

Social commerce—state-of-the-art and future research directions

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Abstract In recent years, social commerce evolved into an emerging phenomenon of global interest for marketers, businesses, and researchers alike. In light of this development, it is not surprising that the number of publications focusing on this phenomenon at the interplay of electronic commerce and social media has been rising substantially. The goal of this paper is to provide a structured overview of social commerce research by means of a structured literature review. Based on our literature search between 2007 and 2014 resulting in 116 published papers, we carve out and assess the knowledge and the research areas that have been predominantly addressed by the Information Systems, Electronic Commerce, and Marketing research community so far. By providing a research agenda, we hope that our results will stimulate and guide future research in this exciting field.

Keywords Social commerce · Electronic commerce · Social media · Literature review

JEL Classification M10

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Introduction

The rising popularity of social media sites, such as Facebook, Google+, and Twitter, has influenced the behavior of consumers fundamentally. Nowadays, users of social media can easily share product information (Liang et al. 2011). At the same time, they are encouraged by social media features to articulate their affinity or dislike towards products and services (Lipsman et al. 2012). Consumers may also “consult their social community to seek advice in their purchasing decisions” (Liang et al. 2011, p. 69) and through social communities consumers have the potential to affect the buying decisions of much larger communities (Afrasiabi Rad and Benyoucef 2011). Thus, the emergence of social media has created opportunities for new business models and delivery platforms in electronic commerce referred to as social commerce (Liang and Turban 2011).

Broadly defined, social commerce platforms “allow people to participate actively in the marketing and selling of products and services in online marketplaces and communities” (Stephen and Toubia 2010, p. 215) and leverage the effects of enhanced social interaction within social media platforms (Liang and Turban 2011; Marsden 2010; Rubel 2005). Social commerce has the potential to become a significant sales channel in the future: Already in 2011 5 % of all online and offline shoppers worldwide purchased at least one item via a social media platform (PricewaterhouseCoopers 2013). Chinese consumers adopted social commerce services quickly, with already 56 % of all Chinese online consumers buying products via social media platforms (PricewaterhouseCoopers 2013). Thus, social commerce as an emerging phenomenon at the interplay of social media and electronic commerce is of global interest for marketers, businesses, and researchers alike (Wang and Zhang 2012).

In light of this development, it is not surprising that the number of publications focusing on social commerce has been rising over the last few years. A major aim of our paper is to provide deeper insights into the body of knowledge on social commerce by means of a structured literature review. What can a literature review about social commerce contribute? Whereas reviewing the literature represents an essential step and foundation when a research project is undertaken (Baker 2000), a literature review “makes a vital contribution to the relevance and rigour of research” by seeking “to uncover the sources relevant to a topic under study” (vom Brocke et al. 2009, p. 13) and “creates a firm foundation for advancing knowledge” (Webster and Watson 2002, p. 13). Especially due to the growing number of publications on the phenomenon of social commerce, we believe an analysis of literature is necessary to assess the current state of knowledge and research as well as to carve out research fields (Scandura and Williams 2000). In line with this, we do not only aim to give researchers, reviewers, editors, and practitioners a structured and comprehensive overview of the current state of research in the field of social commerce, but we also identify relevant research areas and uncover the sources relevant to the topic under study.

The remainder of this paper is organized as follows: In the following section, we provide the terminological foundations and state our research questions. The third section describes the methodology of our structured literature review including source selection, search strategy, and search results. The findings are presented in the fourth section. In the fifth section, we provide a discussion of the findings and point out directions for future research. The paper concludes with a brief summary.

Background and research questions

Foundations

There has been much controversy among researchers how to define ‘social commerce’. The phenomenon itself emerged in 2005 when Yahoo! stepped into the business of combining electronic commerce with social functions via the ‘Yahoo Shoppisphere’ (Wang and Zhang 2012; Rubel 2005). This platform was one of the first to make use of social shopping functions such as ‘Pick Lists’, enabling users to share their opinions about products with other users, and the integration of the ‘Yahoo!360°’ social network into Pick Lists, making it possible to see if users are connected with the creator of certain reviews (Yahoo! 2005). However, as social commerce is a rather new, fast growing phenomenon (Stephen and Toubia 2010; Liang and Turban 2011), there is not yet a well-established definition. Academic publications explicitly referring to ‘social commerce’ are still scarce, and some

publications synonymously use terms such as ‘social shopping’ instead. However, there are quite different opinions; the case of ‘social shopping’ may serve as an example: While some use the terms ‘social shopping’ and ‘social commerce’ interchangeably (e.g. Wang 2011) or ‘social shopping’ as one aspect of ‘social commerce’ (e.g. Marsden 2010), others see them as distinct terms (e.g. Stephen and Toubia 2010). Stephen and Toubia (2010) share the opinion that social shopping (solely) connects customers that generate content (e.g., by writing product reviews on websites such as Epinions.com and Yelp.com), while, on social commerce sites, consumers are sellers or curators of online stores (e.g., eBay and Squidoo.com). Instead, Afrasiabi Rad and Benyoucef (2011, p. 64) argue that “social commerce should encapsulate both customers and sellers”, and therefore the term includes both “networks of sellers” and “networks of buyers”.

Beyond the discussion to what extent similar terms are interchangeable, there is a common sense that social commerce is a composition of ‘social media’ and ‘electronic commerce’: Some researchers refer to social commerce as either a subset of electronic commerce (e.g., Marsden 2010) or an evolution or innovation of electronic commerce (e.g., Shen 2012; Liang and Turban 2011; Wang 2011; Afrasiabi Rad and Benyoucef 2011). For Marsden (2010, p. 4) “social commerce is the monetization of social media with E-Commerce”, meaning that social commerce is basically a subset of electronic commerce, which makes use of social media to encourage social interaction and motivate purchases. Social media includes for instance blogs, wikis, multimedia sharing services, podcasting and content tagging services, online social networks as well as virtual worlds, and social gaming platforms (cf. Anderson 2007; Mangold and Faulds 2009; Kane et al. 2014; Kaplan and Haenlein 2010; Harris and Rea 2009). Shen (2012, p. 199) defines social commerce as “a technology-enabled shopping experience where online consumer interactions while shopping provide the main mechanism for conducting social shopping activities”. Liang and Turban (2011, p. 6) describe social commerce as “the delivery of e-commerce activities and transactions via the social media environment, mostly in social networks and by using Web 2.0 software”. Other researchers see social commerce as a “more social and interactive form of e-commerce” (Afrasiabi Rad and Benyoucef 2011, p. 64), emphasizing that social commerce sites can be advanced electronic commerce sites with social networking functions (e.g. Wang 2011).

In any case, we can reason that social commerce is strongly connected to or based on social media and electronic commerce. Thereby, electronic commerce technologies focus mainly on the efficiency of transactional processes in terms of facilitating purchasing processes and information search, while social media enhances the shopping experience through the possibility of community interaction with other users.

Research questions

To provide deeper insights into the research field of social commerce, we conduct a structured literature review. It aims to help the researchers and practitioners alike to make sense of the accumulated knowledge concerning this field (Webster and Watson 2002). Based on the growing number of publications, we also intend to identify the most common outlets for research on social commerce to assist researchers in identifying potential target outlets for their own work (Bandara et al. 2011). In addition, it is very likely that researchers are interested not only in the development of the academic discussion and the receptiveness of certain outlets, but also in the research areas of existing social commerce contributions as well as in the corresponding research methods used. Moreover, this paper may be useful for editors and reviewers when assessing papers against the background of the current state-of-the-art. Consequently this literature review addresses the following research questions (RQ):

- (RQ.1) How did the academic discussion on social commerce develop over time? (*Development*)
- (RQ.2) Which publication outlets are most receptive to social commerce research? (*Outlets*)
- (RQ.3) Which research areas have already been covered by publications on social commerce? (*Content*)
- (RQ.4) What is the methodological orientation of social commerce research? (*Methodology*)
- (RQ.5) What are potential areas for future research? (*Research agenda*)

Addressing these research questions, we hope to cover issues that are most relevant in the field, while acknowledging that the topic has broad relevance for academia and industry alike. To be able to assess the exhaustiveness of the review and confidently use the results, we applied a systematic and structured approach to search and review the literature as recommended by many researchers (Bandara et al. 2011; vom Brocke et al. 2009; Webster and Watson 2002). Before presenting the results, we will describe the process of the literature search in the next section.

Literature search

A rigorous analysis of a research field requires a systematic and structured literature review (cf. Bandara et al. 2011; Webster and Watson 2002). According to Bandara et al. (2011), two main steps are important: source selection and search strategy. Source selection refers to which publications should be targeted, for example, journals and conferences (Bandara et al. 2011; vom Brocke et al. 2009), while search strategy refers to defining search terms and search fields as

well as the period of time to be covered (cf. Bandara et al. 2011; vom Brocke et al. 2009). By following Bandara et al. (2011), we will first identify relevant sources to be included in the literature review (cf. Webster and Watson 2002). Next we will define the search strategy in terms of time frame, search terms and search fields (cf. Cooper 1988; Levy and Ellis 2006).

