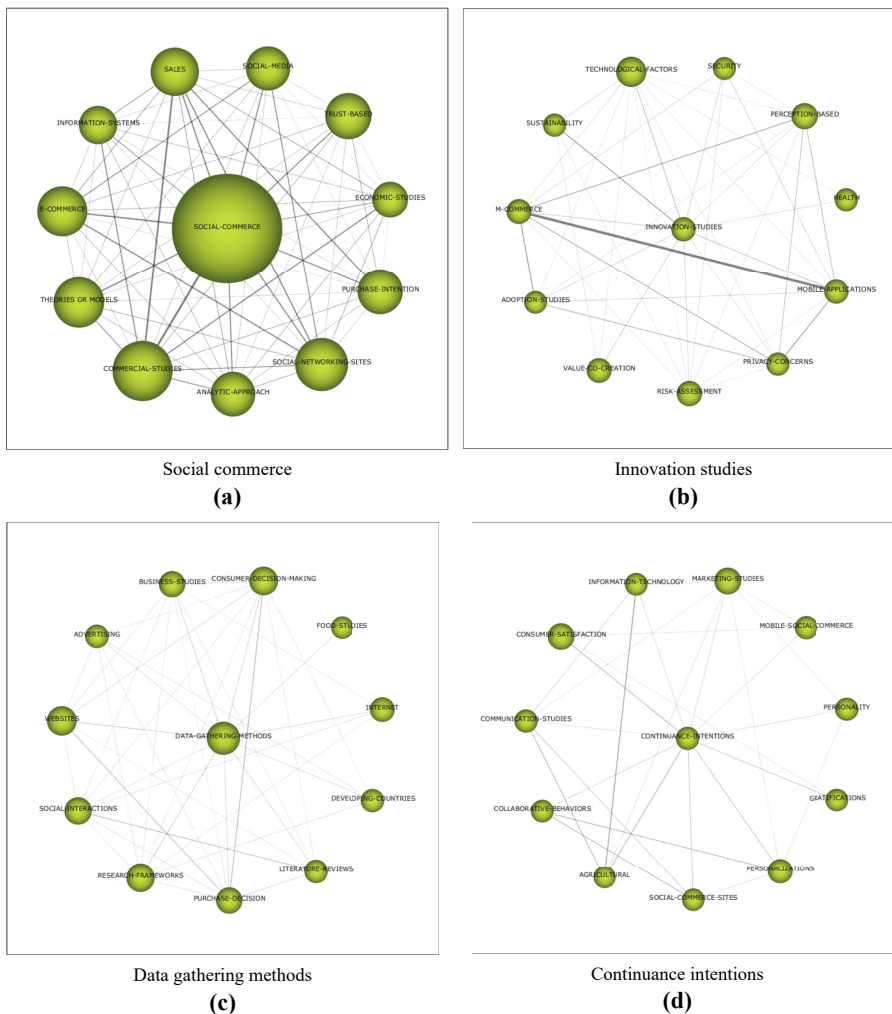
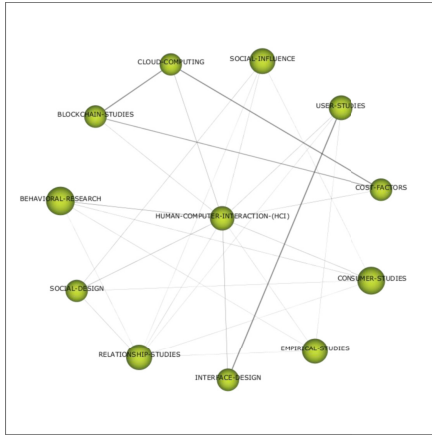
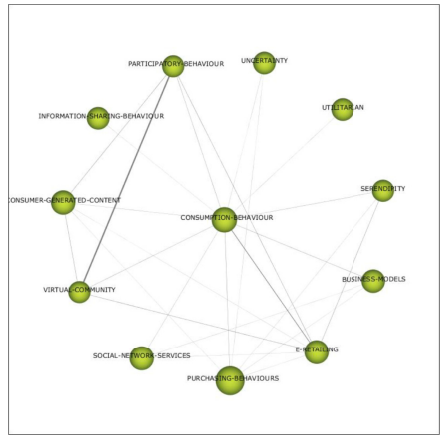


Figure 10. Matrix of network diagrams

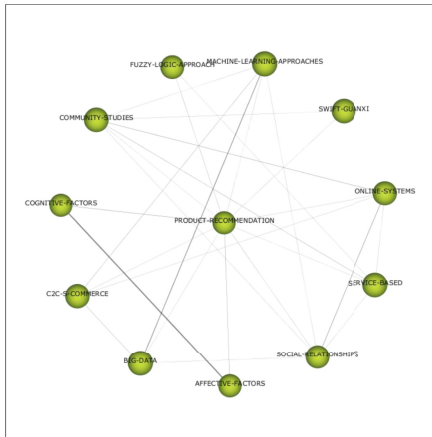
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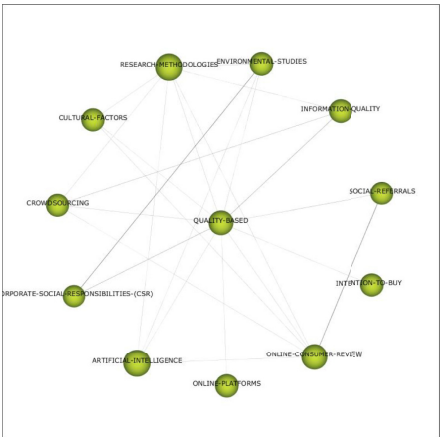
Human computer interaction (HCI)
(e)



Consumption behaviour
(f)



Product recommendation
(g)

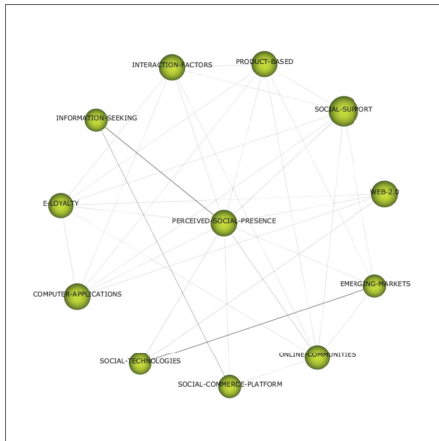


Quality-based
(h)

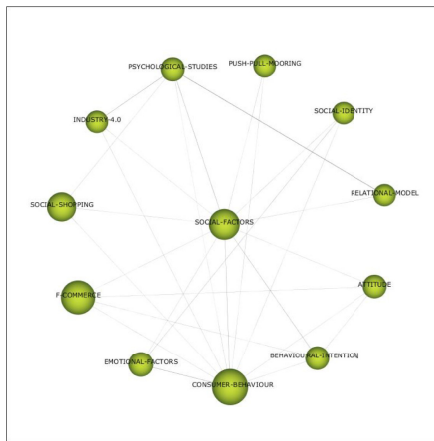
Figure 10

(continued)

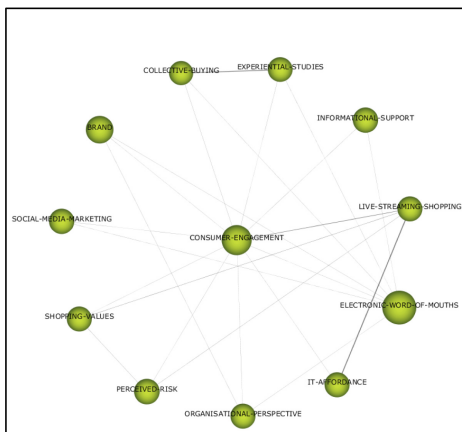
Revisiting the social commerce paradigm



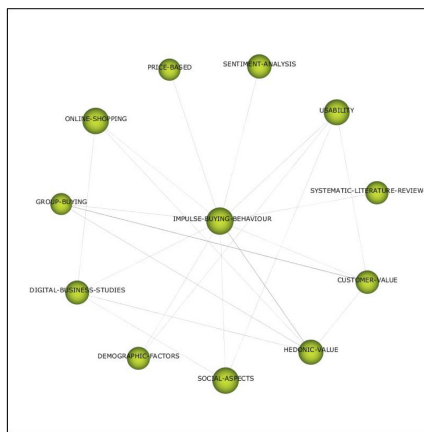
Perceived social presence
(i)



Social factors
(j)



Consumer engagement
(k)



Impulse buying behaviour
(l)

Figure 10

(continued)

