

A SYSTEMATIC EXAMINATION AND DATA SYNTHESIS OF SOCIAL BUSINESS

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ABSTRACT

Knowledge from fields as diverse as psychology, sociology, computer science, and marketing are all brought to bear on the field of social commerce. Its creation was difficult because of the wide variety of disciplines required, from mathematical patterns to marketing management. In this research, we systematically examine the literature on social commerce by synthesising 407 articles published in academic journals between 2006 and 2017. There are three main concerns at the heart of this investigation: (1) What is the state of the art in social commerce studies? What kinds of studies have been conducted on social commerce, specifically? (2) What are some promising avenues for further study in the field of social commerce? We address this issue by providing a comprehensive taxonomy of the many dimensions of social commerce, including definitions, distinctions, kinds and technologies, problems and advantages, models and frameworks. To answer the second question, we used many approaches. Finally, we provide recommendations for further study, hoping that our work will serve as a guide to navigating the social commerce literature.

1. INTRODUCTION

The growth of e-commerce coincided with the emergence of social commerce. It was first presented by Yahoo in 2005, and since then, prominent online firms like Amazon, Groupon, and eBay have used consumer interaction as a strategy to increase the value of their products and services (Wang and Zhang, 2012). The phrase "social commerce" wasn't initially used in a scholarly journal until 2006. In 2009, Flowers.com created the first Facebook shop, marking the official beginning of social commerce (Busalim and Hussin, 2016). In the second quarter of 2016, the average value of social media referrals for online purchases was \$89, according to Statista (2017). According to Statista (2016),

business social networks are expected to bring in over \$3 billion in revenue globally by 2019. Academic studies of social commerce are still in their infancy despite their fast development and significant significance (Huang and Benyoucef, 2014). There has to be a standardised approach to categorising participants' work in social commerce studies. However, there hasn't been much of an attempt to consolidate social commerce studies into one comprehensive body of knowledge (Shanmugam & Jusoh, 2014). To address this knowledge gap, we suggest a research agenda based on a theoretical taxonomy of social commerce and a synthesis of existing research on the topic. We also suggest a methodical approach by using a synthesis

and taxonomy tailored to the study of social commerce (Koufteros, 2015).

We were able to get a more thorough comprehension of social commerce by synthesising our findings using a broad perspective. Clarity and pinpointing the location of each domain on an integrative map of social commerce may be achieved by a synthesis from as many domains as feasible (Williams, 2014). Therefore, this article makes a contribution to the literature on social commerce by synthesising previous studies to give a thorough and organised inventory of aspects, including study subject, theories, research methodologies, and result measures.

2. IDENTIFICATION AND COLLECTION OF THE LITERATURE

Two different approaches have been utilised to gather scholarly papers for systematic and organised literature reviews. The paper "Electronic Word of Mouth (e-WOM) Communication: A Literature Review" (Cheung and Thadani, 2012) is an example of this kind of research. Using keywords, the authors chose a small subset of academic databases to explore further. The next step was to double-check prestigious periodicals for omissions of potentially relevant items. The alternative strategy is to use a traditional literature review to double-check and confirm the original collection of articles for relevance (Webster and Watson, 2002).

Collecting Information 2.1

We looked for studies in the years 2006-2017. Books, theses, periodicals, conference

proceedings, and academic journals were the primary sources for this compilation of papers. We got them from places like Emerald and Elsevier and Wiley and Springer and EBSCOhost and Scopus and Science Direct and Inder science and Google Scholar and IEEE Xplore and ProQuest and Sage. Articles on various facets of social commerce were first accessible via the digital libraries Web of Knowledge, Ingenio (university digital libraries), ACM Digital Library, and AIS Electronic Library. Our search of the scholarly literature so far has been comprehensive. Publications were culled that made use of the terms "social commerce" and "s-commerce."

Each article's title, abstract, topic words (if applicable), and entire text were reviewed by hand to ensure they were all relevant to our study questions before being included. The information was transferred to a relational database and processed there. After eliminating all possible duplicates, we were left with 407. Publications on social commerce are shown graphically in Fig. 1.

Social commerce was first used in print around 2006 (Rubel, 2006). The statistic depicts a rising trend in the number of publications overall between 2006 and 2017. This growing interest among academics provides more evidence that the field of social commerce is maturing and expanding.

Methodology of Searching

Books, theses, periodicals, conference proceedings, and scholarly journals published since 2006 were manually searched. Table 1 displays the chosen

publications and meetings. Top academic publications and conferences were chosen because of their established credibility in the field and their relevance to the study of social commerce.

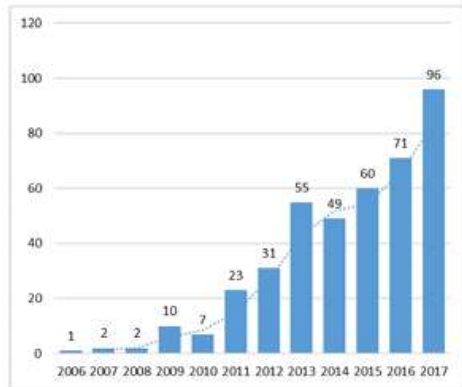


Fig. 1. Social commerce contribution trend from 2006 to 2017.