Source selection

Identifying relevant sources requires, in a first step, to specify the domain of interest (cf. Bandara et al. 2011). On the one hand, social commerce is an area concerned with information-related topics and technologies (Wang and Zhang 2012). Therefore, it is indispensable to consider Information Systems (IS) journals. On the other hand, social commerce is described as a “more social and interactive form of e-commerce” (Afrasiabi Rad and Benyoucef 2011, p. 64) and is often viewed as an evolution of electronic commerce (cf. Shen 2012; Liang and Turban 2011; Wang 2011; Afrasiabi Rad and Benyoucef 2011). Thus, relevant electronic commerce journals need to be part of the literature search as well. Finally, social media, as an inherent characteristic of social commerce, has been changing the marketing landscape tremendously (e.g. Berthon et al. 2012; Borges 2009; Estanyol 2012; Tuten 2008; Corbae et al. 2003; Mangold and Faulds 2009). Hence, the respective marketing journals must not be ignored.

A literature search should include the field’s leading journals which are known for their high quality and are therefore likely to contain the major contributions (cf. Webster and Watson 2002). To specify high quality journals, researchers commonly refer to journal rankings (cf. Levy and Ellis 2006; vom Brocke et al. 2009). For the IS area, we included the Senior Scholars’ Basket of Journals comprising eight top journals proposed by the Association of Information Systems. For the area of electronic commerce, we identified three more relevant journals considering their high average ranking in the Management Information Systems (MIS) Journal Ranking which synthesizes a number of other rankings (Association for Information Systems 2013). To complement the selection of electronic commerce outlets, two more journals were selected, the *Journal of E-Commerce Research* and *Electronic Commerce Research*. To identify the most relevant publications in the marketing area, we selected seven journals, all of them in the top 10 of international marketing journals according to the 2007 Marketing Journal Ranking by Hult et al. (2009). The selected journals were also rated A* by the Australian Business Deans Council (2010) and are among the most reputable marketing journals with ratings between A and A+ following the VHB-JOURQUAL Ranking of the German Academic Association for Business Research (Schrader and Hennig-Thurau 2009).

Webster and Watson (2002) also suggest examining conference proceedings with a high reputation for quality, which is all the more important when analyzing a relatively young field of research such as social commerce. Conferences provide valuable contributions for the exchange of new ideas and support the development of new research agendas (e.g., Levy and Ellis 2006; Probst et al. 2013). Hence, we included two major international IS conferences, namely the proceedings of the *International Conference on Information Systems* and the *European Conference on Information Systems* – both ranked top-tier publication outlets by Willcocks et al. (2008). In sum, we considered 21 journals and two conferences for our literature search, consisting of nine Information Systems journals, five in the area of Electronic Commerce, and seven in Marketing, as specified in Table 2.

Search strategy

The term ‘social commerce’ first came up in 2005 with the introduction of the Yahoo! Shoppersphere (cf. Rubel 2005; Wang 2011) followed by emerging social shopping sites such as Kaboodle, Crowdstorm, and ThisNext in 2006 (Wang and Zhang 2012). As from 2007 the number of social commerce platforms has been growing heavily (Wang and Zhang 2012), we determined our search to span from January 2007 to December 2014. To ensure that we did not omit highly relevant publications before 2007, we also searched the databases EBSCOhost, EMERALDinsight, EconLit and the ACM Digital Library. This search did not yield any relevant findings, thus confirming our time frame.

To identify the relevant publications in the selected sources, we conducted a keyword search as proposed by Bandara et al. (2011), as keywords are the “the parameters of research itself” (Baker 2000). In a first step, we extracted terms used synonymously to “social commerce”. Those primary keywords included “social shopping” (cf. Wang and Zhang 2012) and “f-commerce”/“facebook commerce” (cf. Kumar and Sundaram 2012). In a second step, we checked the keywords listed in those papers that we found with the primary keywords. Using combinations of these keywords including “social web” AND “electronic commerce”, “social media” AND “electronic commerce”, “social media” AND “shopping”, “social” AND “electronic commerce”, “social media” AND “commerce”, “facebook” AND “commerce”, “social” AND “commerce”, “social” AND “shopping”, we extend the scope of the collected articles related to social commerce research. We refer to these combinations as secondary keywords (Bandara et al. 2011). To gather relevant articles using respective queries, journals were accessed via databases where available, for example EBSCOhost, ProQuest, EconLit, WILEY and ScienceDirect. However, we did not conduct a mere database search. Rather, we manually

examined the selected journals when databases’ search functions were insufficient in terms of not providing all the search fields necessary or when a journal was not accessible through database search. Table 1 provides an outline of the elements of our search strategy.

Search results

Our initial search resulted in 212 articles. Only 29 articles were found by using primary keywords such as “social commerce”, while the majority (183 articles) were extracted by using secondary keywords such as “social media” AND “electronic commerce”. For emerging fields of research as illustrated by Bandara et al. (2011) it is not unusual that the search with primary keywords only leads to very few articles. To determine all relevant articles, we manually analyzed each contribution regarding title, abstract, keywords, and full text with respect to its relevance for our research questions. Articles too short for a thorough content analysis (e.g., posters) were excluded (Pöppelbuß et al. 2011). In total, we excluded 96 articles that did not match our research focus. In summary, this procedure led to a final set of 116 articles serving as the basis for our subsequent analysis (cf. Table 2).

Findings

Development of the academic discussion over time (RQ.1)

To see how the academic discussion on social commerce developed over time, we first analyzed the number of articles published on social commerce from 2007 onwards, distinguishing between the three research disciplines IS, Electronic Commerce, and Marketing, treating IS conferences separately from IS journals. Figure 1 shows the number of articles by year and research discipline from 2007 to 2014.

Altogether, the level of publication activity has increased continuously until 2013, with the number of publications rising from 5 articles in 2007 to 27 articles in 2013. This corresponds to an average compound annual growth rate of 32.5%. The number of relevant publications increased substantially in 2011, from 11 to 21 articles published, and reached its peak in 2013 with 27 publications. The noticeable increase in 2011 can be partly attributed to two special issues¹ published in that year: the special issue on “Social Commerce” published by the *International Journal of E-Commerce* (5 articles) and the

¹ In addition, special issues including articles relevant for social commerce research were published in 2008 by the *Journal of Electronic Commerce Research* entitled “Virtual Worlds”, in 2009 by *Electronic Commerce Research* with the title “I have an avatar therefore I exist”, and in 2013, again by the *International Journal of E-Commerce* titled “Business Value Creation Enabled by Social Technology”.

Table 1 Search strategy

Time frame	January 2007–December 2014
Search terms	“Social commerce”, “f-commerce”, “facebook commerce”, “social shopping”, “social web” AND “electronic commerce”, “social media” AND “electronic commerce”, “social media” AND “shopping”, “social” AND “electronic commerce”, “social media” AND “commerce”, “facebook” AND “commerce”, “social” AND “commerce”, “social” AND “shopping”
Search fields	Title, Keywords/Subjects, Abstract, Text/All fields
Databases	ACM Digital Library, EBSCOhost, ProQuest, EconLit, WILEY, ScienceDirect

special issue on “Social Embeddedness and Online Consumer Behavior” by *Electronic Markets* (3 articles). Beyond the overall numbers, Table 2 further indicates that nearly 43 % of all articles were published in electronic commerce journals, 44 % in IS journals and conferences, and 13 % within the discipline of marketing. The peak observed for 2013 with 27 articles related to social commerce, which is mainly due to 11 papers presented at the *International Conference on Information Systems* (ICIS), while the number of publications in IS journals as well as in the areas of electronic commerce and marketing remained roughly the same as in 2012. In sum, despite the very recent reoccurring event of a drop in social commerce publications in 2014, the overall number of publications indicates that the young research field has been gaining significant importance in recent years.

Most receptive publication outlets to social commerce research (RQ.2)

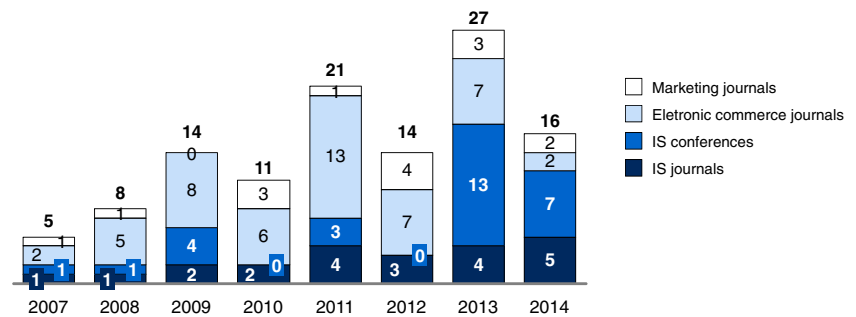
The number of outlets publishing social commerce research has been increasing in recent years. However, as these outlets vary notably regarding the preferred research topics (Pöppelbuß et al. 2011), they may also vary in their receptiveness to social commerce research. To assist researchers in identifying target outlets for their work, we analyzed the potential outlets and found which and to what extent journals and conferences published social commerce research (cf. Bandara 2007; Indulska and Recker 2010).