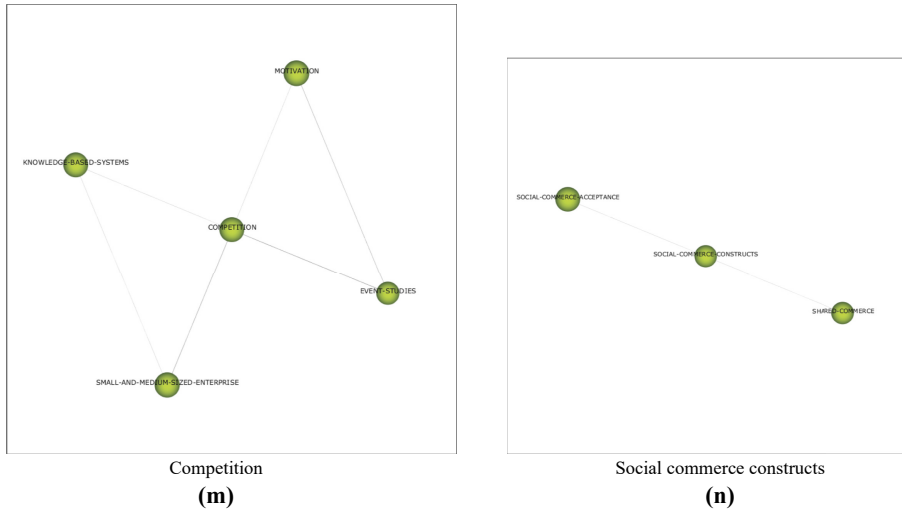


Figure 10

Source(s): Figure by authors

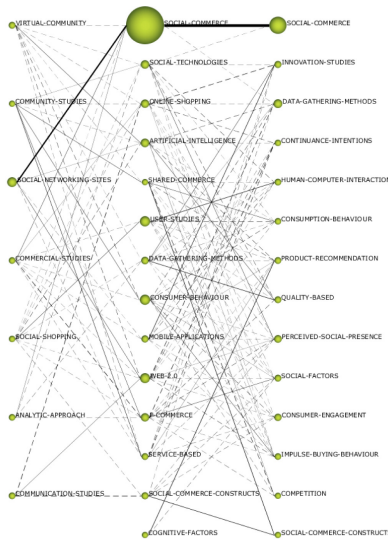


Figure 11. The s-commerce paradigm evolution map (2003–2023) and performance analysis

Source(s): Figure by authors

Stage	Theme	No. of Papers	Citations	H-index	
1	Social networking sites	27	1555	11	
	Commercial studies	15	2365	9	
	Social shopping	14	242	7	
	Community studies	11	289	7	
	Virtual community	9	262	3	
	Analytical approach	9	359	6	
	Communication studies	7	113	3	
	2	Social commerce	345	12045	55
		Web 2.0	88	3837	26
		F-commerce	87	2505	21
Consumer behaviour		81	941	20	
User studies		78	2584	22	
Artificial intelligence		76	2539	20	
Social technologies		70	2167	20	
Data gathering methods		68	3911	21	
Online shopping		67	2687	23	
Mobile applications		53	3838	16	
Shared commerce		43	1501	15	
Service-based		41	640	13	
Social commerce constructs		18	1865	14	
Cognitive factors		5	36	3	
3		Social commerce	523	3882	33
		Social factors	162	1009	19
		Data gathering methods	148	1357	22
	Impulse buying behaviour	120	1040	19	
	Perceived social presence	118	1110	19	
	Human-computer-interaction	103	747	18	
	Consumer engagement	98	946	19	
	Quality-based	93	635	15	
	Consumption behaviour	80	516	12	
	Innovation studies	80	508	13	
	Product recommendation	79	667	17	
	Continuance intentions	72	586	13	
	Social commerce constructs	36	148	6	
Competition	35	99	5		

focused on social networking sites, commercial studies, social shopping, community studies, virtual communities, analytical approaches and communication studies. However, the focus from 2011 to 2015 shifted to social commerce, Web 2.0, F-commerce, consumer behaviour, user studies, artificial intelligence, social technologies, data gathering methods, online shopping, mobile applications, shared commerce, service-based, social commerce constructs

and cognitive factors. From 2017 to 2023, social commerce remained the research paradigm, with a focus on data-gathering methods, impulse buying behaviour, perceived social presence, human-computer-interactions, consumer engagement, quality-based, consumption behaviour, innovation studies, product recommendation, continuance intentions, social commerce constructs and competition.

There is a strong connection between *social networking sites* and *social commerce*, which constitutes one of the bases of the s-commerce field. Other strong connections include *virtual community-artificial intelligence-competition*, *community studies-shared commerce-social commerce constructs*, *community studies-consumer behaviour-impulse buying behaviour*, *community studies-e-commerce-social factors*, *commercial studies-social commerce-social commerce*, *social shopping-user studies-human-computer interactions*, *mobile applications-innovation studies*, *social factors-product recommendation*, *shared commerce-social commerce constructs*, *shared commerce-consumption behaviour*, and *social commerce constructs-social commerce constructs*.

4. Discussion

Following the approach used by [Santana and Cobo \(2020\)](#), we classified the research themes into five dimensions: social, commerce, technology, behaviour and research.

4.1 Social dimension

The research themes for this dimension consist of *virtual community*, *community studies*, *social networking sites*, *perceived social presence* and *social factors*. Moreover, s-commerce has other social elements, including social media marketing, social advertising, social CRM, social group buying, social shopping, social support, social influence, social financing, social recommendations and social reviews. Because S-commerce is conducted using social media, where the virtual community can create UGC and social interactions that allow the sharing of reviews, ratings, opinions, recommendations, information, experiences, etc., the social theme is indeed one of the backbones of s-commerce.

Social factors are the major pull factors of the s-commerce phenomenon as buyers are authorised to create user content on social media ([Huang and Benyoucef, 2013](#)). [Liang and Turban \(2011\)](#) argue that social media is a key component of s-commerce. On social platforms, buyers can harness social experiences and knowledge to better understand online purchase decision-making in a socially centred and user-driven s-commerce marketplace. Based on peer consumer-generated content, buyers can obtain product evaluations from others which influence their purchase decisions ([Lin et al., 2017](#)). S-commerce is also related to the application of Internet-based social communities by e-commerce vendors from the perspective of sociology and is mostly focused on the social influence that leads to consumer interactions ([Esmaeili and Hashemi, 2019](#)).

Social factors such as social support can build close relationships among s-commerce users while fortifying their well-being in organisations ([Bai et al., 2015](#)). On s-commerce platforms, users can receive and share information with others, and sharing supportive information can strengthen friendships and trust among them ([Hajli, 2014](#)). Social support can be classified into user, UGC and platform support. In s-commerce, user support refers to user relationships, whereas UGC support refers to reviews, recommendations and ratings. Platform support refers to the tools that support s-commerce activities ([Liang et al., 2011](#)). Generally, studies have shown that social theories such as social capital theory, social cognitive theory, social exchange theory, social influence theory, social response theory, social identity, social bonding, social interaction, social presence and social support theory play a significant role in s-commerce consumer behaviour ([Busalim et al., 2019](#); [Han et al., 2018](#); [Zhang and Benyoucef, 2016](#)).

4.2 Commerce dimension

The commerce dimension includes the research themes of *social commerce, online shopping, shared commerce, commercial studies, quality-based, social shopping, e-commerce, service-based, competition and social commerce constructs*. In addition, s-commerce involves various commercial activities, including marketing, advertising, transactions, ratings, reviews, word-of-mouth, customer service (CRM), business collaboration, HRM, referrals and recommendations (Liang and Turban, 2011). Commercial s-commerce activities may assist consumers in their pre-purchase product assessment, purchase decision-making and post-purchase behaviours (Lin et al., 2017). Commerce is the fourth layer of the s-commerce design model (Huang and Benyoucef, 2013). The commerce layer provides the opportunity to conduct commercial activities within a community.

To summarise, there are many perspectives on the commercial facets of s-commerce, including business strategies, business forecasting, branding, marketing, advertising, deals, discounts, promotions, one-stop shopping, group buying, fixed-price group buying, venture capital, cash back, competitive advantage and smart partnerships (Zhou et al., 2013). Studies have shown the significant effects of social interactions among online social network users. For example, strong ties among family and friends of the users can influence their purchase decisions (Baethge et al., 2016). In addition, s-commerce is dynamic and continues to evolve according to extant technological advancements. For example, with the emergence of metaverse commerce, a new form of s-commerce, also known as social metaverse commerce, has emerged (Chen and Yang, 2022; Zvarikova et al., 2022).

4.3 Technology dimension

The technology dimension encompasses the research themes of *social technologies, innovation studies, artificial intelligence, mobile applications and Web 2.0*. Additionally, many emerging technologies may alter the manner in which s-commerce is conducted. These include artificial chatbots, BDA, blockchain technology, machine learning, IoT, virtual reality, quantum computing, smart systems, expert systems, robotics and other IR4.0 emerging technologies. Technological advancements strongly facilitate s-commerce (Wang and Zhang, 2012). For instance, Facebook is used by eBay as its s-commerce platform, Google+ is used as a platform for g-commerce, and SellSimply is used by Twitter as the t-commerce platform. Facebook is the main platform for s-commerce and is more popularly known as f-commerce. Recently, mobile technology has pushed s-commerce to unite physical stores with online social networks in what is known as ms-commerce. Software-as-a-service (SaaS) capabilities also facilitate s-commerce implementation (Zhou et al., 2013). S-commerce is expected to evolve from a single IT platform into multiple platforms, channels and social networks (Wang and Zhang, 2012).

In short, technology plays a vital role in providing the best user experience for s-commerce. For example, collaborative shopping technologies, such as virtual advisors, avatars and artificial intelligence-assisted social recommender systems, can be applied to support communication, navigation and customer shopping value (Baethge et al., 2016). In addition, through social recommender systems, users' social relationship data and profiles can be used to filter information and create meaningful recommendations.

4.4 Behaviour dimension

This dimension consists of the research themes of *continuance intention, human-computer interaction, user studies, consumer behaviour, product recommendation, consumer behaviour, consumer engagement and cognitive factors*. As S-commerce encompasses selling and purchasing products and services within virtual communities, it also involves various consumer behaviours such as customer loyalty, attitude, satisfaction, intentions, acceptance,

rejection, trust and distrust. Zhang and Benyoucef (2016) classified consumer decision-making in s-commerce into five stages, namely, “need recognition”, “search, evaluation”, “purchase” and “post-purchase”. The consumer behaviours within these stages include “attention”, “attraction”, “information seeking”, “browsing”, “attitude”, “purchase behaviour”, “information disclosure”, “s-commerce intention”, “website usage”, “participation”, “brand loyalty” and “information sharing”. Yadav *et al.* (2013) classified the outcomes of s-commerce activities into four categories, namely “need recognition”, “pre-purchase activities”, “purchase decision” and “post-purchase activities”. Consumer behaviours include the stimulation of demand, awareness of alternatives, direct attention, information search, identifying salient attributes, assessing reviews, sharing consumption experiences and addressing post-purchase issues.