Table 1

Top journals, conferences related to social commerce publications:

Journal/Conference	Number
<i>Proceedings of Pacific Asia Conference on Information Systems</i>	20
<i>Proceedings of Americas Conference on Information Systems</i>	16
<i>International Journal of Information Management</i>	16
<i>Electronic Commerce Research and Applications</i>	14
<i>Proceedings of Annual Hawaii International Conference on System Sciences</i>	10
<i>Proceedings of International Conference on Information Systems</i>	10
<i>Proceedings of International Conference on Electronic Commerce</i>	8
<i>International Journal of Electronic Commerce</i>	6
<i>Technological Forecasting and Social Change</i>	6
<i>Decision Support Systems</i>	6
<i>Computers in Human Behavior</i>	5
<i>Proceedings of Australasian Conference on Information Systems</i>	5
<i>Information Journal</i>	4
<i>Internet Research</i>	4
<i>Information and Management</i>	4
<i>Journal of Business Research</i>	4
<i>Proceedings of European Conference on Information Systems</i>	3
<i>Proceedings of Wuhan International Conference on e-Business</i>	3
<i>Proceedings of Special Interest Group on Human-Computer Interaction</i>	3
<i>Digital Intelligence Today</i>	3
<i>Journal of Theoretical and Applied Electronic Commerce Research</i>	3
<i>Information Sciences</i>	3

2.1 Eligibility requirements and prohibitions

The goal in selecting social commerce and s-commerce as keywords was to draw attention to works that had direct bearing on the topic. Other terminology associated with social commerce (such as social shopping, collaborative commerce, c-commerce,

collaborative shopping, and social media marketing) have traditionally been mutually exclusive. Furthermore, we only examined media sources whose primary content is available in English. This review did not include multiple publications of the same research that appeared in different journals.

3. DATA SYNTHESIS

Each problem may be located on an overarching map of social commerce thanks to synthesis (Williams, 2014). At this point, you'll be tasked with coming up with extraction forms to properly document the data collected from your chosen articles. Based on the social commerce research framework suggested by Liang and Turban (2011), we used Mendeley and Microsoft Excel spreadsheets to consolidate relevant information across many dimensions (research topic, theories, research techniques, and result measures). Later, we'll go over the research methodologies in more depth. During the data-gathering phase, we will first concentrate on the study topic, hypotheses, and outcome metrics.

3.1. Topics Studied

To comprehend the social commerce knowledge landscape, it is helpful to have a common thread running across the studies, or a research subject (Liang and Turban, 2011). User behaviour, company performance, network analysis, adoption strategy, business model, corporate strategies, website design, social process, security, and privacy are all topics covered in this research. In addition, we created the sub-category overview for items that don't

fit well into any other category but still want to provide a general overview. By classifying 407 publications, Fig. 2 provides an overview of the study subjects.

With 199 publications, 48.9% of previous social commerce research are devoted to the topic of user behaviour. The second common thread is a general introduction to the topic, which was used by 11.6% of the research. About 40% of studies take a business stance as opposed to a user-centric one; these studies cover topics such as the business model (11.1%), adoption strategy (7.1%), enterprise strategies (5.9%), website design (4.4%), firm performance (3.1%), and network analysis (3.2%). Eleven and ten publications, respectively, are devoted to the topics of security and privacy policy (2.70%) and social process (2.5%).

3.2 Foundational Concepts



Fig. 2. Distribution of social commerce articles by research theme.

4. RESEARCH QUESTIONS RESULTS

Where can I get up-to-date research on social commerce? (RQ1)

Because of the complexity of the IS field, taxonomies are often used as a means of making sense of the groundwork of research in the form of a shared language (Nickerson et al., 2010). A taxonomy has been established in the field of information systems to examine new areas of research (Shang et al., 2015). It offers concise explanations and groups them into categories without losing the important information. Emamjome et al. (2014), for instance, suggested a taxonomy of social media in information systems and in connection to the commercial usage of social media as a means of developing theories in the social media ecosystem.

We use a systematic approach to develop a taxonomy that distinguishes the various aspects of social commerce (definitions, differences, types and technologies, challenges and benefits, models and frameworks) to help readers systematically and comprehensively understand the current state of social commerce study, as shown in Fig. 5.

The concept of "social commerce" is still in its infancy, hence its definition and use vary. Others use terminology like "social shopping," "collaborative commerce and shopping," and "social media marketing" interchangeably with "s-commerce" (Curty and Zhang, 2013). Due to the interdisciplinary nature of social commerce, several definitions have been presented. We give a compilation of the many definitions of social trade that have been proposed elsewhere. (Check out Appendix 1 for further info.)

Generally speaking, the term "social media" refers to four distinct areas: social activities (such as social interactions, word-of-mouth, and user-generated content); social media (such as social networking sites); e-commerce; and Web 2.0. The study of social trade may be broken down into three distinct approaches: (1) It consists of two parts; for example, social commerce is often understood to be the combination of social media and e-commerce (see, for example, Hsiao et al., 2010; Kim and Park, 2013; Wang and Zhang, 2012). Social commerce is a subcategory of e-commerce that makes use of social media to encourage social interactions and improve the online purchasing experience (Marsden, 2010; Marsden and Chaney, 2012; Stephen and Toubia, 2010). Scholars define social commerce as an online commercial application that leverages Web 2.0 technologies and social media to facilitate user-generated content and social interactions (e.g., Esmaili et al., 2015; Huang and Benyoucef, 2013) and list four other components of social commerce. Additionally, Cohen (2011) has compiled 19 distinct definitions of social commerce from professionals in the field.