The largest number of articles can be attributed to outlets in the field of IS with 51 publications, thereof 29 articles in conference proceedings and 22 articles in journals,

Table 2 Results of the literature search

Research area	Journal/Conference	Number of articles
Information systems (51 articles)	<i>European Journal of Information Systems (EJIS)</i>	3
	<i>Information Systems Journal (ISJ)</i>	3
	<i>Information Systems Research (ISR)</i>	5
	<i>Journal of the Association for Information Systems (JAIS)</i>	4
	<i>Journal of Information Technology (JIT)</i>	0
	<i>Journal of Management Information Systems (JMIS)</i>	4
	<i>Journal of Strategic Information Systems (JSIS)</i>	1
	<i>MIS Quarterly (MISQ)</i>	2
	<i>European Conference on Information Systems (ECIS)</i>	6
	<i>International Conference on Information Systems (ICIS)</i>	23
Electronic commerce (50 articles)	<i>Electronic Commerce Research (ECR)</i>	13
	<i>Electronic Markets (EM)</i>	6
	<i>International Journal of E-Commerce (IJEC)</i>	17
	<i>Journal of E-Commerce Research</i>	14
	<i>Journal of Organizational Computing and Electronic Commerce</i>	0
Marketing (15 articles)	<i>International Journal of Research in Marketing</i>	1
	<i>Journal of Consumer Research</i>	2
	<i>Journal of Marketing</i>	2
	<i>Journal of Marketing Research</i>	5
	<i>Journal of Retailing</i>	1
	<i>Journal of the Academy of Marketing Science</i>	2
	<i>Marketing Science</i>	2

Fig. 1 Number of articles by year and research discipline



while 50 articles were published in electronic commerce journals and 15 articles in marketing journals. In the field of IS, the journals containing most of the articles are *Information Systems Research* (5 articles), the *Journal of the Association for Information Systems* (4 articles), and the *Journal of Management Information Systems* (4 articles). The majority of articles on social commerce related topics in the field of IS can be found in the proceedings of the International Conference of Information Systems (23 articles). The most receptive journals for social commerce research in the field of electronic commerce are the *International Journal of E-Commerce* (17 articles), the *Journal of E-Commerce Research* (14 articles), and *Electronic Commerce Research* (13 articles). Regarding the area of marketing, one of the selected leading marketing journals, namely the *Journal of Marketing Research* (5 articles), is among the overall top five outlets, followed by the *Journal of Marketing* (2 articles), the *Journal of Consumer Research* (2 articles) as well as *Marketing Science* (2 articles). In sum, it can be argued that, so far, electronic commerce journals have been the most receptive outlets for social commerce research (58 % of 87 articles) (cf. Fig. 2).

The presented findings can help authors to decide on where to publish their research on social commerce related topics. Also, editors and reviewers can analyze to what extent their outlet is already actively participating in the academic discussion on the phenomenon, and which may be the implications for their outlet in the future.

Research areas covered by publications on social commerce (RQ.3)

Categorization methodology

In order to systematically explore research areas that have already been covered, we provide a concept-driven categorization of literature. To effectively synthesize the corresponding literature, we used the “Research Themes”, “Social Media” platforms types, and “Research Methods” (cf. RQ.4) categorization by Liang and Turban (2011) from their

“Framework for Social Commerce Research” which suits our purpose very well.²

Liang and Turban’s (2011, p. 8) category “Research Themes” focuses on “the central issue that a research project intends to explore”. In their framework, they distinguish nine research themes: *User behavior*, *firm performance*, *network analysis*, *adoption strategy*, *business model*, *enterprise strategies*, *website design*, *social process*, and *security and privacy policy*. As network analysis is rather a method, we renamed this research theme into *network structure*. In addition, we added the sub-category *overview* to be used for articles that do not relate to any specific research theme but aim at providing an overview. All of the 116 articles were categorized independently by at least two researchers. In the event of any disagreement, we decided on the best-fitting research area (cf. Pöppelbuß et al. 2011) by means of a team discussion. The reliability of agreement was measured with Fleiss’ Kappa (Fleiss 1971). We observed a value for Fleiss’ Kappa of 87.3 %. According to Landis and Koch (1977) this reflects an almost perfect agreement within the team of researchers.

Overview of the results

Figure 3 illustrates that the research theme *user behavior* (26 %) dominates past social commerce research, followed by the two themes *website design* (15 %) and *enterprise strategies* (14 %). In addition to the more consumer-centric perspective, around one quarter of all articles focus more on business aspects from a company perspective; these encompass the research themes *enterprise strategies* (14 %), *business model* (7 %), and *firm performance* (4 %). Although, these days, the topic of security and privacy has been increasing in importance, the research theme *security and privacy policy* accounts for only 6 % of the articles. Finally, 4 % of the articles are categorized as *overview*, including two state-of-the-art articles with regard to customer reviews’ research (Trenz and Berger 2013) and the role of trust in business-to-consumer interactions (Breneman and Karimov 2012).

² We also analyzed all of the papers with respect to all further categories of Liang and Turban’s framework, but refrained from presenting the findings in a separate section due to the page restrictions.

Fig. 2 Most receptive journals to social commerce research by discipline



Since the number of publications in the field increased in recent years, it is of interest how different research themes developed over time. Figure 4 indicates this evolution: First contributions were in regard to *user behavior*, *enterprise strategies*, and *website design*. The research theme that emerged last was *security and privacy policy* in 2010. From 2007 to 2010, most contributions refer to the research themes *user behavior*, *social process*, *website design*, and *business model*, each making up for about 16 % of all articles published in this period. From 2011 to 2014, research focusing on *user behavior* evolved significantly with more than 30 % of all articles published within this time span. In turn, the research theme *business model* experienced the biggest decline: While publications on this topic represent 16 % of all articles from 2007 to 2010, articles related to this topic only make up for 3 % of all articles within the time span 2011 to 2014.

Categorizing articles according to Liang and Turban’s (2011) “Social Media” platform types, we found that most refer to *social shopping websites* (41 %), followed by *social networking sites* (28 %). A smaller number of articles focus on *blogs, wikis and microblogs* (e.g. Twitter) (8 %), *presentation sites* (e.g. YouTube) (5 %), and *group buying websites* (e.g. Groupon) (2 %). We decided to refine the “Social Media” category by adding *social gaming websites and virtual worlds* (e.g. Second Life) (12 %) as the sixth platform type, since those also belong to social media enabled sites (cf. Mangold

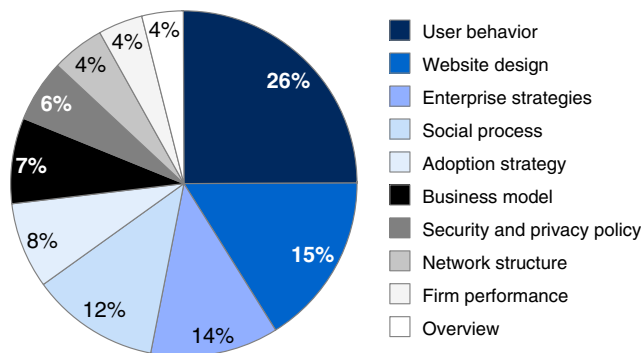


Fig. 3 Distribution of articles by research theme

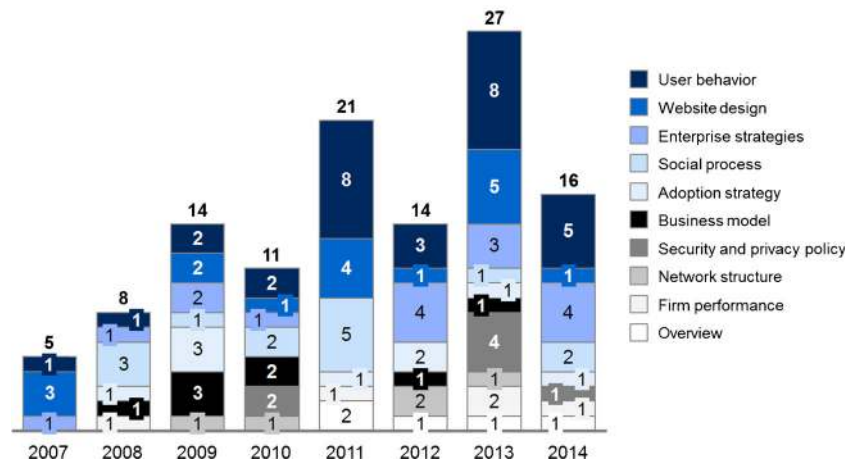
and Faulds 2009; Kaplan and Haenlein 2010; Harris and Rea 2009).

Research theme: user behavior

The research theme *user behavior* covers most articles (26 %) and has the highest maturity regarding the breadth of topics of all social commerce research themes (e.g., Albert et al. 2014; Bateman et al. 2010; Blasco-Arcas et al. 2013; Chen et al. 2014; Grange and Benbasat 2013; Huang et al. 2011; Scholz et al. 2013; Wang and Chang 2013; Yin et al. 2014; Zhang et al. 2012; Zhou et al. 2014). Most of them either investigate social shopping websites (47 %), social networking websites (37 %), or social gaming websites (10 %).