Most researchers concur that user participation behaviour is of utmost importance for s-commerce success (Baethge *et al.*, 2016). There are two types of participation behaviours: active and passive. Active participation involves contributing to content and relationships on s-commerce platforms by commenting on posts, whereas passive participation entails browsing content without contributing to content generation or relationship building. In addition to user participation behaviour, consumers’ purchase intention for s-commerce is popular. It has been found that consumers’ personal and machinery interactivity can influence online purchase intention; machinery interactivity can affect attitudes, physical telepresence, perceived behavioural control and trust. Consumer behaviour in generating user content (e.g. “likes”) and disseminating information via electronic word-of-mouth (eWoM) contributes to online purchase intention (Baethge *et al.*, 2016). Moreover, consumers’ behaviours also include loyalty in the form of repeat purchase behaviours. We found that utilitarian shopping value (e.g. monetary savings) and hedonic shopping value (e.g. exciting shopping experiences) may trigger repeat purchase intentions.

4.5 Research dimension

This dimension consists of the themes of *research methodology*, *data gathering methods* and *analytical approach*. Research methodology is an imperative tool for differentiating research projects (Liang and Turban, 2011). Existing s-commerce studies use various research methodologies to offer empirical evidence on consumer behaviour (Zhang and Benyoucef, 2016). Generally, empirical studies can be classified as quantitative (e.g. surveys, observations and experiments) or qualitative (e.g. focus group interviews, narrative analysis and ethnographic studies). From an s-commerce perspective, the panel data approach can be applied to gather qualitative (e.g. the content of messages) and quantitative (e.g. the total number of messages) data using web crawlers with the application of SNS APIs (Zhang and Benyoucef, 2016). In addition, the experimental method can be applied to create experimental brand pages on SNS and investigate consumer behaviour. We believe that by applying new research methods, new discoveries can be obtained.

4.6 The SC framework and its applications

Based on these four themes, we developed an updated research framework for s-commerce studies. We call this framework the SC framework (Figure 12). The framework consists of social, commerce, technology and behaviour dimensions. These dimensions may interact with one another. Various research methods can be applied to these dimensions to obtain a better understanding of the context of the studies. The framework is just a basic model for s-commerce and is not exhaustive or static; we encourage researchers to further extend the framework by incorporating other external variables, such as moderators, mediators and other socio-demographic variables.

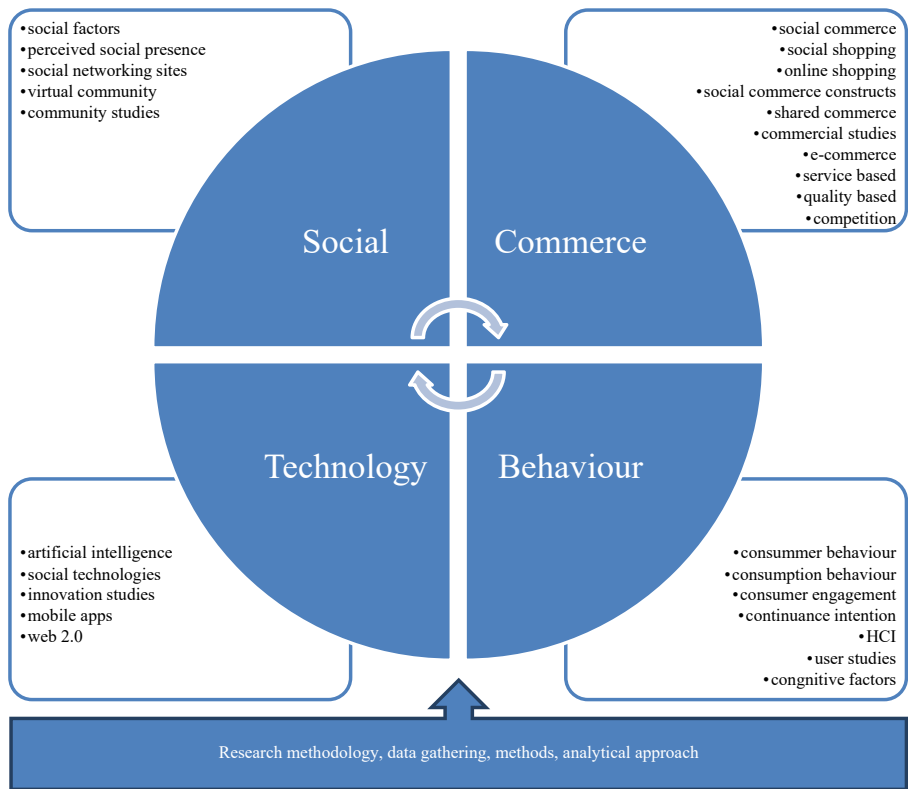


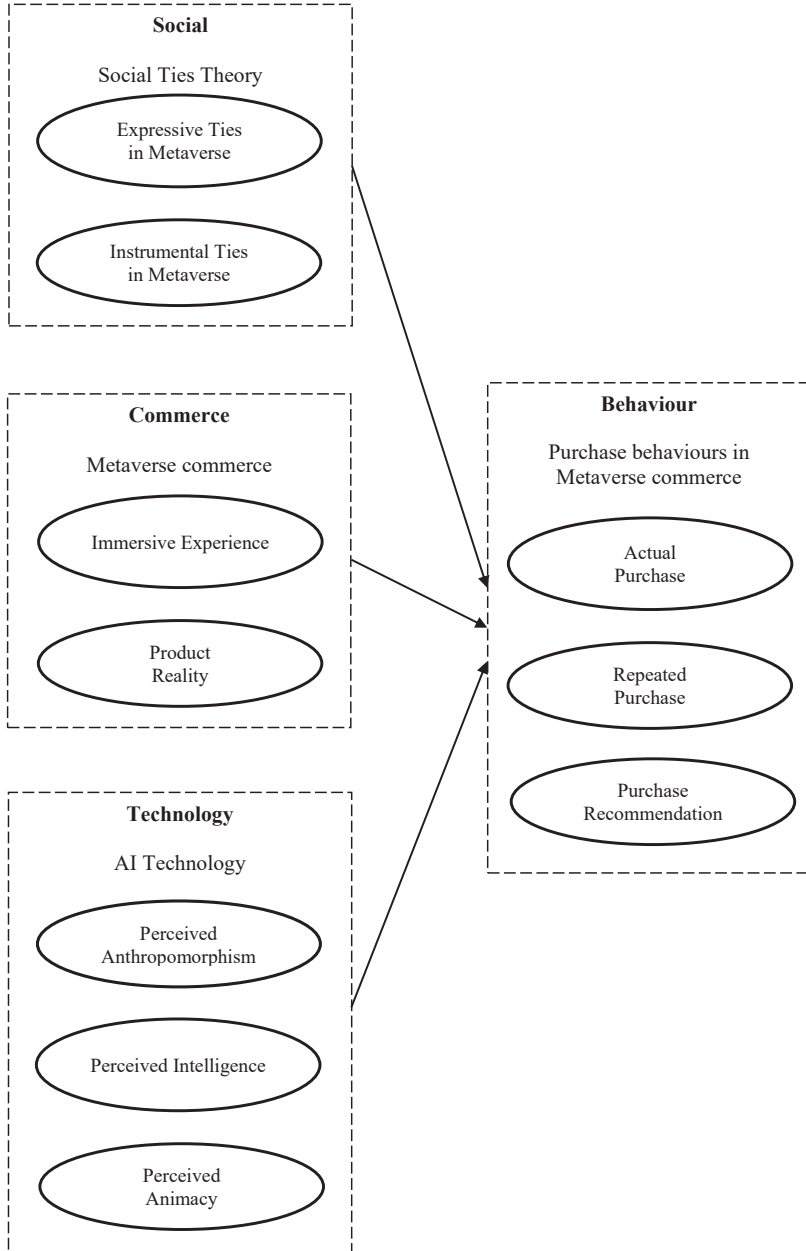
Figure 12.
The SC framework

Source(s): Figure by authors

To date, no studies have used this newly developed framework. However, we found studies that used some of the dimensions of this framework. Ideally, to apply the framework, researchers should integrate social, technological, business, or behavioural theories into all four dimensions. However, researchers may use only some of these dimensions in certain contexts. To illustrate this further, we refer to related studies that used some of the dimensions. For example, [Hornig and Wu \(2020\)](#) integrate social capital theory with the dimensions of behaviour (i.e. participating and browsing) and commerce (s-commerce intention of giving and receiving). [Molinillo et al. \(2020\)](#) integrate the social support theory with the dimensions of social (i.e. community drivenness, trust and identification) and behaviour (i.e. customer engagement, repurchase intention, stickiness intention, willingness to co-create and positive eWoM). [Osatuyi et al. \(2020\)](#) integrate expectation-confirmation theory with the dimensions of technology (i.e. perceived usefulness), intention (i.e. continuance intention) and behaviour (i.e. confirmation, satisfaction). [Loh et al. \(2022a\)](#) used the component of social (referent network size), commerce (price savings), technology (mobile usefulness, technostress) and behaviour (satisfaction, inertia, continuance intention) to study continuance intention to use mobile payment during the Covid-19 pandemic. [Loh et al. \(2022b\)](#) used a multidimensional nomological network consisting of the social (reference network size), technology (mobile usefulness, perceived complementarity, technostress), commerce (price savings) and behaviour (satisfaction, inertia, continuance intention) dimensions to understand continuance intention regarding mobile payment. By using

different combinations of dimensions, the SC framework has great potential for researchers. To demonstrate the application of the SC framework using the same approach as that used by Leong *et al.* (2022), an example model is illustrated in Figure 13. The proposed model is based

Revisiting the social commerce paradigm



Source(s): Figure by authors

Figure 13.
An exemplary research model using the SC framework

on the social ties theory (Li *et al.*, 2023) in the context of metaverses (Dwivedi *et al.*, 2022) assisted by AI technology (Balakrishnan and Dwivedi, 2021). This model can be further extended using new internal, external, moderating, contextual, control and outcome mechanisms to enhance the predictive power of the SC framework.