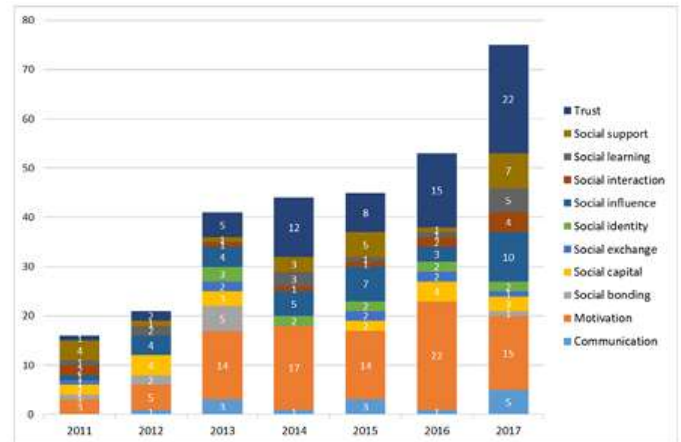


Fig. 3. The number of articles by underlying theories over time.

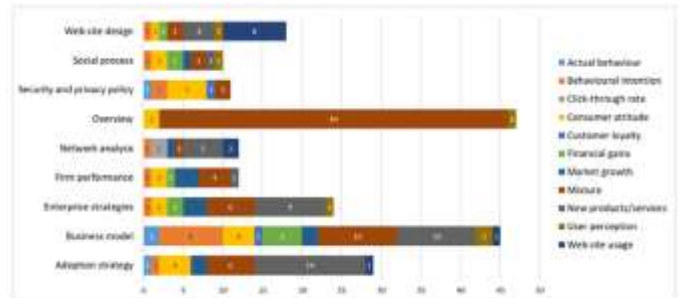


Fig. 4. Distribution of research issues by research issues.

Distinctions Between Online Shopping and Social Shopping 4.1.1

We agree with Rad and Benyoucef (2010) that social commerce is distinct from social shopping and e-commerce in terms of its focus, company objectives, customer connections, and system interactions.

Comparing social shopping to social trade. 4.1.1.1. Research has shown that social shopping is closely related to, and often even synonymous with, social commerce (Grange and Benbasat, 2013). According to Santos and Gonçalves (2012), social shopping is "an approach to e-commerce built on social networks in which consumers' activities are influenced by the activities of their friends." When it comes to social connections and purchases, social commerce

provides the networks for both parties involved. Therefore, it is important to recognise that social commerce encompasses more than just social buying (Curty & Zhang, 2013).

In particular, although some people (such as Wang and Zhang 2012) other people (such as Marsden 2010) consider social shopping to be a subset of social commerce, others (such as Stephen and Toubia 2010) do not. On social commerce sites, such as eBay and Squidoo, consumers can act as sellers or curators of online stores, whereas Stephen and Toubia (2010) agree that social shopping only connects customers who generate content (such as by writing product reviews on websites like Epinions. com and Yelp.com). In addition, Shen (2012) distinguished between the two categories, arguing that social commerce is more relevant to the long-term strategic choices of an online retailer. Social shopping, however, is generally understood to be a kind of social commerce (Topaloglu, 2013).

4.1.1.2. The dissimilarities between online and social shopping. There is a common sense opinion that social commerce is distinct from e-commerce, regardless of the distinctions in comparable terminologies used within the area of social commerce (Zhong, 2012). Kim and Park (2013), H. Li et al. (2014), Ling and Husain (2013), Salvatori and Marcantoni (2015), and Chen et al. (2014), Huang and Benyoucef (2013), Kucukcay (2014), Rad and Benyoucef (2010), and Salvatori and Marcantoni (2015) are just a few of the researchers who classify social commerce as either a subset of e-commerce or an evolution or innovation related to e commerce.

Business objectives, client relationship, and system interaction are three areas where e-commerce and social commerce diverge (Alshibly, 2014; Huang and Benyoucef, 2013). Business models, value generation, customer connection and communication, system interactions, design, and technological platforms are only some of the ways in which social commerce diverges from e-commerce, as outlined by Baghdadi (2013). In a similar vein, Lee et al. (2012) highlighted the distinctions between the two groups with regards to the central idea, the motivation for change, the rationality criterion, the commerce platform, the transaction mechanism, and the primary agent.

The customers in social commerce may easily switch roles from buyers to sellers (Jang et al., 2013), which is the main distinction between social commerce and traditional e-commerce. Traditional e-



Fig. 5. Social Commerce Definitions.

commerce aims to maximise efficiency by providing superior features like product vividness and personalised shopping experiences, while social commerce places a premium on social activity like collaborations of the online shopping experience and supporting social interactions (Liang and Turban, 2011).