Researchers commonly agree that *users’ participation* behavior has been found to be of utter importance for the success of social commerce platforms (e.g. Chen et al. 2014; Casaló et al. 2010). This knowledge further catalyzed researchers’ interest in determinants and implications of users’ participation in respective online communities such as Epinions.com, Timezone.com, or VirtualTourist.com (e.g., Bateman et al. 2010; Casaló et al. 2010; Chen et al. 2014; Mathwick et al. 2008; Siering and Muntermann 2013; Wirtz et al. 2013; Yen et al. 2011), wherein researchers commonly differentiate between two types of users’ participation behavior, active and passive participation: While active users contribute to the content and relationships within the network, for example by commenting posts, passive users preferably browse the content without actively contributing to the network via content generation or relationship building (Chen et al. 2014). As Bateman et al. (2010) point out, in the past, research mainly suggested two competing positions as explanation of different types of participation behaviors: Some authors support the position that users’ participation in online communities is driven by motives of self-interest, while others demonstrate that altruistic motivations have a stake in participative behaviors. However, recent approaches consider the individual as well as the community in explaining different user behaviors by mostly drawing on organizational commitment research

Fig. 4 Number of articles by research theme over time



(e.g. Bateman et al. 2010; Casaló et al. 2010; Chen et al. 2014; Zhou et al. 2014). As a consequence, community members' commitment and psychological bonds have been found to affect their active participation significantly, thus implying that users' commitment to a respective online community can be seen as major determinant of users' participation behavior. Thereby, different forms of commitment to a specific community impact users' active participation behavior in different ways: For example according to Bateman et al. (2010) need-based commitment is a predictor of thread reading, affect-based commitment predicts reply posting as well as moderating behaviors, and obligation-based commitment results solely in moderating behavior. In line with Bateman et al.'s results, Chen et al.'s (2014) more recent work also demonstrates a highly significant relationship between active user behavior and affective as well as continuance commitment. They find that while normative commitment to a platform has no significant effect on users' active participation, affective commitment turned out to be the most important driver of each of the four dimensions of active behavior such as content creation and content transmission. However, so far not much research has been done on different determinants of the participation enhancing effect of users' commitment to specific online communities as well as the interplay of variables on an individual's level such as self-interest versus altruistic motivations and different forms of community commitment. In respect to these remaining questions, Zhou et al. (2014) are amongst the first to present potential determinants of online users' commitment to specific online communities by pinpointing the role of cultural aspects as in the impact of individualism on users' affective commitment in an online context.

Besides users' participation behavior, another line of research within the area of users' behavior investigates factors directly influencing *consumers' purchase intention* on social commerce websites (e.g., Albert et al. 2014; Bae and Lee 2011; Blasco-Arcas et al. 2013; Guo and Barnes 2009;

Khare et al. 2011; Scholz et al. 2013; Sotiriadis and Zyl 2013; Suntornpithug and Khamalah 2010; Wang and Chang 2013; Zhang et al. 2012). Suntornpithug and Khamalah (2010), for example, found that person interactivity and machine interactivity positively influence online purchase intentions, with machine interactivity impacting attitudes, physical telepresence, perceived behavioral control and trust. Blasco-Arcas et al. (2013) confirm the importance of customers' interactions and connections with other customers for customers' involvement and purchase behavior. In addition, Scholz et al. (2013) and Wang and Chang (2013) emphasize the important role of user generated content with respect to the conversion rate and purchase intentions of users, while Albert et al. (2014) investigate the value of firm engagement in online communities in affecting users' purchasing intention. Thus, all of these articles analyze different variables which they have found to influence customers' purchase decisions such as WoM volume and user generated content in general (e.g. Scholz et al. 2013; Wang and Chang 2013), online customers' mood and feeling of social presence (e.g. Zhang et al. 2012), trust in social commerce platform providers (e.g., Brock et al. 2011), gender (e.g., Bae and Lee 2011), or machine and person interactivity (e.g., Blasco-Arcas et al. 2013), which suggests that the interplay of a variety of factors contribute to online users' purchase intentions. Most articles share the position that users' interactions are amongst the most important determinants of online community users' purchase decisions (e.g., Scholz et al. 2013; Sotiriadis and Zyl 2013; Wang and Chang 2013). Researchers however have not reached a consensus about the type of user generated content and electronic word of mouth (eWoM) that might have the most effect on e-tailers conversion rates. For example, Wang and Chang (2013) come to the conclusion that the volume of positive evaluations, e.g. the number of 'likes', positively affects the conversion rate. In contrast, Scholz et al. (2013) have found that actually "neutral" content shared by users of an online community positively affect the conversion rate of online shop visitors.

Finally, some contributions in the field of user behavior investigate factors influencing *customer loyalty* towards social shopping, social networking, or social gaming websites in terms of *repeat purchase behavior* (e.g., Chen et al. 2007a; Chiu et al. 2014; Goel et al. 2013; Jang et al. 2008; Zhou et al. 2014). Chiu et al. (2014), for instance, explore repeat purchase intention of experienced online buyers. At this juncture, their results mainly support prior research in offline shopping environments by finding that both utilitarian shopping value, e.g. monetary savings and hedonic shopping value, e.g. a stimulating social shopping experience, are positively associated with the buyers' repeat purchase intention. However, their study also demonstrates that a high level of perceived risk, e.g. the risk of a financial loss, reduces the effect of utilitarian value but increases the effect of hedonic value on repeat purchase intention. Thus, in an online context, where perceived risk is generally higher than in an offline context, the impact of hedonic benefits on repeat purchase intention increases suggesting that social commerce platforms might meet online buyers' social/hedonic needs better than standard e-commerce platforms. Furthermore, the significant higher impact of hedonic value on repeat purchase behavior when perceived risk increases may indicate that hedonic value is more important in a context of buyers less experienced with the platform environment, which may also be the case in the context of novel social commerce applications such as the application "pay by tweet" in Twitter as investigated by Adamopoulos and Todri (2014).

Thus, even though *user behavior* is the most comprehensive research area in which a variety of topics have been investigated up to date and knowledge from offline research in regard to customers' shopping behavior has been applied as well, conducting more in depth research in particular areas may be desirable, for instance investigating the interplay of variables which influence users' participation behavior, investigating the impact of different forms of eWoM and user generated content quality on sales, or investigating variables which impact social commerce users' perceived hedonic value to improve the design of respective platforms.

Research theme: website design

The existing body of knowledge also includes numerous publications related to *website design* (15 %) (e.g., Arazy et al. 2010; Ganley 2011; Gottschlich et al. 2013; Li and Buchthal 2012; Macaulay et al. 2007; Mackenzie et al. 2009; Noh et al. 2013; Shi et al. 2013; Wang et al. 2007; Yue and Jiang 2013; Zhang and Liu 2013; Zhu et al. 2010). Social shopping websites (82 %), presentation sites (12 %), and virtual worlds (6 %) were the social media platform types primarily investigated.

Several articles in this research stream explore how to motivate, enhance, and support the interaction of consumers

by applying *collaborative shopping technologies* (e.g., virtual advisors, avatars, social recommender systems), which support navigation and communication and impact consumers' shopping value (e.g., Arazy et al. 2010; Gottschlich et al. 2013; Hess et al. 2009; Li and Buchthal 2012; Seedorf et al. 2014; Shi et al. 2013; Wang et al. 2007; Yue and Jiang 2013; Zhu et al. 2010). For instance, Seedorf et al. (2014) explore social co-browsing for shoppers, a relatively recent social technology for collaborative online shopping, and how this technology impacts user engagement. Their data analysis concludes that social presence generated through social co-browsing has a significant positive effect on the felt involvement and durability of a user's shopping experience. Another social technology which impacts a consumer's shopping value are social recommender systems utilizing data from users' social relationships to filter information relevant to users. Gottschlich et al. (2013), for example, illustrate how to use Facebook profile data to create meaningful recommendation systems. In addition, further researchers like Shi et al. (2013) analyze the design of online social referral systems. They argue that companies could successfully use online social referrals if they managed to design monetary incentive schemes with respect to different social distances (e.g. close friend) between proposer and respondent.

Further publications investigate the effect of *interactive social shopping features* on website usage or purchase behavior (e.g., Jahng et al. 2007; Macaulay et al. 2007; Noh et al. 2013; Olbrich and Holsing 2011; Wakefield et al. 2010; Zhang and Liu 2013). For instance, Olbrich and Holsing (2011) found that the use of tags positively influences click-out behavior to the actual shop to purchase the product, while the use of lists and styles is negatively correlated with click-out behavior.

All of these studies have in common that they suggest effective instruments to design websites that enable satisfying users' needs for hedonic shopping value. Some of them illustrate the effectiveness of popular tools such as recommender systems, while others introduce novel social technologies, such as social co-browsing, which offer new interactive ways to enhance customers' social shopping experience. In contrast to these studies, Macaulay et al. (2007) provide a more critical perspective on providing users with hedonic shopping value via respective social technologies by showing that not all users strive for the same social website features. Thereof it is important to notice that, typically, different user groups have distinct motivations to use a website and therefore have different requirements on website design. As a result, this field of research still offers ample opportunities for further research and, as new social technologies are being developed now and in the future, "website design" related to social commerce remains an ever evolving stream of research.