5. Conclusions

This study successfully answered the research questions through a comprehensive scoping review and science mapping analysis. The study provided a new definition of s-commerce artefacts and proposed a refined s-commerce research framework for future research and theory development. Below are several important and significant contributions of this study.

5.1 Theoretical contributions

This study makes several important theoretical contributions to the literature. The most important theoretical contribution is the development of an SC framework. This addresses the shortcomings of the existing s-commerce framework. The quadruplet SC framework has closed the gaps in the previous framework as it incorporates the most fundamental dimensions of s-commerce in the era of Industrial Revolution (IR) 4.0. For example, state-of-the-art technologies such as the meta-verse, virtual reality, augmented reality, artificial intelligence and IoT can be integrated into the SC framework's technology dimension, whereas contemporary s-commerce enablers such as chatbots, virtual agents and artificial intelligence assistants can be included in the social dimension of the SC framework. In the commerce dimension, new business models, such as conversational commerce, can be incorporated, and in the behavioural dimension, unexplored behaviours such as stickiness, distrust and disloyalty can be inserted into the SC framework. Using the SC framework provides researchers with clear guidelines for conducting their studies. More importantly, the SC framework successfully addresses the shortcomings of existing frameworks by addressing issues of consistency, extensiveness, completeness, accuracy and parsimony. It provides a theoretical foundation to strengthen our understanding of the key dimensions that define s-commerce.

Second, this study addresses the issues of inconsistency and ambiguity in defining s-commerce. Previously, the definitions of s-commerce were derived from qualitative systematic reviews. Unlike these studies, this systematic review combines science mapping, which is quantitative, as a complementary approach. Thus, the definition derived from this approach will be more scientific and empirical and can provide a more comprehensive, definite and accurate definition for s-commerce compared to existing definitions. With a new definition of s-commerce, this study makes an important theoretical contribution to the extant s-commerce literature.

Third, this study provides a holistic understanding of the evolution of the s-commerce paradigm right from its birth. With the knowledge of the evolution of the s-commerce paradigm, researchers can avoid "re-inventing the wheel" as they will not replicate research themes that have declined or disappeared. Furthermore, the evolution map can provide guidelines for researchers to revisit areas deemed relevant and important in the current context. By revisiting these areas, researchers can address the limitations and research lacunae that were not addressed previously owing to technological constraints.

Fourth, researchers can derive various research models for theoretical development based on the dimensions of the SC framework. For example, they could examine the effects of social factors, blockchain technology and s-commerce service quality on consumer engagement. Researchers can also integrate socio-demographic variables, research theories or frameworks, and moderating and mediating variables. The SC framework provides

a fundamental framework for researchers to explore the variability of research models that can mitigate the weaknesses and limitations of existing models.

Fifth, based on the motor themes of the last stage (2017–2023), researchers can position their papers and research focus relative to the current s-commerce paradigm. This will assist researchers in obtaining desk rejections while increasing the possibility of paper acceptance. In addition, it can also help narrow the scope and area of study because researchers can identify research lacunae based on strategic diagrams and evolution maps. More importantly, this study provides a research agenda based on the s-commerce framework to guide researchers towards further advancing the s-commerce literature in terms of theoretical development. Details of the research agenda are presented in [Section 5.3](#).

Sixth, based on the list of the most receptive journals for s-commerce studies, researchers can decide the best outlets for their research. Finally, using a scoping review combined with a bibliometric science mapping approach to develop a research framework provides a new methodological contribution to future work.

5.2 Practical contributions

The SC framework may be analogous to the T-O-E framework ([Tornatzky and Fleischer, 1990](#)). Based on this SC framework, researchers may determine the factors of social, commercial, technological and behavioural dimensions. [Figure 14](#) shows an application of the SC framework that can be altered according to the specific needs of researchers. This framework provides a base model for researchers to extend in the future. By applying a practical guide, researchers and scholars can develop meaningful research models that are highly relevant to the s-commerce paradigm.

Based on a list of the most influential authors and institutions, s-commerce practitioners can establish smart partnerships and collaborations to gain the best researchers and institutions and further upgrade the quality of their products and services. Second, s-commerce service providers can use the framework as a guideline for research and development, marketing strategies, decision-making policies and strategic management. For example, in the social dimension, they may focus on applying social factors to virtual communities to ensure that the s-commerce platform is socially friendly. In the commerce dimension, they may upgrade consumer services and ensure that the platform is business-friendly. In the technology dimension, efforts may be diverted to utilising state-of-the-art technologies to ensure that s-commerce transactions can be performed securely, quickly, effectively and reliably.

Furthermore, universities can recruit the best academics in the field of s-commerce or collaborate with the most influential institutions to further develop their research centres. Third, academics in the field of s-commerce can identify potential co-researchers and co-authors and establish more networks based on network maps. In addition, they can identify potential external examiners among postgraduate students. Potential students can identify institutions at which to further their postgraduate studies.

5.3 Research agenda for SC framework

Based on the SC framework and practical guidance, we propose the following research agenda:

- (1) To further extend the theoretically meaningful predictors by incorporating external factors beyond the framework
- (2) To expand the levels of predictors, including individuals, dyads, teams, groups, organisations, manufacturers, suppliers, advertisers, marketers and vendors.

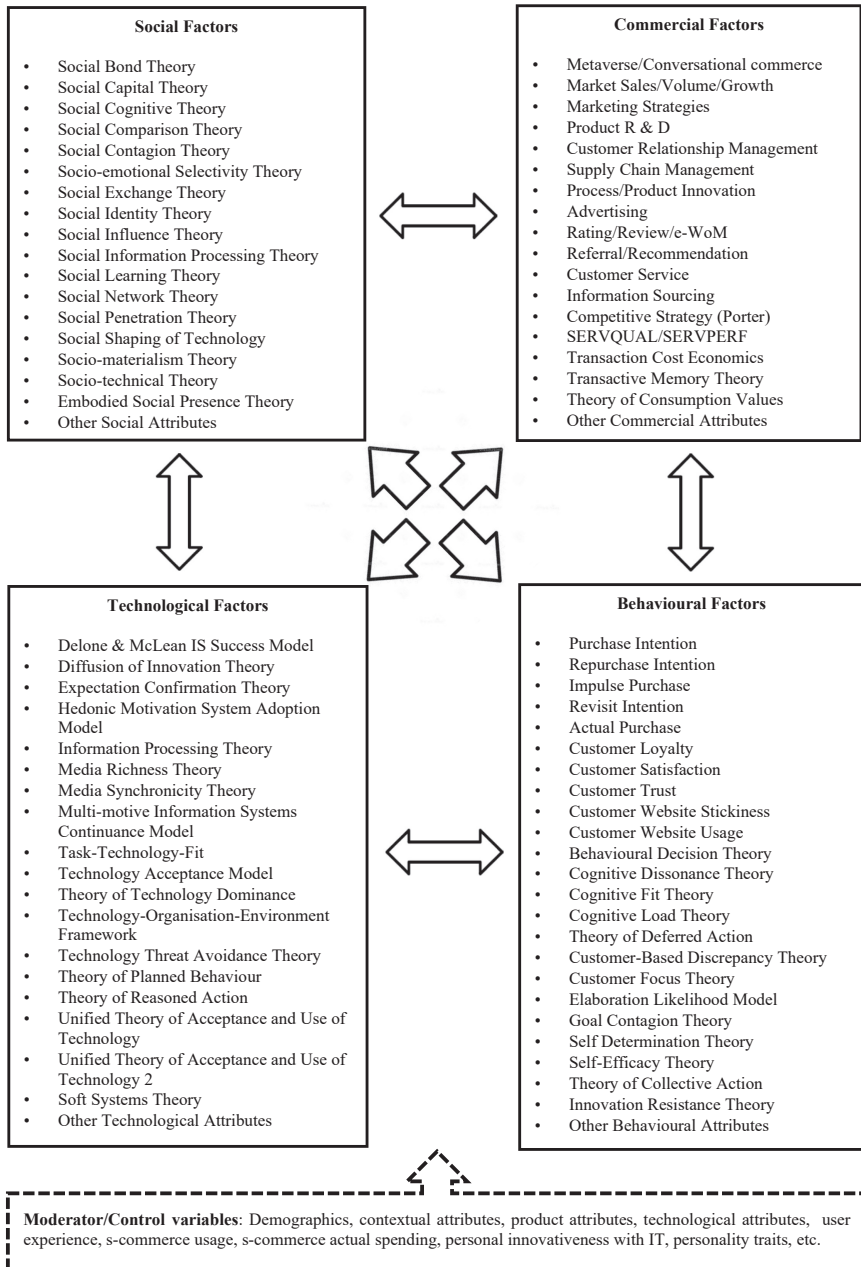


Figure 14.
A practical guideline for the application of the SC framework

Source(s): Figure by authors

- (3) To investigate linear, nonlinear, or curvilinear effects using contemporary and state-of-the-art statistical analyses, such as necessary condition analysis (NCA), artificial neural networks (ANNs), fuzzy-set comparative qualitative analysis (*fs-QCA*), data mining, machine learning, multi-level modelling, predictive analysis and latent growth modelling.
- (4) To expand research methodologies, including quasi-experimental, longitudinal, mixed-method, action research, case studies, grounded theory and comparative studies.
- (5) To integrate the SC framework with other research frameworks such as technology-organisation-environment (T-O-E), task-technology-fit (T-T-F) and stimulus-organism-response (S-O-R).
- (6) To assess the temporal effects in the SC framework, such as pre-adopters, adopters, post-adopters, experienced and non-experienced.
- (7) To expand the categories of moderators and mediators, such as cross-national differences; types of platforms; customer, brand, product, service, or system attributes; religion; ethnicity; cultural or linguistic diversity; social status; digital divide or disparity; usage frequency; actual spending; incentive; and promotion.
- (8) To extend the context of the commercial dimension to newly minted business models such as meta-verse commerce, NFT commerce, conversational commerce and virtual goods.