When doing business online, clients never collaborate with one another and always behave autonomously (Kim and Srivastava, 2007). However, social commerce utilises internet networks that foster social connection to boost consumer discussion. Social commerce offers some social and interactive applications that allow customers to express their opinions and also share useful information with others (customers and businesses), whereas traditional e-commerce typically allows for one-way browsing, where information from customers is rarely sent back to the business or shared among customers. To wit: (Gibreel et al., 2015)

4.1.2 Forms and Tools for Social Commerce

The many forms of social trade (4.1.2.1). There is currently no agreed-upon method for classifying different forms of social trade (Lee et al., 2012). Table 2 summarises the many forms of social commerce that have been discussed extensively in the academic and professional literature. Flash sale, group purchase, social shopping, social shopping apps, purchase sharing, and personal shopper are the six categories of social commerce outlined by Lee et al. (2012). Similarly, other writers split social commerce into a different number of sorts

based on the classification of six types (Indvik, 2013; Jang et al., 2013; Kim et al., 2014; Lee, 2015).

Using theories of interactivity and social transparency, Almahdi et al. (2015) developed a preliminary typology of social commerce that divides sites into three groups: those low in both interactivity and social transparency; those high in interactivity but low in social transparency; and those high in both. In Asia, there is a prevalent practise of classifying social commerce characteristics into one of three categories. Social link commerce is the first, followed by group buying and linking online and offline commerce (Hwang et al., 2014; Kim, 2015).

Technologies for social commerce are discussed in Section 4.1.2.2. One of the most important goals of establishing social commerce is the development of relevant technologies. It is also emphasised that technology facilitate and even drive social commerce. Web 2.0, cloud computing, and service-oriented architecture (SOA) are only some of the social commerce technologies to which Baghdadi (2013) mentioned. To actualize social connections, he made use of Enterprise Social Interaction Manager (ESIM) (Baghdadi, 2013). Later, from a commercial and IT point of view, Baghdadi (2016) offered a complete framework for moulding social commerce. Web 2.0, cloud computing, service-oriented architecture, big data, mobile computing, and global positioning systems are all useful technologies for constructing a social commerce infrastructure and platform.

Comparing Drawbacks and Advantages 4.1.3

Although there are numerous advantages to social commerce for businesses, implementing it may create certain risks and challenges.

The Obstacles, or 4.1.3.1. Many obstacles to constructing social commerce have been shown by this application, from coordinating with various sorts of users to merging with an already established social website with vast quantities of interactions and contents (Lai, 2010).

Command of the massive data and infrastructure. Since November 2015, Statista has maintained a webpage where users may access data on the most popular networks throughout the globe. Example: Facebook was the first social media platform to reach 1 billion registered users (equivalent to around 1.55 billion now), and Instagram had over 400 million active users. In addition, there will reportedly be over 2.5 billion people using social networks worldwide by 2018 (Baghdadi, 2016). • Trust. Users' profiles and demographic data are the property of the social networking sites after they have signed up. The corporate world may benefit from these details (for instance, by analysing them to develop successful advertising tactics). Businesses must ensure the safety of their users' data if they want to earn their confidence (Farivar et al., 2016).

- Cohesion. Add corporate social interactions to the current system while keeping in mind content management,

security, performance, interoperability, and participant support (Tian et al., 2016) is a tall order for any social commerce application. • Ownership of all user-created materials. Reviews written by previous buyers of a product do have a role in the purchasing decisions of potential buyers. Maintaining a good reputation requires consistent, positive feedback from customers. However, the company's reputation would be ruined if too many negative reviews were provided by former customers (Janze and Siering, 2015).

- Confidence in one's own ideas. One company may decide to implement some of the suggestions made by users into their own operations. The firm may benefit from more revenue, decreased expenses, and happier clients as a result of this. IBM's IdeaJam software, for instance, provides a means of gathering user feedback. While this is great for business, it might cause problems with intellectual property copyrights (Turban et al., 2010).

- The troublesome nature of evaluating profitability. The monetary gains produced by social trade are difficult to evaluate. After using social commerce strategies, one firm had a billion unique visits to their website. Not all site visitors may be expected to make a purchase (Ling and Husain, 2013).

Thus, managing the internal adoption of social commerce (due to resistive and sceptical attitudes) and maintaining a relevant and timely media stream (Yuan, 2013) are time-consuming and expensive tasks that must be undertaken by businesses

if they want to reap the benefits of social commerce.

Table 2
Social commerce types.

Types	Definitions	Examples
Flash sale	Products are sold online offering of high discounts within a limited time.	"Vente-Privée" is a private shopping site which provides a maximum of 70% discount, and the sales period for certain products is 2-4 days. https://secure.uk.vente-privee.com/authentication/portal/EN
Group purchase	A discounted product or service becomes available only if a certain number of people sign up for the offer within a limited time.	"Groupon"
Social Shopping	It allows users to share information among consumers in online shopping sites.	https://www.groupon.co.uk/ "Polyvore" plays the role of 'portal' that provides a variety of information for fashion shoppers. http://www.polyvore.com/
Social Shopping Apps	Consumers can share their shopping experience from online to offline through these apps.	"Shopkick" is an app which rewards consumers "kick" when they visit stores or scan products barcodes. These kicks can be exchanged with the gift cards. https://www.shopkick.com/
Purchase Sharing	By recording consumers' purchase information through credit card usage, it provides the information to businesses with an analyzed marketing tool and the purchasing consumers with monetary rewards.	"Upserve" is a service that sells payments, analytics, and marketing tools to local merchants. https://upsolve.com/
Sharing economy	It allows individuals to exchange goods and services directly.	Owners rent out personal assets that they are not using, including cars, housing, and household items.
Social network platform sales	Users can directly purchase products on social networking sites such as Facebook.	"Buy it" button will be used by Pinterest. https://about.pinterest.com/es/buy-it
Participatory commerce	Consumers become active participants in the production process, working collaboratively to design products.	Nike now allows consumers to design their own shoes.