Research theme: enterprise strategies

Enterprise strategies represent a further research theme in social commerce research (14 %) (e.g., Adamopoulos and Todri 2014; Alt and Puschmann 2012; Chen et al. 2007b; Danaher and Dagger 2013; Dou et al. 2013; Goel and Goldstein 2014; Ng and Wang 2013; Oestreicher-Singer and Sundararajan 2012; Onishi and Manchanda 2012; Stephen and Galak 2012; Xu et al. 2014). The majority of these articles investigate social shopping websites (7 articles), followed by social gaming websites and virtual worlds (3 articles), social networking sites (3 articles) and blogs, wikis, and microblogs (3 articles).

Most of these articles discuss topics related to the *value chain* such as *marketing, advertising, customer relationship management, or customer service*. As a consequence, similar or conflicting positions are rare due to the broad assortment of topics that are being studied, as opposed to a limited number of main sub-topics discussed in somewhat more depth. For instance, Onishi and Manchanda (2012) explain how social media can best fit a firm's marketing strategy to lead to commercial success. Further, Dou et al. (2013) show how firms can strategically exploit the potential of user networks by regulating the usage of social media features in accordance with suitable market seeding and pricing strategies, while Danaher and Dagger (2013) provide a method that enables advertisers to compare the relative effectiveness of multiple media as part of their marketing strategies. Comparably, Zhang and Duan (2014) examine the economic impact of different advertising channels (search engine, social media, 3rd party websites) on sales metrics of major e-commerce mergants such as Amazon, Sears, Macy's, Target and Walmart. Among the three referral channels, search engine explains the most of the variances in sales, followed by social media, and third-party websites, while social media is the leading predictor of conversion. Hence customers are more likely to make the purchase being exposed to information, as in advertisements, on social media channels. Another surprising finding by Zhang and Duan (2014) is that conventional web traffic metrics such as page views and duration have no significant predictive relationship with sales. Furthermore, in contrast to existing industry anecdotes and consistent with Xu et al.'s (2014) conclusions, as Zhang and Duan (2014) point out, their study indicates that customers referred from social media channels is the leading predictor of conversion as opposed to search engines which are after all highly predictive of website sales but not of conversion. Anyhow, results further demonstrate great variation not only among the three referral channels, but also among different shops, which confirms that no one size fits all.

Adamopoulos and Todri (2014) illustrate the effectiveness of promotional events in social media platforms by evaluating promotional events' impact on participating brands, based on

a new social commerce service called "Pay-by-Tweet", a venture of AmericanExpress and Twitter. According to Todri and Adamopoulos (2014) "Pay-by-Tweet" enables users to purchase a product from a participating brand by sending a short 140-character text message, called "tweet", with a designated keyword (i.e., hashtag), with all transactions being visible to the users of the platform turning each purchase into an advertisement to the social neighbors of the respective customer. The authors show that promotional events combined with features enabling implicit or explicit advocacy on social media platforms result in statistically significant positive abnormal returns, in terms of new followers for the corresponding brands. Besides marketing and in particular advertising strategies, Xu et al. (2014) developed a "cyber migration" model that includes push, pull and mooring factors which influence user intention to switch from one social networking site to another and suggest strategies for retaining users grounded in four significant factors of switching behavior: dissatisfaction with socialization support, dissatisfaction with entertainment value, continuity cost, and peer influence.

Regarding the *commercialization of virtual worlds*, Bourlakis et al. (2009, p. 135) explain key challenges and opportunities faced by retailers. They find that "retailers need to employ a holistic and overarching approach when devising their promotional strategies" especially when aiming at successfully operating in virtual worlds such as Second Life. Goel and Prokopec (2009) go further and propose effective entry strategies for firms seeking to successfully leverage virtual worlds, while Barnes and Mattsson (2008) develop a scale to measure the resulting success in virtual worlds in terms of brand value. In sum, social commerce research in regard to *enterprise strategies* provides useful guidelines to develop strategies for successful commerce utilizing social media. None of the other research fields investigates as many different sub-topics as this one, at the same time providing a number of novel and surprising insights, such as the study conducted by Adamopoulos and Todri (2014) on "Pay by tweet", Zhang and Duan's (2014) research in regard to the relationship of different referral channels on performance, or Xu et al.'s (2014) development of the "cyber migration" model. Hence, the field of *enterprise strategies* represents a promising research area with high potential for future studies tailored to the specific characteristics of social commerce sites.

Research theme: social process

Social commerce research is also concerned with research on *social processes* (12 %) (e.g., Adjei et al. 2010; Amblee and Bui 2011; Chen et al. 2009; Forman et al. 2008; Garg et al. 2011; Gruner et al. 2014; Li et al. 2014; Pentina et al. 2008; Shen et al. 2010; Takac et al. 2011; Trusov et al. 2013; Wei et al. 2011; Xu et al. 2008; Zheng et al. 2011). Fifty-seven percent of the analyzed articles investigate social networking

sites, 29 % are related to social shopping websites, and only one article focuses on group buying websites and another one on presentation sites.

It is in the nature of things that several contributions to this research theme deal with the *influence of community users'* ratings, reviews and recommendations on sales and revenues (Amblee and Bui 2011; Adjei et al. 2010; Forman et al. 2008; Li et al. 2014). Amblee and Bui (2011), for example, state that eWoM is an essential source for e-tailers to create a social buying experience. By studying the market of Amazon Shorts electronic books they uncover that social discussion via eWoM becomes a "collective signal of reputation" ultimately driving demand and sales. Li et al. (2014) propose a mechanism to harness the power of social influence to increase the click through rate of advertisements. Hence, there exists a consensus that social influence exerted by users onto each other via eWoM significantly impacts performance and sales metrics.

Further studies focus on the impact of interaction between users of online social networks on new *product adoption and diffusion* (Garg et al. 2011; Gruner et al. 2014; Xu et al. 2008; Trusov et al. 2013) as well as on the development of *customer loyalty* (Chen et al. 2009; Shen et al. 2010). As discussed by Wang and Chang (2013), a number of researchers have suggested that close friends and family of users (strong ties) are more likely to impact users' purchase decisions, hence also the adoption of new products, than users' distant friends/acquaintances (weak ties). Interestingly, some studies however indicate that this might not be a universally valid argument: For example, Garg et al.'s (2011) research demonstrates that users of online social networks have a significant influence on product discovery, even in a network with extremely weak ties and in which peers do not know one another personally. This is supported by Xu et al. (2008) who conclude that "social influence in online social networks is less likely to be determined by the network structure one is embedded, but rather the dynamic interactions on top of the network [...], it is the activation of one's social network [...], not the network itself". Further research on new product adoption and diffusion addresses some other discontinuous topics. For instance, Gruner et al. (2014) demonstrate the commercial influence of different types of firm hosted online brand communities (open, discerning and restricted online brand communities) on new product success, as in sales and market share. As a result, an open online brand community should be used for radically innovative products, for incremental innovations managers shall preferably make use of a discerning online brand community, while a restricted online brand community is least likely to support successful introduction of radically innovative products (Gruner et al. 2014). How to improve pre-launch forecasts of product diffusion in online social networks is illustrated by Trusov et al. (2013). In conclusion, the research area *social process* mainly covers topics

related to consequences of eWoM in online communities (e.g., Amblee and Bui 2011; Forman et al. 2008) and the role of online communities in new product success (e.g., Garg et al. 2011; Gruner et al. 2014). Thereby, the field of *social process* seems to be at an early stage, and although closely related to the research theme *network structure* (with some overlaps) still has lots of potential for future research.

Research theme: adoption strategy

As social commerce is still a relatively young strand of research, several contributions (8 %) investigate the *adoption strategy* of social commerce and related issues. Three of those contributions focus on the analysis of blogs/microblogs (Liang et al. 2011; Tan et al. 2009; Todri and Adamopoulos 2014), four studies concentrate on social gaming websites and virtual worlds (Chandra et al. 2012; Fetscherin and Lattemann 2008; Junglas et al. 2013; Shen and Eder 2009), and two publications examine factors which influence the intention to use social shopping websites (Shen 2012; Qiu and Benbasat 2009).

In that context, Liang et al. (2011), for instance, investigate how social constructs affect a *user's intention* to receive and share commercial information on a microblog-based social networking site (Plurk.com). The results of their empirical study show that social support has a significant positive effect on the intention of users to adopt social commerce. Additionally, they found that website quality (system and service quality) also positively influences the intention to conduct social commerce, while relationship quality, which includes users' trust, commitment and satisfaction with the platform, is a significant mediator between website quality and a user's intention to adopt social commerce. Todri and Adamopoulos (2014) examine factors that drive and affect consumers' decisions to participate in novel social commerce services such as "Pay-by-Tweet". Various user characteristics influence the likelihood for such a social purchase, for instance the size of the online social network, the user's loyalty and trust towards the brand participating in "Pay-by-Tweet", as well as the familiarity of the user with the platform. Shen (2012) extends the Technology Acceptance Model to suit the social shopping application of social commerce with factors from social comparison theory, social presence theory and flow theory and provides empirical evidence for the potential advantage of using technology to promote social interactions on electronic commerce sites. Hence, in sum, most of research in regard to the willingness and intention of users to adopt social commerce is in line with findings from the research area *user behavior* in which research has shown that users' participation behavior depends upon users' commitment to the social commerce community where trust in and familiarity with the platform provider/brand is an important factor to consider when designing an effective social commerce strategy. Thus,

studies regarding the theme *adoption strategy* already have enlightened some elementary contextual determinants that have great impact on the adoption and success of social commerce applications. At the same time, as social commerce itself is a novel, growing stream of research, users' adoption of social commerce is still in its infancy. As a consequence of this new phenomenon, there exist numerous promising opportunities for future research in regard to the determinants of users' engagement in social commerce activities such as research analyzing the types of user groups that might be most responsive to social commerce functionalities, as will be pointed out in detail in the upcoming research agenda.