6. Limitations and future research directions

First, the articles were limited to those written in English. Future studies should include articles published in other languages after translation. Second, because of the different numbers of fields among the various databases, this study used only one database, Scopus. Therefore, future studies should consider using other databases (e.g. Web of Science) to conduct comparative studies. A promising future direction would be to empirically validate various research models derived from the practical guide to further extend the existing literature in various fields of study.

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Publication year	No. of papers	Subject area	No. of papers	Document type	No. of papers
2003	1	Computer science	939	Journal article	916
2004	4	Business, management and accounting	648	Conference paper	440
2005	7	Social sciences	326	Book chapter	69
2007	2	Engineering	221	Conference review	44
2008	8	Decision sciences	197	Review	40
2009	14	Economics, econometrics and finance	189	Editorial	16
2010	20	Mathematics	125	Book	11
2011	31	Psychology	99	Note	3
2012	51	Arts and humanities	78	Data paper	1
2013	72	Environmental science	46	Erratum	1
2014	79	Energy	37	Short survey	1
2015	84	Agricultural and biological sciences	19	Retracted	1
2016	101	Medicine	19		
2017	108	Physics and astronomy	12		
2018	133	Materials science	11		
2019	198	Multidisciplinary	8		
2020	187	Chemical engineering	4		
2021	179	Biochemistry, genetics and molecular biology	3		
2022	203	Neuroscience	3		
2023	61*	Nursing	2		

Table A1.
Publication year,
subject area and
document type

Note(s): *The number of publications for 2023 is taken up to 6 April 2023 only
Source(s): Appendix by authors

Appendix 2:

Revisiting the social commerce paradigm

Journal	No. of papers	Author	No. of papers	University	No. of papers
<i>ACM International Conference Proceeding Series</i>	43	Hajli, N.	32	City University of Hong Kong	34
<i>Lecture Notes in Computer Science</i> including subseries lecture notes in <i>Artificial Intelligence and Lecture Notes in Bioinformatics</i>	43	Shanmugam, M.	15	University of Science and Technology of China	28
<i>International Journal of Information Management</i>	37	Dwivedi, Y.K.	11	Swansea University	27
<i>Electronic Commerce Research and Applications</i>	31	Benyoucef, M.	10	Universiti Teknologi Malaysia	24
<i>Journal of Retailing and Consumer Services</i>	27	Chen, X.	10	School of Management, University of Ottawa	24
<i>Information and Management</i>	24	Lin, X.	10	Universiti Tenaga Nasional	22
<i>Computers in Human Behavior</i>	22	Sundaram, D.	10	Hefei University of Technology	18
<i>Internet Research</i>	21	Davison, R.M.	9	Newcastle University Business School, United Kingdom	17
<i>Frontiers in Psychology</i>	19	Hussin, A.R.C.	9	Newcastle University	16
<i>Sustainability Switzerland</i>	19	Liu, L.	9	Dalian University of Technology	15
<i>Information Technology and People</i>	18	Wang, Y.	9	Hong Kong Baptist University	15
<i>Journal of Theoretical and Applied Electronic Commerce Research</i>	16	Cheung, C.M.K.	8	Universitas Indonesia	15
<i>International Journal of Electronic Commerce</i>	14	Herrando, C.	8	The University of Manchester	14
<i>Journal of Business Research</i>	14	Islam, T.	8	Huazhong University of Science and Technology	14
<i>Journal of Electronic Commerce Research</i>	14	Lee, I.	8	Xi'an Jiaotong University	13
<i>Technological Forecasting and Social Change</i>	13	Leong, L.Y.	8	Chaoyang University of Technology	13
<i>Behaviour and Information Technology</i>	12	Liébana-Cabanillas, F.	8	Universidad de Granada	13
<i>Asia Pacific Journal of Marketing and Logistics</i>	11	Lu, Y.	8	Wuhan University	13
<i>Electronic Commerce Research</i>	11	Rana, N.P.	8	Bina Nusantara University	13
<i>Industrial Management and Data Systems</i>	11	Shen, J.	8	Princess Nourah Bint Abdulrahman University	13
<i>International Journal of E Business Research</i>	11	Turel, O.	8	Swinburne University of Technology	12
<i>Journal of Computer Information Systems</i>	11	Yang, X.	8	Zhejiang University of Finance and Economics	12
<i>Information Systems Frontiers</i>	10	Bakar, A.A.	7	The University of Auckland	11
<i>Decision Support Systems</i>	9	Benbasat, I.	7	Birkbeck, University of London	11
<i>Advances in Intelligent Systems and Computing</i>	8	Choi, Y.	7	Zhejiang Gongshang University	11
<i>British Food Journal</i>	8	Gupta, S.	7	Renmin University of China	11
<i>International Journal of Electronic Commerce Studies</i>	8	Henninger, C.E.	7	Harbin Institute of Technology	11

(continued)

Table A2.
Top 50 ranking by journal, author and institution

INTR

Journal	No. of papers	Author	No. of papers	University	No. of papers
<i>Journal of Fashion Marketing and Management</i>	8	Huang, Z.	7	Universiti Putra Malaysia	11
<i>Journal of Internet Commerce</i>	8	Mikalef, P.	7	National Chengchi University	11
<i>Communications in Computer and Information Science</i>	7	Pappas, I.O.	7	University of Ottawa	11
<i>Developments in Marketing Science</i>	7	Peko, G.	7	École de Gestion Telfer (Telfer School of Management)	11
<i>Proceedings of The Academy of Marketing Science</i>	7	Sarker, P.	7	Azman Hashim International Business School	11
<i>Electronic Markets</i>	7	Sarker, P.	7	Azman Hashim International Business School	11
<i>International Journal of Data and Network Science</i>	7	Tajvidi, M.	7	Universiti Utara Malaysia	10
<i>Journal of Theoretical and Applied Information Technology</i>	7	Wang, X.	7	Beijing University of Posts and Telecommunications	10
<i>Information Japan</i>	6	Zhang, P.	7	Tamkang University	10
<i>Information Resources Management Journal</i>	6	Al-Adwan, A.S.	6	Universiti Malaya	10
<i>International Journal of Business Information Systems</i>	6	Attar, R.W.	6	McMaster University	10
<i>International Journal of Electronic Marketing and Retailing</i>	6	Boardman, R.	6	Qatar University	10
<i>Journal of Research in Interactive Marketing</i>	6	Dahlan, H.M.	6	Universiti Teknologi MARA	9
<i>Journal of Strategic Marketing</i>	6	Friedrich, T.	6	National Sun Yat-Sen University	9
<i>Kybernetes</i>	6	Grange, C.	6	Norges Teknisk-Naturvitenskapelige Universitet	9
<i>Lecture Notes in Networks and Systems</i>	6	Huang, Q.	6	University of International Business and Economics	9
<i>Lecture Notes of The Institute for Computer Sciences Social Informatics and Telecommunications Engineering LNICST</i>	6	Lee, M.K.O.	6	Beihang University	9
<i>CEUR Workshop Proceedings</i>	5	Liu, L.L.B.	6	Southwestern University of Finance and Economics	9
<i>Information Development</i>	5	Ooi, K.B.	6	Tsinghua University	9
<i>Information Switzerland</i>	5	Yuan, Y.	6	Universiti Tunku Abdul Rahman	9
<i>International Journal of Electronic Business</i>	5	Zhang, K.Z.K.	6	UCSI University	9
<i>Online Information Review</i>	5	Abareshi, A.	5	California State University, Fullerton	8
<i>Conference on Human Factors in Computing Systems Proceedings</i>	4	Abed, S.S.	5	Ministry of Education China	8
<i>Expert Systems with Applications</i>	4	Akram, U.	5	Kyung Hee University	8

Table A2.