Social-commerce research models, section 4.1.3

Algorithmic models and theory-focused models are the two main types of research models used to verify hypotheses or discover the relationship between impact factors (trust, culture, service quality, social support) and social commerce performance (consumer engagement, customer satisfaction, behavioural intention).

Models created using algorithms. 4.1.4.1. Authors have developed several algorithm-based models for a wide range of applications, including recommendation, co-creation, decision-making, and review analysis. The most common uses of algorithm-based models and the related algorithms utilised in each research are listed in Table 3.

Among the many uses for algorithms in social commerce research, the most common are for analysing consumers' online behaviour (n=7), measuring users' usability

(n=7), and recommending products (n=5). In addition, we analysed the scholarly contributions regarding the employed research algorithm, and found that the collaborative filtering algorithm (n = 4), the text mining algorithm (n = 2), and the analytic hierarchy process (n = 2) are the most often utilised algorithms.

A novel social hybrid algorithm for making online product suggestions was introduced by Hooda et al. in 2014. Together, the similarity matrices from the user-item rating network and the friend's network are used in their social hybrid product recommender algorithm. Stephen and Toubia (2009) conducted an empirical comparison of many edge generation methods that may account for the establishment of network power-law degree distribution. These mechanisms included preferential attachment and triadic closure. Web site features' impacts on usability and income were analysed using the apriori approach by Holsing and

Schultz(2013), yielding useful information for both researchers and management.

Table 3
The literature on the algorithm model.

Studies	Purposes					Algorithm Models
	PR	UM	RT	DMS	ACOB	
Jiang et al. (2014)				x		Evolutionary game
Holsing and Schultz (2013)		x	x			Apriori algorithm
Y.M. Li et al. (2014)	x					Jaccard similarity measure
Liu et al. (2012)					x	K-means algorithm
Todri and Adamopoulos (2014)					x	Text mining algorithm
Hooda et al. (2014)	x					Collaborative filtering
Xu (2014)	x				x	Eigenvector centrality
Zheng et al. (2013)					x	Online review quality mining
Ronca et al. (2013)	x					Collaborative filtering
Consoli (2009)				x	x	Text mining algorithm
Lee (2013)			x			Linear regression
Xiao et al. (2015)				x	x	Layout algorithm
Cho et al. (2013)		x				Collaborative filtering
Yang et al. (2012)					x	Mutual top-K filtering and thresholding
Wu et al. (2014)		x				Analytic hierarchy process
Kim (2014)		x				Static Nash equilibrium
Stephen and Toubia (2009)				x		Power-law degree distribution
Jing (2014)	x					Analytic hierarchy process
Stephen and Toubia (2010)			x			Autoregressive distributed lag
Kim and Lee (2015)		x				Voluntary ad dissemination
Noorian et al. (2014)		x				SocialTrust mechanism
Cho (2013)		x				Collaborative filtering

Notes: PR: Product recommendation; UM: Usability measurement; RT: Revenue tracking; DMS: Decision-making support; ACOB: Analyzing consumer online

Theoretical models, section 4.1.4.2. Because sophisticated theories that describe people's behaviour have practical repercussions, a lot of academic effort has gone into constructing and theorising about the link between social commerce involvement. Consumers' online preferences, for instance, have been explained using the theory of planned behaviour model (Shanmugam et al., 2015). Research literature shows a

correlation between independent variables (such as behavioural intention, consumer attitude, and actual behaviour) and underlying theories (such as motivation, trust, and social support) as shown in Fig. 6.

We explain the discovered dependent factors in detail to help you make sense of the data. Different goals and actions indicate which theoretical models will be adopted (Friedrich, 2015). The vast majority of research (n = 138) has focused on customers' intent to act. Thirty-four research looked at customers' mentalities, thirty-two at the novel offerings made possible by social commerce, and twenty-six at their actual actions. Only three articles dealt with the topic of click through rate.

Both the theory of motivation and the theory of trust have been shown to have significant roles in the studied dependent variables. Utilitarian (e.g., perceived effectiveness, usefulness, and ease of use of a social commerce website) and hedonic (e.g., perceived enjoyment of using the website) motivations may determine a consumer's intention to shop and intention to spread e-WOM in the context of social commerce, according to motivation theory (Zhang and Benyoucef, 2016). It's the primary focus of the majority of research on user perception (n = 6), new product and service adoption (n = 8), and behavioural intention (n = 46). Understanding social behaviour via the lens of trust theory may help researchers address challenges in the field of social commerce (Liang and Turban, 2011). Both consumer attitudes (n = 16) and behavioural intentions (n = 37) seem to be affected.

4.1.5. Social-Commerce-Based Infrastructures

"helpful in organising a complex subject, identifying the relationships between the parts, and revealing the areas where further developments will be required" (Watson et al., 1991) is how a formal framework is described. Therefore, a framework is required to lead the adoption of social commerce with regards to technologies and architectures, process design, technical needs, and the realisation of a platform that supports corporate social interactions while also accounting for their inherent problems (Baghdadi, 2016). The three major types of social commerce frameworks developed by researchers are categorised in Table 4 below.