Research theme: business models

A smaller share of articles (7 %) is related to *business models* in the context of social commerce (Cagnina and Poian 2009; Cheema 2008; Dhar and Ghose 2010; Greiner and Wang 2010; Lehdonvirta 2009; Oestreicher-Singer and Zalmanson 2009; Pelaez et al. 2013; Scarle et al. 2012). They address different social media platform types such as social shopping websites (3 articles), social gaming websites and virtual worlds (2 articles), as well as group buying websites (1 article), presentation sites (1 article) and social networking sites (1 article).

Naturally, the discussion of business models focuses primarily on *commercial activities* such as transaction, pricing, or advertising. Oestreicher-Singer and Zalmanson (2009, p. 1), for instance, investigate the "interplay between users' functional and social behavior on media sites and their willingness to pay for premium services". They found a positive association between social online activity and propensity to purchase a premium services subscription, which suggests that social activities do in fact drive consumers' willingness to pay for online services. Additionally, in recent years further business models with respect to social commerce have emerged: Greiner and Wang (2010), for example, analyze peer to peer lending, as another form of commercializing networks of users, whereas Pelaez et al. (2013) explore the impact of group buying by investigating group size and communication level on market performance.

Beyond peer to peer lending and group buying, researchers explore *virtual worlds* as a promising business model. Lehdonvirta (2009) examines the drivers of the revenue model of selling virtual goods for real money, which is an increasingly common revenue model for social networking sites and other online services as well. In addition, Cagnina and Poian (2009) propose a framework to identify value drivers in virtual worlds in order to support firms looking to implement virtual worlds as a successful business model. In sum, researchers who have studied social commerce related business models have focused on only few types of social commerce platforms such as virtual worlds (e.g. Secondlife), leaving a number of

research gaps in regard to more novel applications (e.g. Pinterest). Additionally, in light of social commerce business models, it would be of further interest to businesses to gain knowledge about the way certain type of products benefit from a particular type of social commerce platform, thus providing new insight into the applicability of social commerce business models.

Research theme: security and privacy policy

The rising importance of security and privacy issues has fostered *security and privacy policy* research (6 %) in recent years (e.g., Aljukhadar et al. 2010; Swamynathan et al. 2010; Choi and Jiang 2013; Dhillon and Chowdhuri 2013; Phan and Cavusoglu 2013; Wilson et al. 2014; Xu et al. 2013). These articles solely investigate social networking sites (5 articles) and social shopping websites (2 articles).

Since the use of social commerce functionalities and services often entails substantial personal disclosure, which provokes users' privacy and security concerns, there is a broad consensus that privacy and security concerns are amongst the main obstacles regarding the adoption of social commerce, because users' privacy concerns have been shown to negatively influence users' intention to engage in social commerce activities (e.g., Wilson et al. 2014). Phan and Cavusoglu (2013), for example, found that *privacy control mechanisms* affect users' disclosure of information, while Choi and Jiang (2013) developed a scale to measure how privacy concerns negatively influence users' willingness to disclose profile information. By interviewing social networking site users, Dhillon and Chowdhuri (2013) derived fundamental objectives in regard to the protection of the users' identity on social networking sites, such as establishing social networking ethics, maximizing end-user trust, ensuring authenticity of user identity, maximizing identity management to make social networks useful as well as maximizing social networking infrastructure protection. In line with this research, Wilson et al.'s (2014) model summarizes the relationships among privacy, trust, perceived social benefits, and perceived impression management capabilities, a network's ability to fulfill users' needs regarding creating and presenting their identities. They find that perceived impression management capabilities serve as a primary driver not only of perceived social benefits but also as primary driver of usage intentions and hence as key counterweight in the tension between users' benefits using online social networks and their privacy concerns. Concerning *security issues* in reputation systems, Swamynathan et al. (2010) propose solutions to address the two main reasons for erroneous values produced by reputation systems, namely user collusion and short-lived online identities. Hence, all of these articles provide detailed and hands-on criteria that influence users' privacy and security concerns, which in turn enables businesses to get the most out of social

commerce by reducing their customers' concerns. Thereof, even though not much research has been conducted in this area yet the depth in which users' privacy concerns in respective online communities have been analyzed is surprising.

Research theme: network structure

Aside from social process, a small number of the publications analyzed (4 %) consider *network structure* as a key research theme by investigating the network structures of online communities to gain insights into user and link structures (e.g., Carmi et al. 2009; Goldenberg et al. 2012; Stephen and Toubia 2010; Yang et al. 2013; Yoon 2012). Most of them either analyze social networking sites (two articles) or social shopping sites (two articles); only one article examines presentation sites.

Stephen and Toubia (2010) demonstrate that *social networks* between sellers can create actual economic value for all participants. Similar to research on network effects in offline shopping centers, shop accessibility is the key issue in both offline and online marketplaces, but the drivers of an online social commerce marketplace differ from those of offline shopping environments (Stephen and Toubia 2010). In view of their results, the major difference to offline shopping centers is that in an online social commerce marketplace shops with a central position are not the ones to benefit the most, because they are not the ones with the highest accessibility.

A further stream of research examines the effects of *recommendation networks* on customer satisfaction (Goldenberg et al. 2012), demand and revenue growth (Carmi et al. 2009), or the effects of social networks' attributes (strength, centrality, range of ties) on the quantity and quality of word of mouth (Yoon 2012). Since very few researchers have so far investigated the network structure of social commerce communities, with most researchers solely focusing on recommendation networks without a distinct focus solely on the social commerce phenomenon, neither consensus nor heated debates exist on determinants of the network structure of social commerce platforms, leaving room for further research.

Research theme: firm performance

The last research theme refers to *firm performance*. In recent years, only very few articles (4 %) have dealt with this research theme (e.g., Koh and Kim 2004; Qi 2011; Kumar et al. 2013; Li and Huang 2014; Luo and Zhang 2013) although the question of what is the impact regarding firm performance increases. Social networking sites (2 articles), social gaming sites and virtual worlds (1 article), and blogs, wikis, and microblogs (2 article) were the social media platform types investigated.

The main *commercial activities* under investigation relate to marketing activities and ratings, reviews, and eWoM: Luo and Zhang (2013) study the relationship between firm performance and user-initiated web activities such as user-generated reviews and blogs, while Qi (2011) specifically investigates the relationship between a firm's sales and word-of-blog. They found that supporting word-of-blog volume is both a predictor and an outcome of sales. Li and Huang (2014) quantify the value of social media for marketing purposes, with their preliminary results suggesting that one more follower on Twitter is correlated with 1.514 USD more in salary for a NBA player in 2013. Similarly Kumar et al. (2013) illustrate how social media can be used to generate sales, return on investment as well as positive word of mouth. Hence, researchers agree that social interaction between individuals, which is at the heart of social commerce applications, can significantly influence sales and performance metrics. However, the current stage of research in regard to *firm performance* lacks further knowledge about how to improve firm performance and how particular social commerce functions and platform characteristics may impact these firm performance metrics.

Methodological orientation of social commerce research (RQ.4)

In the following, we provide an overview of the main methodologies used by different studies to explore the phenomenon of social commerce. Thereby, we base on Liang and Turban's (2011) framework which indicates that *empirical survey, experimental study, longitudinal study, case study, conceptual development* and *technology design* represent the major methods in social commerce research. Our analysis of the research contributions regarding the employed research methods, shows that since 2007 there has been a growing body of literature with a focus on quantitative, empirical research: The categorization results indicate that survey (35 %) as well as experimental study (20 %), which includes lab controlled experiments and field experiments, are the most popular research methods used, followed by longitudinal study (17 %), conceptual development (11 %), and case study (11 %). Only one article made use of technology design as the research method.

Analyzing the development of social commerce research methodology from 2007 to 2014 reveals that there is only a slight change in popularity of certain research methods over time: From 2007 to 2010, the three most frequently used research methods were survey (39 %), experimental study (21 %) and case study (18 %), followed by further methods such as longitudinal study (11 %), conceptual development (8 %) and technology design (3 %). As for 2011 to 2014, some changes occurred: Conceptual development (13 %) as well as longitudinal study (21 %) grew in popularity, whereas the use

of case studies decreased (8 %) and the use of empirical surveys fell slightly (33 %). Although the overall investigation confirms that the survey is the most prevalent method, in 2013 experimental studies (33 %) outnumbered surveys (19 %) for the first time.

Further analyses with respect to the research disciplines led to interesting findings as well: In IS the most frequently used research methods are surveys, experimental studies, and longitudinal studies. In comparison, in the field of electronic commerce, survey is the dominant research method as well, followed by conceptual development, and case study, while experimental study is less widely used. Finally, case study and survey are the most popular research methods in the discipline of marketing (Fig. 5).