Source(s): Appendix by authors

Appendix 3:

Revisiting the
social
commerce
paradigm

Country/territory	No. of papers	Funder	No. of papers
China	342	National Natural Science Foundation of China	148
United States	278	Fundamental Research Funds for the Central Universities, China	32
United Kingdom	132	Ministry of Science and Technology, Taiwan	23
Malaysia	126	National Office for Philosophy and Social Sciences, China	15
Taiwan	109	European Regional Development Fund	13
South Korea	105	Ministry of Education of the People's Republic of China	13
Indonesia	63	Ministry of Higher Education, Malaysia	11
Canada	59	Natural Science Foundation of Guangdong Province	11
India	56	National Research Foundation of Korea	10
Australia	54	European Social Fund	7
Hong Kong	54	Ministry of Education, Taiwan	7
Germany	42	Natural Science Foundation of Beijing Municipality	7
Spain	41	Universitas Indonesia	7
Saudi Arabia	40	Foundation for Innovative Research Groups of the National Natural Science Foundation of China	6
Thailand	33	Horizon 2020 Framework Programme, European Union	6
France	31	National Key Research and Development Program of China	6
Iran	31	China Postdoctoral Science Foundation	5
Pakistan	30	China Scholarship Council	5
Italy	29	Ministerio de Economía y Competitividad, Spain	5
Jordan	24	Natural Science Foundation of Anhui Province	5
Finland	19	Natural Sciences and Engineering Research Council of Canada	5
New Zealand	18	Research Grants Council, University Grants Committee	5
Qatar	16	Universiti Teknologi Malaysia	5
Turkey	16	Academy of Finland	4
Norway	12	City University of Hong Kong	4
Switzerland	12	Federación Española de Enfermedades Raras, Spain	4
Viet Nam	12	Humanities and Social Science Fund of Ministry of Education of China	4
Bangladesh	11	Lembaga Pengelola Dana Pendidikan, Indonesia	4
Singapore	11	Ministerio de Ciencia, Innovación y Universidades, Spain	4
United Arab Emirates	11	Ministry of Science, ICT, and Future Planning, South Korea	4

Source(s): Appendix by authors

Table A3.
Top 30 by country/
territory and funder

Appendix 4:

No.	Year	Document title	Authors	Journal title	Volume	Issue	Citation
1	2011	What drives social commerce: the role of social support and relationship quality	Liang T.-P., Ho Y.-T., Li Y.-W., Turban E.	<i>International Journal of Electronic Commerce</i>	16	2	828
2	2013	From e-commerce to social commerce: a close look at design features	Huang Z., Benyoucef M.	<i>Electronic Commerce Research and Applications</i>	12	4	754
3	2013	Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance	Kim S., Park H.	<i>International Journal of Information Management</i>	33	2	601
4	2011	Introduction to the special issue social commerce: a research framework for social commerce	Liang T.-P., Turban E.	<i>International Journal of Electronic Commerce</i>	16	2	584
5	2010	Deriving value from social commerce networks	Stephen A.T., Toubia O.	<i>Journal of Marketing Research</i>	47	2	574
6	2016	Social presence, trust, and social commerce purchase intention: an empirical research	Lu B., Fan W., Zhou M.	<i>Computers in Human Behavior</i>	56		535
7	2014	What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences	Zhang H., Lu Y., Gupta S., Zhao L.	<i>Information and Management</i>	51	8	472
8	2013	Transforming homo economicus into homo ludens: a field experiment on gamification in a utilitarian peer-to-peer trading service	Hamari J.	<i>Electronic Commerce Research and Applications</i>	12	4	470
9	2015	Social commerce constructs and consumer's intention to buy	Hajli N.	<i>International Journal of Information Management</i>	35	2	440
10	2012	The evolution of social commerce: the people, management, technology, and information dimensions	Wang C., Zhang P.	<i>Communications of the Association for Information Systems</i>	31	1	395
11	2014	The role of social support on relationship quality and social commerce	Hajli M.N.	<i>Technological Forecasting and Social Change</i>	87		330
12	2017	A social commerce investigation of the role of trust in a social networking site on purchase intentions	Hajli N., Sims J., Zadeh A.H., Richard M.-O.	<i>Journal of Business Research</i>	71		322
13	2011	Harnessing the influence of social proof in online shopping: the effect of electronic word of mouth on sales of digital microproducts	Amblee N., Bui T.	<i>International Journal of Electronic Commerce</i>	16	2	322

Table A4.
Top 50 most cited
publications

(continued)

No.	Year	Document title	Authors	Journal title	Volume	Issue	Citation
14	2016	Consumer behavior in social commerce: a literature review	Zhang K.Z.K., Benyoucef M.	<i>Decision Support Systems</i>	86		317
15	2015	Consumers' decisions in social commerce context: an empirical investigation	Chen J., Shen X.-L.	<i>Decision Support Systems</i>	79		303
16	2013	Intention to purchase on social commerce websites across cultures: a cross-regional study	Ng C.S.-P.	<i>Information and Management</i>	50	8	303
17	2013	Social commerce: a contingency framework for assessing marketing potential	Yadav M.S., de Valck K., Hennig-Thurau T., Hoffman D.L., Spann M.	<i>Journal of Interactive Marketing</i>	27	4	300
18	2013	Social commerce research: an integrated view	Zhou L., Zhang P., Zimmermann H.-D.	<i>Electronic Commerce Research and Applications</i>	12	2	297
19	2016	Exploring consumers' impulse buying behavior on social commerce platform: the role of parasocial interaction	Xiang L., Zheng X., Lee M.K.O., Zhao D.	<i>International Journal of Information Management</i>	36	3	263
20	2020	The role of live streaming in building consumer trust and engagement with social commerce sellers	Wongkitrungrueng A., Assarut N.	<i>Journal of Business Research</i>	117		257
21	2014	Understanding the paradigm shift to computational social science in the presence of big data	Chang R.M., Kauffman R.J., Kwon Y.	<i>Decision Support Systems</i>	63		248
22	2013	User experience in social commerce: in friends we trust	Shin D.-H.	<i>Behaviour and Information Technology</i>	32	1	234
23	2014	Do actions speak louder than voices? The signaling role of social information cues in influencing consumer purchase decisions	Cheung C.M.K., Xiao B.S., Liu L.L.B.	<i>Decision Support Systems</i>	65	C	229
24	2019	How live streaming influences purchase intentions in social commerce: an IT affordance perspective	Sun Y., Shao X., Li X., Guo Y., Nie K.	<i>Electronic Commerce Research and Applications</i>	37		227
25	2013	Can we get from liking to buying? Behavioral differences in hedonic and utilitarian Facebook usage	Pöyry E., Parvinen P., Malmivaara T.	<i>Electronic Commerce Research and Applications</i>	12	4	205
26	2011	Modeling consumer purchasing behavior in social shopping communities with clickstream data	Olbrich R., Holsing C.	<i>International Journal of Electronic Commerce</i>	16	2	201

(continued)

Table A4.

INTR

No.	Year	Document title	Authors	Journal title	Volume	Issue	Citation
27	2010	Antecedents and consequences of trust in online product recommendations an empirical study in social shopping	Hsiao K.-L., Lin J.C.-C., Wang X.-Y., Lu H.-P., Yu H.	<i>Online Information Review</i>	34	6	200
28	2016	Understanding social commerce: a systematic literature review and directions for further research	Busalim A.H., Hussin A.R.C.	<i>International Journal of Information Management</i>	36	6	195
29	2015	Social commerce: the transfer of power from sellers to buyers	Hajli N., Sims J.	<i>Technological Forecasting and Social Change International Journal of Information Management</i>	94		195
30	2017	Social interaction-based consumer decision-making model in social commerce: the role of word of mouth and observational learning	Wang Y., Yu C.	<i>International Journal of Information Management</i>	37	3	194
31	2016	Enhancing the flow experience of consumers in China through interpersonal interaction in social commerce	Liu H., Chu H., Huang Q., Chen X.	<i>Computers in Human Behavior</i>	58		193
32	2013	A research framework for social commerce adoption	Hajli M.	<i>Information Management and Computer Security Group Dynamics</i>	21	3	189
33	1997	Hope: an individual motive for social commerce	Snyder C.R., Cheavens J., Sympon S.C.	<i>Journal of Retailing and Consumer Services</i>	1	2	189
34	2018	Investigating the drivers for social commerce in social media platforms: importance of trust, social support and the platform perceived usage	Yahia I.B., Al-Neama N., Kerbache L.	<i>Journal of Electronic Commerce Research</i>	41		183
35	2012	Social comparison, social presence, and enjoyment in the acceptance of social shopping websites	Shen J.	<i>Administrative Science Quarterly</i>	13	3	174
36	2010	Markets, morals, and practices of trade: jurisdictional disputes in the U.S. commerce in cadavers	Anteby M.	<i>Current Issues in Tourism</i>	55	4	174
37	2017	Collaborative commerce in tourism: implications for research and industry	Sigala M.	<i>International Journal of Information Management</i>	20	4	170
38	2015	Effect of social commerce factors on user purchase behavior: an empirical investigation from renren.com	Bai Y., Yao Z., Dou Y.-F.	<i>International Journal of Electronic Commerce</i>	35	5	166
39	2011	The influence of personal and social-interactive engagement in social TV websites	Pagani M., Mirabello A.	<i>Decision Support Systems</i>	16	2	164
40	2016	Facebook C2C social commerce: a study of online impulse buying	Chen J.V., Su B.-C., Widjaja A.E.		83		160

Table A4.