To categorise, 1. Liang and Turban (2011) examined social commerce using a paradigm consisting of six components: research topics, research methodologies, results, social media, and commercial activities. Social media network marketing; corporate social marketing; technology, support, and tools; and management and organisation make up the four key areas they identified for social commerce operations.

Second, Zhang and Benjamin's (2007) 1-Model for categorising information consists of four main parts: humans, data, hardware, and social structures. Using a similar four-part (people, information, technology, and management) paradigm as the I-Model, Wang and Zhang (2012) summed up the organization/society component under the management. Business, technology, people,

and data are all key to Zhou et al.'s (2013) suggested study paradigm for an integrated perspective on social commerce.

Thirdly, Huang and Benyoucef (2013), who were researching the design of social commerce, offered a conceptual framework with four layers: the person, the community, the discourse, and the commerce. They advocated layering the elements of social commerce, with some shared across all of them, and others unique to each. A new framework with an additional management layer was developed by Wu et al. (2015) by combining this one with an information model.

Finally, some researchers have suggested much simpler frameworks consisting of only three parts. For instance, Leitner and Grechenig (2009) described their framework's three major elements as shoppers, stores, and wares. Additionally, Curty and Zhang (2013) created a conceptual framework to capture the transactional, relational, and social components of e-commerce.

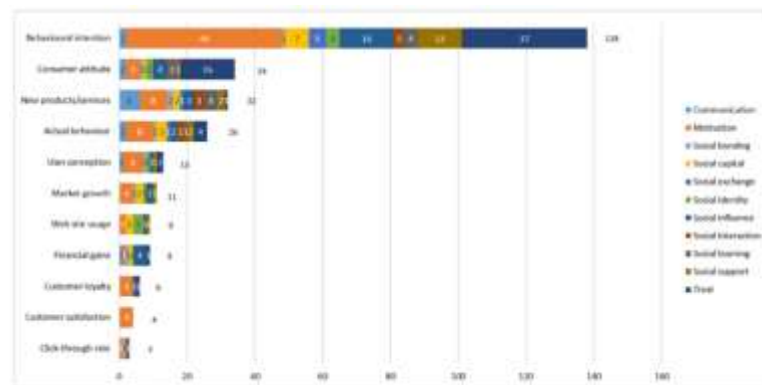


Fig. 6. Distribution of outcome measures by theory model.

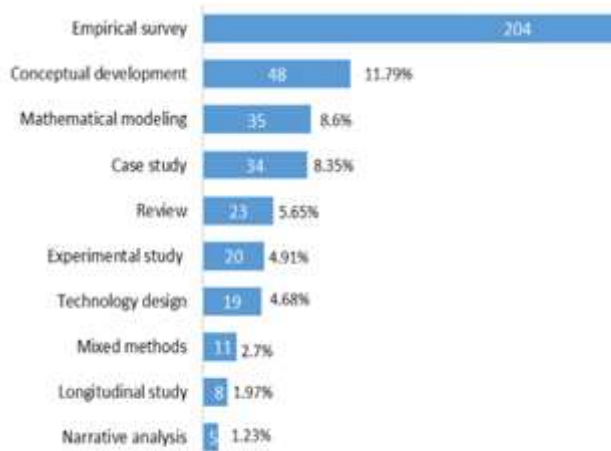


Fig. 7. Number of articles by research methods.

Table 4
Social commerce frameworks.

Studies	Dimensions (or components) of Social Commerce Frameworks					
<i>Classification 1</i>	Research themes	Research methods	Underlying theories	Outcomes	Social media	commercial activities
Liang and Turban (2011)	x	x	x	x	x	x
Turban et al. (2010)					x	x
Yadav et al. (2013)			x	x		
<i>Classification 2</i>	People	Information	Technology	Organizational	Management	Business
Zhang and Benjamin (2007)	x	x	x	x		
Wang and Zhang (2012)	x	x	x		x	
Zhou et al. (2013)	x	x	x			x
<i>Classification 3</i>	Individual	Community	Conversation	Commerce	Management	Content
Huang and Benyoucef (2013)	x	x	x	x		
Wu et al. (2015)	x	x	x	x	x	
Baghdadi (2016)	x	x	x			x

There have been many proposed mechanisms for designing algorithms, such as the merchant-driven collaborative decision model, Cox's proportional hazard regression model, the network closure model, an adaptive trust-oriented incentive mechanism, context-aware recommendation systems, and the FIRE (from "fides" and "reputation") atypical model that solved trust and reputation problems. Algorithmic models for NLP and a generic architecture for text engineering (GATE) have also made use of software. Statistical methods such as structural equation modelling (SEM), which includes partial least squares (PLS), linear

structure relations (LISREL), and covariance-based structural equation modelling (CBSEM); negative binomial regression (NBR); multiple linear regression (MLR); and principle component analysis (PCA) are used to test hypotheses in the theory-based models. Scholars often use programmes like SPSS, AMOS (analysis of moment structures) 7.0, Varimax, Lisrel 9.1, and PLS-Graph 3.01060 in addition to the more general SmartPLS 2.0 and PLS-Viewer.

The choice of methods depends on a number of factors, including the specifics of the issue at hand, the information at hand, the researcher's familiarity with current

methods, the willingness to experiment with new tools and methods, and the congruence between the analysis of prior works and the methods in question. In addition, the data is analysed with the use of computer programming tools, software packages, and spreadsheets.