Beyond the research methods by discipline, we analyzed them with respect to the research themes. As Fig. 6 indicates, empirical survey and experimental study are the two most frequently used research methods in regard to research themes such as user behavior, website design, social process, and adoption strategy. In turn, for research themes that are still in their infancy such as security and privacy policy, network structure, and firm performance we rather observe longitudinal studies or conceptual developments. The growing field of enterprise strategies however mainly shows longitudinal studies and case studies.

Discussion and future research

Implications for research and research agenda (RQ.5)

We conducted a systematic and structured literature review. The findings are intended to help researchers and practitioners to make sense of the accumulated knowledge in this interesting and emerging research field (Webster and Watson 2002). Our findings may also assist researchers in identifying potential outlets for their own work (Bandara et al. 2011) and in identifying research themes which might be of interest for future studies. Additionally, editors and reviewers are

supported in deciding whether articles under review have sufficiently referenced the existing body of research on social commerce. In particular, it helps to determine the extent to which their outlet is participating in the academic discussion on social commerce. Based on the results of our work, we discuss implications with respect to the social commerce framework by Liang and Turban (2011) and outline novel areas for future research that may yield interesting insights into the field but have not been covered yet. Moreover, we provide a novel research agenda comprising promising questions for future research raised in existing contributions as well as new questions derived from our analysis.

Using Liang and Turban's well-known framework allowed us to rigorously structure and categorize existing research along pre-defined research themes. Based on our own research and in-depth analysis of the different research themes, we propose to slightly adapt the existing framework to avoid overlaps. In particular, we suggest to merge the research themes *user behavior and adoption strategy*, *social process and network structure*, as well as *enterprise strategies and business model*. Thus, the adapted social commerce framework consists of six research themes (*user behavior and adoption strategy*, *website design*, *social process and network structure*, *enterprise strategies and business model*, *firm performance*, *security and privacy policy*) that describe the fields of social commerce and provide a basic rationale to structure the research landscape (cf. Fig. 7).

Based on the adapted social commerce research framework, we see the following promising research themes that may provide interesting further insights into the field (cf. also Table 3): First of all, as to the research themes *user behavior and adoption strategy*, studies on the impact of consumers' age and culture may constitute promising starting points for further research. In this context, it would be of interest for research and business alike, how older user groups such as silver surfers may be engaged in social commerce as mentioned by Brock et al. (2011). According to Chiu et al. (2014), utilitarian and hedonic values have direct effects on repeat purchase behavior. Thereof, more research needs to be

Fig. 5 Top 3 research methods in social commerce research by discipline

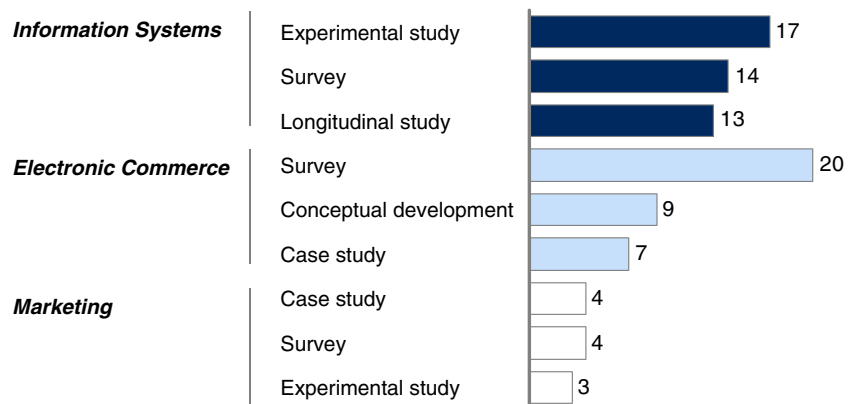
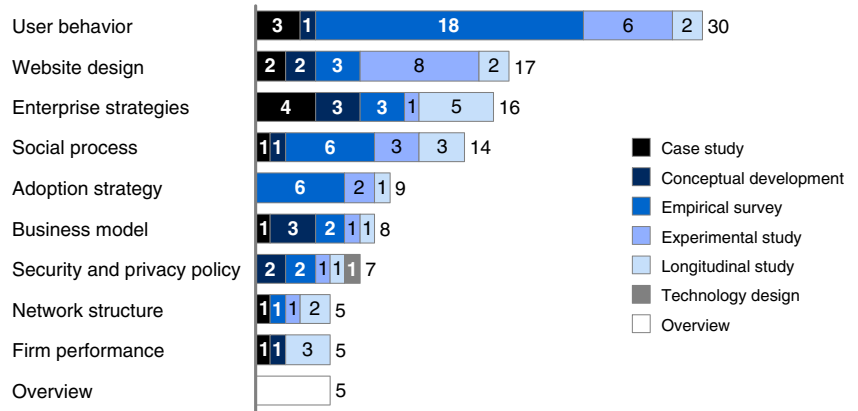


Fig. 6 Distribution of research methods by research theme



done to further investigate the relative importance of hedonic and utilitarian value components and their interplay in a social commerce setting. In light of social commerce adoption strategies, it seems of utter importance to identify the advocates (hubs) of social commerce applications similar to the importance of identifying brand advocates—this seems to be a promising novel research topic that may benefit from social network analysis. In addition, cultural factors may play an important role in the adoption of social commerce as research on social shopping behavior by Zhang et al. (2012) indicates. Another promising topic for future research in terms of user behavior leading to social commerce adoption is discussed by Chen et al. (2014), proposing that different kinds of active participation behaviors in online social networks, e.g. via content creation or content transmission, may play different roles in leading to the adoption of social commerce. Finally, further research is encouraged at the interplay of user generated content (UGC) and eWOM behavior on actual sales of social commerce websites (e.g. effect of positive and negative content on conversion rates).

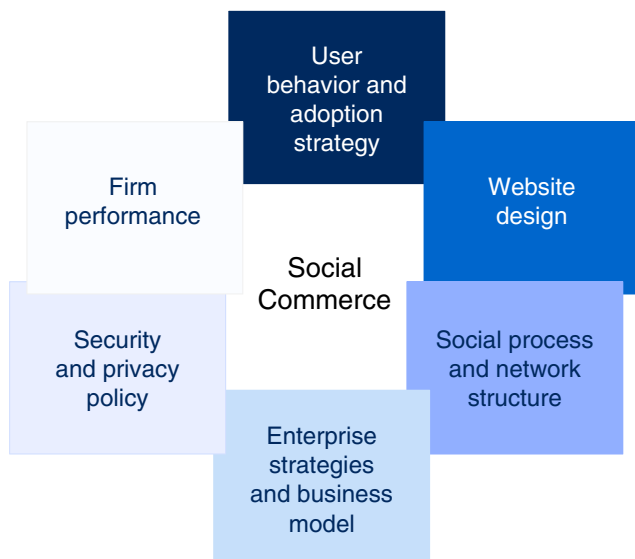


Fig. 7 Adapted social commerce research framework

Second, regarding the research theme *website design*, further studies on the effect of certain social shopping features such as the long-term effect of styles and tagging on sales of social shopping websites could be insightful. This seems especially interesting because Olbrich and Holsing (2011) found a negative relationship between these features and click-out behavior, but nonetheless expect these features to be of much value in the long-term, due to their stimulating nature in the consumer’s pre-purchase phase. Seedorf et al. (2014) take a slightly different perspective on social shopping technologies. They state that not all tasks benefit from a co-browsing technology, users might even be distracted from the task at hand by additional website elements, leading to lower task performance. Further research could address the potential overload of social website elements and technologies used to enable and enhance social commerce behavior, which may even have negative effects on social commerce behavior when too many social shopping features are promoted by the platform. In addition, as Macaulay et al. (2007) found that different user groups have different website design requirements, it would be interesting to explore which kinds of user groups are most responsive to social shopping features. Furthermore, the fact that online social referral systems differ from traditional electronic word of mouth referral systems because social behavior rules apply (Shi et al. 2013), opens up new possibilities to design effective incentive schemes for social referral systems. Finally, further research is needed with regard to the effective implementation of social commerce technologies and their respective impact on sales.

Third, regarding the research themes *network structure* and *social process*, which explore similar topics, such as the dynamics of recommendation networks as well as the diffusion of information, future research could explore the appropriateness of different types of social commerce network structures and the corresponding network evolution processes for facilitating commercial operations in such networks. This research theme combined with social network analysis methods is a promising novel field that has not been covered in detail so far. In addition, as Stephen and Toubia (2010)

indicate, there is a need for statistical models that are suitable for nowadays large network data sets and that enable the analysis of a wider range of effects, such as interdependence between nodes, strategic behavior as well as time dynamics. In terms of information diffusion processes Gruner et al. (2014) show that firm hosted online brand communities are very popular especially in the consumer durable goods industry. Gruner et al.'s (2014) model of different archetypes of online brand communities and their impact on sales and market share of new products implies that researchers should think more about the role of firm hosted online brand communities to explain new product success. Further studies could investigate which social processes behind different types of online brand communities support new product success and how such brand communities support social commerce.