(continued)

No.	Year	Document title	Authors	Journal title	Volume	Issue	Citation
41	2020	Consumers' decision-making process on social commerce platforms: online trust, perceived risk, and purchase intentions	Lăzăroiu G., Neguriță O., Grecu I., Grecu G., Mitran P.C.	<i>Frontiers in Psychology</i>	11		158
42	2017	Customers' purchase decision-making process in social commerce: a social learning perspective	Chen A., Lu Y., Wang B.	<i>International Journal of Information Management</i>	37	6	157
43	2017	The influence of perceived value on purchase intention in social commerce context	Gan C., Wang W.	<i>Internet Research</i>	27	4	153
44	2011	Social commerce: looking back and forward	Curty R.G., Zhang P.	<i>Proceedings of the ASIST Annual Meeting</i>	48		153
45	2017	Social commerce research: Definition, research themes, and the trends	Lin X., Li Y., Wang X.	<i>International Journal of Information Management</i>	37	3	147
46	2015	User preferences of social features on social commerce websites: an empirical study	Huang Z., Benyoucef M.	<i>Technological Forecasting and Social Change</i>	95		143
47	2018	Marketing mix, customer value, and customer loyalty in social commerce: a stimulus-organism-response perspective	Wu Y.-L., Li E.Y.	<i>Internet Research</i>	28	1	139
48	2013	Website features that gave rise to social commerce: a historical analysis	Gonçalves Curty R., Zhang P.	<i>Electronic Commerce Research and Applications</i>	12	4	135
49	2012	How consumer shopping orientation influences perceived crowding, excitement, and stress at the mall	Baker J., Wakefield K.L.	<i>Journal of the Academy of Marketing Science</i>	40	6	132
50	2010	Seniors' online communities: a quantitative content analysis	Nimrod G.	<i>Gerontologist</i>	50	3	132
Total							14006

Source(s): Appendix by authors

Table A4.

No.	Author	No. of papers	Citations	Institution	No. of papers	Citations
1	Liang T.-P.	4	1,006	Department of Information Systems, National Cheng-Chi University, Taiwan	2	973
2	Turban E.	3	1,006	University of California, Berkeley, United States	2	973
3	Benyoucef M.	8	954	National Sun Yat-Sen University, Taiwan	2	571
4	Hajli N.	21	737	Indian Institute of Management, Raipur, 492051, India	2	315
5	Zhang P.	7	726	School of Management, Wuhan University of Science and Technology, Wuhan, 430081, China	2	315
6	Huang Z.	6	690	School of Management, University of Science and Technology of China, 96 Jinzhai Road, Hefei, Anhui, 230026, China	2	251
7	Kim S.	4	428	Telfer School of Management, University of Ottawa, 55 Laurier East, Ottawa, ON K1N 6N5, Canada	2	251
8	Lu Y.	7	418	Newcastle University Business School, United Kingdom	3	250
9	Gupta S.	6	365	FHS St. Gallen, University of Applied Sciences, Switzerland	2	225
10	Zhang H.	4	331	Birkbeck, University of London, United Kingdom	4	193
11	Wang C.	5	308	Department of Interaction Science, Sungkyunkwan University, Seoul, South Korea	2	184
12	Fan W.	3	296	Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Kampar, Malaysia	4	150
13	Lu B.	3	296	Department of Information Management, Shu-Te University, Kaohsiung, Taiwan	2	148
14	Wang Y.	11	272	Department of Information Systems, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon Tong, Hong Kong	2	111
15	Hajli M.N.	3	249	School of Economics and Management, Beihang University, Beijing, 100191, China	2	111
16	Lee M.K.O.	6	244	Faculty of Business and Information Science, UCSI University, Kuala Lumpur, Malaysia	2	102
17	Zheng X.	5	214	Graduate Institute of Technology, Innovation and Intellectual Property Management, National Chengchi University, Taiwan	2	100
18	Shen X.-L.	3	209	School of Management, Huazhong University of Science and Technology, Wuhan, 430074, China	3	99

Table A5.
Science network mappings of the top 50 by authors and institutions

(continued)

No.	Author	No. of papers	Citations	Institution	No. of papers	Citations
19	Hajli M.	5	197	Department of Aviation and Supply Chain Management, Raymond J. Harbert College of Business, Auburn University, Auburn, al 36849, United States	2	89
20	Shen J.	9	195	College of Business and Entrepreneurship, University of Texas Rio Grande Valley, Edinburg, TX 78539, United States	2	80
21	Zhao D.	3	190	Department of Information Systems, City University of Hong Kong, Hong Kong	5	74
22	Holsing C.	4	164	Department of Information Systems, City University of Hong Kong, Hong Kong	3	69
23	Huang Q.	4	154	Department of Business Administration, National Taichung University of Science and Technology, Taichung, Taiwan	2	67
24	Lin X.	6	142	College of Economics and Management, South China Agricultural University, Guangzhou, 510642, China	2	61
25	Xiang L.	3	141	Department of Operations and Management Information Systems, Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, 50603, Malaysia	2	60
26	Shanmugam M.	7	137	School of Business, Kyung Hee University, Hoegi-Dong 1, Dongdaemoon-Gu, Seoul 130-701, South Korea	2	57
27	Wang X.	5	136	Newcastle University Business School, Newcastle University, United Kingdom	3	55
28	Leong L.-Y.	6	132	Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, 50603, Malaysia	2	52
29	Lee K.	5	129	Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Jalan Universiti, Bandar Barat, Kampar, Perak 31900, Malaysia	2	52
30	Busalim A.H.	4	128	College of Hotel and Tourism Management, Kyung Hee University, Seoul, South Korea	2	52
31	Chen X.	8	125	School of Management, Huazhong University of Science and Technology, Wuhan, China	3	50
32	Ooi K.-B.	4	122	Indian Institute of Management, Raipur, India	2	48
33	Turel O.	7	118	University of British Columbia, Canada	2	44

(continued)

Table A5.

INTR

No.	Author	No. of papers	Citations	Institution	No. of papers	Citations
34	Cheung C.M.K.	6	118	Telfer School of Management, University of Ottawa, Canada	2	41
35	Yao Z.	4	115	Degroote School of Business, McMaster University, Hamilton, Canada	2	40
36	Hew J.-J.	3	114	Department of Family and Consumer Sciences, University of Hawaii at Manoa, Honolulu, HI, United States	2	40
37	Liu L.	8	112	School of Business Administration, Southwestern University of Finance And Economics, Chengdu, China	2	39
38	Lin J.	4	108	School of Business, Monash University, Selangor Darul Ehsan, Malaysia	2	39
39	Hussin A.R.C.	9	106	Department of International Business Administration, Chinese Culture University, 55, Hwa-Kang Road, Yang-Ming-Shan, Taipei, 11114, Taiwan	2	38
40	Li Y.	10	105	Department of Transportation and Logistics Management, National Chiao Tung University, 4 F, No. 118, Section 1, Chung Hsiao W. Road, Taipei, 100, Taiwan	2	38
41	Jaafar N.I.	4	100	School of Management, University of Science and Technology of China, Hefei, China	6	35
42	Khani F.	3	92	Economics and Management School, Wuhan University, China	2	33
43	Hu X.	3	86	School of Information Management, Wuhan University, China	2	33
44	Yen D.C.	3	83	School of Management and Economics, Beijing Institute of Technology, China	2	33
45	Li X.	7	82	Allame Tabatabaee University, Iran	2	29
46	Wang B.	3	80	Azad University, Iran	2	29
47	Tajvidi M.	5	79	School of Management, Hefei University of Technology, Hefei, China	3	29
48	Li L.	4	79	Department of Information Systems, City University of Hong Kong, Kowloon, Hong Kong	3	26
49	Han H.	3	78	School of Management, Swansea University, Swansea, SA1 8EN, United Kingdom	2	24
50	Liana-Cabanillas F.	4	77	School of Economics and Management, Tongji University, Shanghai, China	2	23

Table A5. Source(s): Appendix by authors

Appendix 6:

Revisiting the
social
commerce
paradigm

No	Country	No. of papers	Citations	Keyword	Occurrences	Cited reference	Citations
1	United States	162	5,463	Social commerce	415	Huang, Z., Benyoucef, M., From e-commerce to social commerce: a close look at design features (2013) <i>Electronic Commerce Research and Applications</i> , 12 (4), pp. 246–259	113
2	China	145	2,902	Social commerces	279	Stephen, A.T., Toubia, O., Deriving value from social commerce networks (2010) <i>Journal of Marketing Research</i> , 47 (2), pp. 215–228	79
3	Taiwan	52	2,029	Commerce	246	Liang, T.P., Ho, Y.T., Li, Y.W., Turban, E., What drives social commerce: the role of social support and relationship quality (2011) <i>International Journal of Electronic Commerce</i> , 16 (2), pp. 69–90	68
4	United Kingdom	70	1,678	Electronic commerce	182	Fornell, C., Larcker, D.F., Evaluating structural equation models with unobservable variables and measurement error (1981) <i>Journal of Marketing Research</i> , 18 (1), pp. 39–50	63
5	Canada	32	1,159	Social networking (online)	176	Kim, S., Park, H., Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance (2013) <i>International Journal of Information Management</i> , 33 (2), pp. 318–332	53
6	South Korea	71	1,064	Sales	144	Liang, T.P., Turban, E., Introduction to the special issue social commerce: a research framework for social commerce (2011) <i>International Journal of Electronic Commerce</i> , 16 (2), pp. 5–14	53
7	France	11	783	Social media	136	Liang, T.P., Turban, E., introduction to the special issue social commerce: a research framework for social commerce (2011) <i>International Journal of Electronic Commerce</i> , 16 (2), pp. 5–14	53
8	Malaysia	77	663	Trust	93	Liang, T.P., Ho, Y.T., Li, Y.W., Turban, E., What drives social commerce: the role of social support and relationship quality (2011) <i>International Journal of Electronic Commerce</i> , 16 (2), pp. 69–90	52
9	India	25	624	Information Systems	79	Gefen, D., Karahanna, E., Straub, D.W., Trust, and TAM in online shopping: an integrated model (2003) <i>MIS Quarterly</i> , 27 (1), pp. 51–90	46
10	Hong Kong	31	551	Economic and social effects	73	Zhang, H., Lu, Y., Gupta, S., Zhao, L., What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences (2014) <i>Information and Management</i> , 51 (8), pp. 1017–1030	46
11	Germany	24	501	E-commerce	70	Hajli, N., Social commerce constructs and consumer's intention to buy (2015) <i>International Journal of Information Management</i> , 35 (2), pp. 183–191	46
12	Australia	27	473	Purchase intention	62	Zhou, L., Zhang, P., Zimmermann, H.D., Social commerce research: an integrated view (2013) <i>Electronic Commerce Research and Applications</i> , 12 (2), pp. 61–68	44