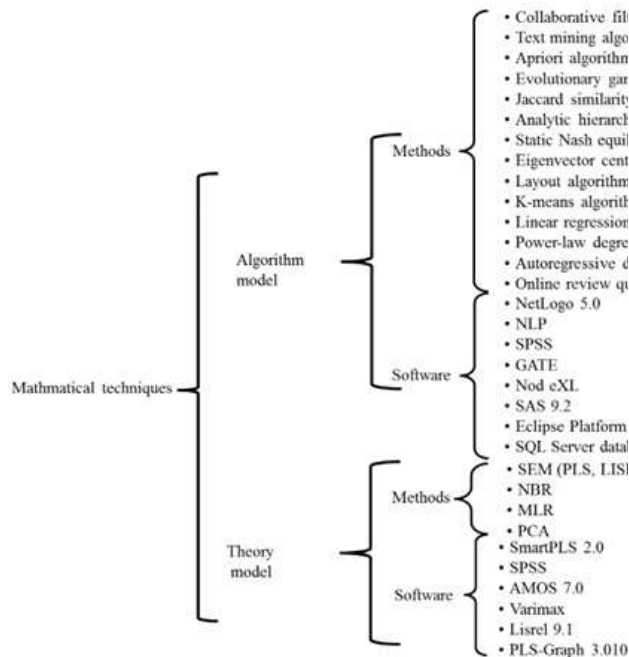


Fig. 8. Mathematical techniques used for social commerce.

Future directions for research into social commerce 4.3. (RQ3)

We identify innovative topics for future study based on the analysis of the systematic review work that may give intriguing insights into the subject but have not been explored as of now. Our study also yields several unique research issues that might be pursued in the future, complementing the ones already addressed by previous contributions. (Check out Table 5)

Implications for the Defining of Social Commerce (4.3.1) From academic sources,

we compiled a total of 22 definitions of social commerce.

Although there have been several attempts to define social commerce, the definition and scope of this phenomenon remain unclear in the literature (Baghdadi, 2016). When reviewing the current status of research on social commerce, Liang and Turban (2011, p. 6) of the International Journal of Electronic Commerce said that "there is no standard definition." It is thus important to investigate the issue, "What is the standard definition of social commerce?" The answers to these questions will provide light on the field of social commerce.

Implications for Variation Among Related Terms 4.3.2 Although the differences between social commerce, social shopping, and e-commerce have been established, additional research into related concepts like collaborative commerce, collaborative shopping, and social media marketing is needed. Understanding the distinctions between them is a fruitful area for future research. Researchers prefer to provide company methods while studying social media marketing, whereas analysing user behaviour is the most common topic when studying social commerce. In this way, we may analyse the many concepts that the research topics highlight. On the technological side, researchers may compare and contrast traditional media with social media and the World Wide Web. 2.0.

Researching the topic of social commerce led us to discover that other terms, such as social e-commerce, social e-business, online social shopping, collaborative e-commerce,

collaborative online shopping, social media shopping, social e-shopping, and socially-shared consumption, are used interchangeably by some scholars. It's

important to keep them apart so no one gets confused. Therefore, a categorization map is required to characterise them accurately for future studies.

Table 5
Research agenda.

Systematic Review	Questions
Definition	<ul style="list-style-type: none"> • What components should be included in s-commerce definitions with the advent of new technology? • What is the standard definition of social commerce?
Differences	<ul style="list-style-type: none"> • What are differences between social media and Web 2.0? • What differs social commerce from other terms (social shopping, e-commerce, collaborative commerce/shopping, and social media marketing)? • How classify these terms (social e-commerce, social e-business, online social shopping, collaborative e-commerce, collaborative online shopping, social media shopping, social e-shopping and socially shared consumption)?
Types and Technologies	<ul style="list-style-type: none"> • Which types of social commerce should choose for different companies? • What are functions for different types of social commerce?
Challenges and Benefits	<ul style="list-style-type: none"> • How should companies face these challenges and successfully engage in social commerce? • What are the essential value drivers in social commerce applications?
Models with Research Methods	<ul style="list-style-type: none"> • Which factors may be more critical for influencing different consumers' activities in social commerce? • How are more than one dependent variables influenced by different factors? • What are research methods will be adopted for future study?
Frameworks	<ul style="list-style-type: none"> • How social commerce frameworks guide companies to apply social commerce?

Social-commerce implications and difficulties As social commerce expands at a breakneck pace, it's become harder to choose the right sorts of associated services for various businesses. There is a dearth of literature that investigates how various forms of social commerce affect productivity and the success of businesses. Which of the recommended kinds should a corporation prioritise? is an unanswered question left by this (Friedrich et al., 2015). What should the roles of the various forms of social trade be?

How can businesses overcome the obstacles and make social commerce a success? Keeping track of the massive amounts of data and complicated technologies in use is a significant obstacle. According to Baghdadi (2016), businesses should put money into "big data" initiatives and make plans to use cloud computing services for storing the massive amounts of data that will be generated. Gaining the confidence of shoppers is crucial to expanding your share

of the market. Therefore, it is important for social commerce sites to implement security measures and privacy protection policies to safeguard user data (Lu et al., 2016). User-generated content is also essential for social commerce platforms. Engineering user-friendly platforms and inviting or hiring subject experts as premium users on the website to help consumers are two ways businesses may increase the likelihood that their customers would suggest and exchange knowledge with one another (Saundage & Lee, 2011).