Fourth, we also identified research gaps in regard to the research themes *enterprise strategies* and *business models*. For example, how can industrial companies successfully engage in social commerce? What are the essential value drivers in social commerce applications? What about the role of mobile applications in the commercialization of social interaction? Todri and Adamopoulos (2014) examined with “Pay-by-Tweet” a novel social commerce model. The newness of this application for customers is that it enables purchases without having to go through the traditional check-out process or even having to visit the electronic commerce website to purchase a product. Interesting research questions in this context are, for instance, how respective social commerce business models could evolve? What other social commerce applications may change the electronic commerce landscape in the future and how? In particular, marketers need to take into consideration what type of products would be more effective in maximizing the returns from a social commerce venture, as pointed out by Todri and Adamopoulos (2014). They argue that social commerce might be more effective for socially accepted products, while marketers could increase the effectiveness of such social commerce initiatives by especially promoting and emphasizing socially desirable product features. Another interesting, so far not covered area of research is, as pointed out by Zhang and Duan (2014), the link of offline and online channels.

Fifth, in the light of the findings of Brock et al. (2011) that users' perceptions of the benevolence and integrity of the online social network chosen by the online retailers influences their success, it becomes particularly obvious that *security and privacy policy* issues provide room for further research with high novelty. In Shen's (2012) study, participating students reported more privacy concerns on social shopping sites than on traditional electronic commerce sites, suggesting that security concerns might prevent them from using social shopping

sites in the future. Furthermore, Todri and Adamopoulos' (2014) found evidence that the size of a user's social network neighborhood negatively affects the user's likelihood of making a purchase via “Pay-by-Tweet”, contradicting marketers natural thinking that targeting users with the largest network is the most effective strategy. Hence, users do take into consideration potential reactions of their social network and privacy concerns might hinder the adoption of social commerce more than expected. As a consequence, targeting potential multipliers with large networks may need more effective and larger incentives and the investigation of various privacy instruments and settings may be helpful to craft effective social commerce strategies. Wilson et al. (2014) demonstrated that perceived impression management capabilities of a social commerce platform serve as key counterweight in the tension between users' benefits using online social networks and their privacy concerns. Future studies could expand this research by specifically investigating social benefits that are especially relevant in social (commerce) networks in the context of impression management. Against this background and considering the small number of publications dealing with *security and privacy policy*, it may be worthwhile to explore the effect of different security instruments as well as privacy protection strategies on users' perceptions of the respective social commerce platform to foster the adoption of social commerce sites.

Finally, as firms act under limited budgets, further research in regard to the research theme *firm performance* could investigate the impact, performance, and return on investment of their engagement in respective social commerce sites in more detail also with respect to different social media platform types. Li and Huang (2014) evaluated the monetary value of Twitter in light of NBA basketball players salary and Twitter followers. They conclude that Twitter has the potential to help small and medium businesses as well as start-ups in their initial stages, often with very limited marketing budgets, to increase revenue. Therefore, further research could for example analyze which social commerce applications and features are most effective in increasing sales or other relevant performance metrics.

Overall, our findings indicate that quantitative, empirical research has been the prevalent research method. Thus, future research could adopt further research methods such as more design-oriented research, theoretical concepts, as well as qualitative methods to tap the full potential of research methods.

Limitations

This study has several limitations. Although we conducted a broad and structured database search covering the major outlets in three main research disciplines (IS, Electronic

Table 3 Research agenda

Research theme	Future research questions (examples)
User behavior and adoption strategy	<ul style="list-style-type: none"> • How to engage older and less experienced users with social commerce applications? (<i>Age, experience</i>) • How does culture influence users' social shopping behavior? (<i>Culture</i>) • How do utilitarian and hedonic values affect social commerce adoption? (<i>Hedonic and utilitarian value</i>) • How do information and content sharing motivations differ between user groups? (<i>Information sharing</i>) • Which users are most influential key users in social commerce adoption of other users? (<i>Advocacy</i>) • Which factors of UCG and eWOM (e.g. positive, negative or neutral content) affect conversion rates on social commerce sites the most (<i>UCG, eWOM</i>)?
Website design	<ul style="list-style-type: none"> • How do design requirements of social commerce features and applications differ in regard to various user groups? (<i>Design requirements</i>) • How to design effective incentive schemes for social referral systems? (<i>Social referral systems</i>) • What are the effects of different social shopping features on performance metrics? (<i>Social shopping features</i>) • How much "social" is good for social commerce? (<i>Social overload</i>)
Social process and network structure	<ul style="list-style-type: none"> • Which type of social commerce network structure is most appropriate (in which context)? (<i>Network structure</i>) • How to design network evolution processes for facilitating commercial operations? (<i>Dynamic processes</i>) • What are appropriate statistical models to analyze large network data sets? (<i>Big data methods</i>) • Which social information processes behind different types of online brand communities support new product success? (<i>Information diffusion</i>)
Enterprise strategies and business model	<ul style="list-style-type: none"> • What are novel social commerce business models such as "Pay-by-Tweet"? (<i>Social commerce business models</i>) • What are new mobile applications for smartphones as well as tablets in the commercialization of social interactions? (<i>Mobile social commerce</i>) • Is social commerce only suited for socially desirable products? (<i>Product type</i>) • How can small businesses and startups with limited budgets engage effectively in social commerce? (<i>Small businesses</i>) • What is an effective channel strategy (offline and online) and how is the interplay of different channels, including social commerce, designed? (<i>Channel strategy</i>)
Firm performance	<ul style="list-style-type: none"> • How does social commerce engagement affect firm performance (over time) in terms of relevant metrics such as return on investment (RoI), sales, customer loyalty, repeat purchase behavior? (<i>Firm impact</i>) • Which social commerce applications benefit a firm's performance the most e.g. how does "Pay-by-Tweet", Pinterest or Facebook commerce improve a company's performance? (<i>Type of social commerce application</i>) • Do smaller businesses and startups benefit more or less from social commerce applications? (<i>Firm size</i>)
Security and privacy policy	<ul style="list-style-type: none"> • How can different security instruments and privacy protection strategies contribute to users' positive perception of a social commerce platform? (<i>Security instruments</i>) • Which privacy applications and features are most effective in fostering trust and in motivating users to share more content with their network? (<i>Trust and user engagement</i>) • How can companies target potential multipliers within large networks most effectively, supporting them to overcome potential privacy concerns? (<i>Incentive schemes</i>)

Commerce and Marketing), the number of the selected sources for the literature search process is limited, and there is a certain possibility that not all relevant articles were identified. Additionally, we did not include an equal number of publication outlets for each research discipline, which harbors the risk of under- or over-representing one discipline or the other. Although selecting suitable search terms from the literature, additional search terms might have uncovered additional relevant papers. However, this structured literature review allows for a transparent, replicable, and broad overview of social commerce research including major outlets in three research disciplines as well as insightful quantitative analyses on the number of publications and their development over time. Despite these limitations, we hope that our findings will help interested parties to get a first overview and better understanding of the body of knowledge on social commerce research created since 2007.

Conclusion

Social commerce has emerged into a phenomenon of global interest for marketers, businesses, and researchers alike (e.g., Wang and Zhang 2012). The goal of our paper is to provide a systematic and structured literature overview of social commerce research as a first step towards understanding the development of social commerce since 2007. Based on our structured search resulting in 116 papers published in IS, Electronic Commerce, and Marketing journals as well as IS conferences, we carved out and assessed the knowledge and the research themes predominantly addressed so far. In so doing, we analyzed how the academic discussion evolved over time (RQ.1), which publication outlets are most receptive (RQ.2), which research themes have already been covered (RQ.3), and what methodological orientations are most prevalent (RQ.4). Finally, based on our insights, we proposed a research agenda for future research on social commerce (RQ.5).

Regarding the first research question, we found that the publication activity increased over time from five articles in 2007 to 16 articles in 2014 with 67 % of all articles being published within the past 4 years. As to the second research question, we found that *Information Systems Research*, the *International Journal of E-Commerce*, and the *Journal of Marketing Research* are the most receptive outlets in each of the three research disciplines IS, Electronic Commerce, and Marketing. Overall, most articles can be attributed to the proceedings of the *International Conference of Information Systems*. To systematically explore research areas and synthesize the corresponding literature (RQ.3), we followed the categorization by Liang and Turban (2011) resulting in nine research themes (ordered according to frequency): user behavior, website design, enterprise strategies, social process, adoption strategy, business model, security and privacy policy,

network structure, and firm performance. In addition, we found that social shopping websites and social networking sites are the most frequently analyzed social media platform types. Finally, regarding the fourth research question, our findings indicate that survey and experimental study are the prevalent research methods used in social commerce research. Additionally, we showed that the primary methodological orientation depends on the research discipline: While empirical survey is the most widely used method for social commerce research in IS as well as in Electronic Commerce research, in IS however, other methodologies such as experimental and longitudinal studies are almost equally popular. Finally, based on the results of our literature review, we proposed potential areas for future research that may provide interesting further insights into the field of social commerce but have not been yet covered. We hope that our results will stimulate and guide future research in this evolving field which “opens the door to a new stream of research whereby community, user-generated content, and e-commerce converge” (Noh et al. 2013, p. 245).

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