(continued)

Table A6.
Science network
mappings of the top 50
by countries and
keywords

INTR

No	Country	No. of papers	Citations	Keyword	Occurrences	Cited reference	Citations
13	Iran	17	317	Social shopping	58	Lu, B., Fan, W., Zhou, M., Social presence, trust, and social commerce purchase intention: an empirical research (2016) <i>Computers In Human Behavior</i> , 56, pp. 225–237	43
14	Spain	16	239	Purchasing	51	Olbrich, R., Holsing, C., Modeling consumer purchasing behavior in social shopping communities with clickstream data (2011) <i>International Journal of Electronic Commerce</i> , 16 (2), pp. 15–40	40
15	Switzerland	4	231	Consumer behavior	49	Kaplan, A.M., Haenlein, M., Users of the world, unite! the challenges and opportunities of social media (2010) <i>Business Horizons</i> , 53 (1), pp. 59–68	39
16	Indonesia	22	125	Social support	39	Hajli, N., Social commerce constructs and consumer's intention to buy (2015) <i>International Journal of Information Management</i> , 35 (2), pp. 183–191	38
17	Qatar	7	97	Decision making	38	Hajli, M.N., The role of social support on relationship quality and social commerce (2014) <i>Technological Forecasting and Social Change</i> , 87, pp. 17–27	37
18	Turkey	6	97	Surveys	36	Zhou, L., Zhang, P., Zimmermann, H.-D., Social commerce research: an integrated view (2013) <i>Electronic Commerce Research and Applications</i> , 12 (2), pp. 61–68	35
19	Norway	8	91	Websites	35	Gefen, D., Straub, D.W., Consumer trust in b2c e-commerce and the importance of social presence: experiments in e-products and e-services (2004) <i>Omega</i> , 32 (6), pp. 407–424	35
20	Saudi Arabia	19	89	Social networking sites	35	Kim, S., Park, H., Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance (2013) <i>International Journal of Information Management</i> , 33 (2), pp. 318–332	35
21	Greece	4	87	Facebook	35	Yadav, M.S., De Valck, K., Hennig-Thurau, T., Hoffman, D.L., Spann, M., Social commerce: a contingency framework for assessing marketing potential (2013) <i>Journal of Interactive Marketing</i> , 27 (4), pp. 311–323	33
22	Tunisia	2	78	Behavioral research	32	Hajli, N., Sims, J., Social commerce: the transfer of power from sellers to buyers (2015) <i>Technological Forecasting and Social Change</i> , 94, pp. 350–358	32
23	Sweden	3	74	S-commerce	32	Pavlou, P.A., Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model (2003) <i>International Journal of Electronic Commerce</i> , 7 (3), pp. 101–134	30
24	Thailand	18	74	Information use	30	Hajli, M., A Research framework for social commerce adoption (2013) <i>Information Management and Computer Security</i> , 21 (3), pp. 144–154	29
25	Oman	3	70	Social interactions	28	Curry, R.G., Zhang, P., Social commerce: looking back and forward (2011) <i>Proceedings of The American Society for Information Science and Technology</i> , 48 (1), pp. 1–10	27

Table A6.

(continued)

Revisiting the social commerce paradigm

No	Country	No. of papers	Citations	Keyword	Occurrences	Cited reference	Citations
26	Pakistan	8	63	Social networks	26	Amblee, N., Bui, T., Harnessing the influence of social proof in online shopping: the effect of electronic word of mouth on sales of digital micro products (2011) <i>International Journal of Electronic Commerce</i> , 16 (2), pp. 91–114	26
27	Kuwait	2	60	WEB 2.0	26	Lin, X., Li, Y., Wang, X., Social commerce research: definition, research themes, and the trends (2017) <i>International Journal of Information Management</i> , 37 (3), pp. 190–201	26
28	Chile	4	51	Human	25	Davis, F.D., Perceived usefulness, perceived ease of use, and user acceptance of information technology (1989) <i>MIS Quarterly</i> , 13 (3), pp. 319–340	26
29	Portugal	3	49	Online Shopping	25	Curty, R.G., Zhang, P., Website features that gave rise to social commerce: a historical analysis (2013) <i>Electronic Commerce Research and Applications</i> , 12 (4), pp. 260–279	25
30	Romania	4	43	Social presence	24	Wang, C., Zhang, P., The evolution of social commerce: the people, management, technology, and information dimensions (2012) <i>Communications of The Association for Information Systems</i> , 31 (5), pp. 105–127	25
31	Iceland	1	39	Marketing	23	Gefen, D., E-commerce: the role of familiarity and trust (2000) <i>Omega</i> , 28 (6), pp. 725–737	25
32	Jordan	10	36	Internet	20	Kim, D.J., Ferrin, D.L., Rao, H.R., A trust-based consumer decision-making model in electronic commerce: the role of trust, perceived risk, and their antecedents (2008) <i>Decision Support Systems</i> , 44 (2), pp. 544–564	24
33	Austria	4	35	Social aspects	18	Zhang, K.Z., Benyoucef, M., Consumer behavior in social commerce: a literature review (2016) <i>Decision Support Systems</i> , 86, pp. 95–108	23
34	Italy	8	32	Article	17	Parboteeah, D.V., Valacich, J.S., Wells, J.D., The influence of website characteristics on a consumer's urge to buy impulsively (2009) <i>Information Systems Research</i> , 20 (1), pp. 60–78	22
35	Macau	2	31	Purchase decision	17	Mcknight, D.H., Choudhury, V., Kacmar, C., Developing and validating trust measures for e-commerce: an integrative typology (2002) <i>Information Systems Research</i> , 13 (3), pp. 334–359	22
36	Japan	2	28	Technology Acceptance Model	17	Shen, J., Social comparison, social presence, and enjoyment in the acceptance of social shopping websites (2012) <i>Journal of Electronic Commerce Research</i> , 13 (3), pp. 198–212	22
37	Finland	6	25	Perceived usefulness	16	Ng, C.S.P., Intention to purchase on social commerce websites across cultures: a cross-regional study (2013) <i>Information and Management</i> , 50 (8), pp. 609–620	21
38	Ecuador	1	18	Social network	15	Hassanein, K., Head, M., Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping (2007) <i>International Journal of Human-Computer Studies</i> , 65 (8), pp. 689–708	21

(continued)

Table A6.

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No	Country	No. of papers	Citations	Keyword	Occurrences	Cited reference	Citations
39	Netherlands	2	14	World Wide Web	15	Zhang, K.Z.K., Benyoucef, M., Consumer behavior in social commerce: a literature review (2016) <i>Decision Support Systems</i> , 86, pp. 95–108	21
40	South Africa	2	14	eWoM	15	Podsakoff, P.M., Mackenzie, S.B., Lee, J.Y., Podsakoff, N.P., Common method biases in behavioral research: a critical review of the literature and recommended remedies (2003) <i>Journal of Applied Psychology</i> , 88 (5), pp. 879–903	20
41	New Zealand	9	12	Least squares approximations	14	Hajli, N., Sims, J., Zadeh, A.H., Richard, M.O., A social commerce investigation of the role of trust in a social networking site on purchase intentions (2017) <i>Journal of Business Research</i> , 71, pp. 133–141	20
42	Iraq	2	9	Research models	14	Wang, Y., Yu, C., Social interaction-based consumer decision-making model in social commerce: the role of word of mouth and observational learning (2017) <i>International Journal of Information Management</i> , 37 (3), pp. 179–189	20
43	Bangladesh	4	6	Word of mouth	14	Arnold, M.J., Reynolds, K.E., Hedonic shopping motivations (2003) <i>Journal of Retailing</i> , 79 (2), pp. 77–95	20
44	Singapore	3	6	TAM	14	Anderson, J.C., Gerbing, D.W., Structural equation modeling in practice: a review and recommended two-step approach (1988) <i>Psychological Bulletin</i> , 103 (3), pp. 411–423	19
45	Denmark	1	6	Information management	14	Mayer, R.C., Davis, J.H., Schoorman, F.D., An integrative model of organizational trust (1995) <i>Academy of Management Review</i> , 20 (3), pp. 709–734	19
46	Israel	1	5	Human computer interaction	14	Shin, D.-H., User experience in social commerce: in friends we trust (2013) <i>Behaviour and Information Technology</i> , 32 (1), pp. 52–67	18
47	Russian Federation	1	4	Consumption behavior	14	Stewart, K.J., Trust transfer on the World Wide Web (2003) <i>Organization Science</i> , 14 (1), pp. 5–17	18
48	Nigeria	3	3	Motivation	14	Morgan, R.M., Hunt, S.D., The commitment-trust theory of relationship marketing (1994) <i>Journal of Marketing</i> , 58 (3), pp. 20–38	18
49	Sri Lanka	1	3	Social capital	14	Busalim, A.H., Hussin, A.R.C., Understanding social commerce: a systematic literature review and directions for further research (2016) <i>International Journal of Information Management</i> , 36 (6), pp. 1075–1088	18
50	Mexico	1	2	Structural equation modeling	13	Ng, C.S.P., Intention to purchase on social commerce websites across cultures: a cross-regional study (2013) <i>Information and Management</i> , 50 (8), pp. 609–620	18

Table A6.

Source(s): Appendix by authors

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