5. CONCLUSION

The past ten years have seen the rise of social commerce, which has had a significant influence on economies and societies all around the globe. This study aimed to offer a comprehensive literature assessment by analysing 407 scholarly articles published on the topic of social commerce since 2006. We suggested a methodical approach by using a synthesis

and taxonomy of social commerce. Three research topics were developed to further our understanding of social commerce: (RQ1) What exactly is social commerce? In social commerce (RQ2), which research methodologies have been used? And last (RQ3), what are some promising avenues for further study in the field of social commerce?

We developed a taxonomy to categorise the many aspects of social commerce (e.g., definitions, distinctions, kinds and technologies, challenges and advantages, models and frameworks) in order to answer RQ1. We also provided a multi-dimensional definition of social commerce. The majority of social commerce studies have employed quantitative methodologies, which answers our second study question. Among them are

experimental research (4.9%), mathematical modelling (4.9%), longitudinal studies (2.0%), and surveys (50.1%). Although less common, qualitative research approaches were nevertheless used. 11.8% goes towards ideation; 5.7% to reviews; 1.2% to narrative analysis. The employment of technological design accounts for 4.7% of all research techniques, case studies for 8.4%, and mixed approaches for 2.7%. We concluded with a recommended research agenda on social commerce for RQ3 based on our systematic review. We're hoping this can serve as a road map for future scientists.

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Appendix 1

Literature on social commerce definitions.

Authors	Dimensions				Definition
	EC	SM	W2	SA	
Dennison et al. (2009)	x				The concept of word-of-mouth, applied to e-commerce.
Hsiao et al. (2010)	x	x			A new e-commerce method combining social networking with shopping.
Maruden (2010)	x	x		x	As a subset of e-commerce using social media to facilitate social interactions and enhance the online shopping experience.
Rad and Benyoucef (2010)	x			x	Refers to both networks of sellers and networks of buyers; it is the evolution of 'e-commerce which is based on one-to-one interactions, into a more social and interactive form of e-commerce.
Stephen and Trubia (2010)	x	x		x	Internet-based "social media" that allow people to participate in marketing, selling of products and services in online marketplaces and communities.
Liang and Turban (2011)		x	x	x	Using Web 2.0 social media technologies to support online interactions and user contributions to assist in the acquisition of products and services.
Gosta and Tavares (2012)	x	x		x	Enhance collaboration and trust relationships in e-business, integrating and adapting common social network collaborative tools and emphasizing the role of SCM in e-business.
Marsden and Chaney (2012)	x	x		x	The fusion of social media with e-commerce, or in the words of IBM, social commerce is basically the concept of word-of-mouth applied to e-commerce. More fully, social commerce is a subset of electronic commerce that uses social media, online media that supports social interaction and user contributions, to enhance the online purchase experience.
Shen (2012)		x		x	Technology-enabled shopping experience; online customer interactions while shopping provide mechanism for social shopping activities.
Wang and Zhang (2012)	x	x			As a form of commerce that is mediated by social media and is converging both online and offline environments.
Baghdadi (2013)	x	x		x	As doing commerce in a collaborative and participative way by using social media through an enterprise interactive interface.
Huang and Benyoucef (2013)	x	x	x	x	An Internet-based commercial application, leveraging social media and Web 2.0 technologies which support social interaction and user generated content in order to assist customers in their decision-making and acquisition of products and services within online marketplaces and communities
Kim and Park (2013)	x	x			A new business model of e-commerce driven by social media (e.g., SNSs) that facilitates the purchasing and selling of various products and services
Ng (2013)	x	x			The online buying and selling activities initiated via social media, which entails business transactions through either social media (e.g., on a Facebook store) or other e-commerce sites.
Shin (2013)			x	x	Limited to a Web platform that connects users to other people online and leverages those connected networks for business, education, and services by facilitating customer interactions and participation in ways that will result in measurable results.
Yadav et al. (2013)	x	x		x	Refers to exchange-related activities that occur in, or are influenced by, an individual's social network in computer-mediated social environments, where the activities correspond to the need recognition, pre-purchase, purchase, and post-purchase stages of a focal exchange.
Chen et al. (2014)	x	x		x	As business and commercial activities, which exploit social media to support social interactions and promote user contributions in assisting online transactions.
Gatautis and Medziusiene (2014)	x	x		x	The integration of social networking capability into e-commerce sites, which include, but are not limited to, product reviews, rating, videos, blogging, live chats and online forums. It involves using social media, online media that support social interaction, and user contributions to assist in the online buying and selling of products and services
Noor et al. (2014)	x	x			A new business model of e-commerce driven by social media (e.g., SNSs) that facilitates the purchasing and selling of various products and services
Esmaili et al. (2015)	x	x	x	x	As an Internet-based commercial application that makes use of web 2.0 technologies and social media, and it supports user-created content and social interactions.
Baghdadi (2016)	x			x	New way of doing commerce in a collaborative and participative way, involving interactions among all the actors of the value chain.
Hassan et al. (2016)	x	x			Online selling/buying activities using social media technologies, platforms.

Notes: EC: E-commerce; SM: Social media; W2: Web 2.0; SA: Social activities.

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