

On the Factors Influencing Consumers' Adoption of Social Commerce – A Review of the Empirical Literature

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Abstract

Social commerce, the combination of e-commerce activities and social media, is a lucrative means for e-commerce companies to increase their sales volumes. As social commerce initiatives considerably depend on the consumers' social interactions, it becomes important for companies to understand how consumers can be stimulated to participate in social commerce. While several empirical studies have already focused on investigating what factors influence consumers to adopt to social commerce, the findings of these studies are scattered across the literature base, sometimes not transparent, and not straightforwardly comparable. To synthesize these findings, we conduct a systematic review of the empirical literature on the consumers' adoption of social commerce. In particular, we identify and classify conceptually similar factors and outcome variables (i.e., behavioral intentions and/or behaviors). Moreover, we apply a vote-counting technique and a sign test to aggregate the reported effects between the factors and outcome variables. After analyzing 61 academic publications, we contribute a structured and comprehensive list of factors and their potential effects on various adoption-related outcome variables. Our results reveal that for some factors, such as trust, usefulness, or social influence, the effects point in a clear direction, while for several other factors, such as enjoyment, risk, or social presence, the effects are yet not clear and require further investigations.

Keywords: Social commerce, adoption, consumer behavior, literature review, vote counting

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Introduction

Social commerce is considered as a form of electronic commerce (e-commerce) that combines commercial activities and social media in order to enable consumers to actively participate, interact, and communicate in the online selling and buying of products and services (Wang and Zhang 2012; Zhou et al. 2013). On social commerce platforms, consumers can not only purchase products but also share their shopping experiences, get advice from trusted peers, or collaborate online to custom-design products or to receive price discounts (Curty and Zhang 2013; Huang and Benyoucef 2013). Promoting the consumers' social interactions and relationships, which are formed through the use of social media, is a key characteristic of social commerce and can significantly influence the consumers' purchase behavior (Liang et al. 2011). Consequently, many e-commerce companies today are highly interested in figuring out how they can effectively deploy social commerce to increase their sales volumes (Stephen and Toubia 2010; Zhou et al. 2013). As social commerce initiatives considerably depend on the consumers' social interactions, it becomes important for companies to understand how consumers can be stimulated to participate in social commerce (Turban et al. 2010; Zhang and Benyoucef 2016).

While research on social commerce is still at an early stage (Baethge et al. 2016; Zhang and Benyoucef 2016), several empirical studies have already explored what factors influence consumers to adopt to social commerce. However, understanding the results of these studies is difficult due to the following reasons. First, some of the examined factors, such as trust, have been conceptualized in different ways. For instance, trust in company (Shi and Chow 2015), trust towards community (Chen and Shen 2015), or trust in website (Hsiao et al. 2010). Second, different outcome variables (i.e., behavioral intentions and/or behaviors) have been used to measure the consumers' adoption of social commerce, such as consumers' purchase intention/behavior (Lu et al. 2016; Pöyry et al. 2013), continuance intention/behavior (Hajli et al. 2015; Liang et al. 2011), or information sharing intention/behavior (Chen and Shen 2015; Liu et al. 2016b). Third, different effects have been identified between the same factors and outcome variables, such as trust might or might not significantly influence the consumers' purchase intention (Farivar et al. 2016; Hsiao et al. 2010).

As a result, the current social commerce literature does not provide a clear understanding of the factors that influence consumers to adopt to social commerce. Therefore, researchers investigating this topic first have to synthesize the fragmented and often inconclusive findings in the literature. Considering the current number of social commerce publications (cf. section 3), this task can easily become cumbersome and time-consuming, however. Moreover, there is a risk that existing concepts are overlooked and reinvented, which would make the understanding of social commerce adoption even more complicated. While there already exist a few literature reviews on social commerce, most of these studies either focus on the concept of social commerce or its historical evolution and not on the consumers' adoption of social commerce (Baethge et al. 2016; Busalim and Hussin 2016; Zhou et al. 2013). So far, only Zhang and Benyoucef (2016) review the literature on the consumer behavior in social commerce and present a framework that integrates various factors and outcome variables. However, the framework does not provide information about the different conceptualizations of the factors and their potential effects on the outcome variables. In the present paper, we consequently aim to synthesize the different conceptions in the social commerce literature and contribute to a better understanding of the factors

influencing the consumers' adoption of social commerce. We address the following research questions:

1. *What factors and outcome variables have been investigated in the literature on social commerce adoption?*
2. *What effects exist between the identified factors and outcome variables?*

To answer these questions, we systematically review the literature on social commerce adoption. In so doing, we contribute to the social commerce literature by synthesizing past research to provide a structured and comprehensive list of factors and their potential effects on various adoption-related outcome variables.

The remainder of this paper is organized as follows. First, we briefly explain the concept of social commerce and illustrate the basic theories behind social commerce adoption. Second, we describe our research methodology to systematically review the literature on the consumers' adoption of social commerce. Third, we present the identified factors and their potential effects on various adoption-related outcome variables. In the subsequent section, we discuss the implications and limitations of our work. Finally, we conclude with a brief summary.

Theoretical Background

In this section, we provide background information on the concept of social commerce and on the basic theories behind social commerce adoption.

Concept of Social Commerce

Historically, the roots of social commerce can be traced back to the late 1990s (Curty and Zhang 2011; Wang and Zhang 2012). At this time, e-commerce pioneers, such as Amazon and eBay, introduced features on their websites that enabled consumers to write product reviews or to rate the performance of sellers (Saundage and Lee 2011). With the emergence of web 2.0 and social media, e-commerce companies started to integrate new technologies into their websites to provide consumers a more social and interactive shopping experience (Curty and Zhang 2013; Ickler et al. 2009). In 2005, Yahoo! first used the term social commerce to describe a new collaborative shopping feature on its shopping platform that allowed consumers to create, share, and comment on product lists (Wang and Zhang 2012). In 2007, first academic publications appeared that explicitly referred to the concept of social commerce (e.g., Leitner and Grechenig 2007a; Leitner and Grechenig 2007b).

With its characteristic combination of economic, social, and technological aspects, social commerce has drawn attention from different research disciplines such as information systems, marketing, or sociology (Wang and Zhang 2012; Zhou et al. 2013). As a result, current literature provides a variety of social commerce definitions, which makes it difficult to derive a clear understanding of the concept. For instance, Dennison et al. (2009, p. 2) describe social commerce as "the concept of word-of-mouth, applied to e-commerce". According to Stephen and Toubia (2010, p. 215), social commerce connects individual consumers as sellers and represents a form of "Internet-based social media that allow people to participate actively in the marketing and selling of products and services in online marketplaces and communities". Liang and Turban (2011, p. 6) define social commerce as "a subset of e-commerce that involves using social media to assist in e-commerce transactions and activities". In a broader sense, Wang and Zhang (2012, p. 106) describe social commerce as "a form of commerce that is mediated by social media and is converging both online and offline environments".

Different understandings also exist of what can be considered as a social commerce website. According to the literature, two major types of social commerce websites can be identified: (1) social networking sites that incorporate commercial features (e.g., product catalogs, shopping carts, or payment services); and (2) traditional e-commerce websites that add social media-based features (e.g., discussion forums, rating and review tools, or share and like buttons) to facilitate consumers' social interactions and exchanges (Curty and Zhang 2011; Liang and Turban 2011).

When comparing social commerce and e-commerce, social commerce is considered as a subset or evolution of e-commerce that enhances the consumers' shopping experience by promoting social interactions and relationships, while traditional e-commerce focuses on maximizing the efficiency of transactional processes (Liang and Turban 2011; Wang and Zhang 2012). Conceptually similar to social commerce are the terms "social shopping", "collaborative shopping", and "collaborative commerce". In literature, all three terms have been used synonymously to refer to the concept of social commerce or have been considered as a subset of social commerce (Olbrich and Holsing 2011; Wang and Zhang 2012; Zhou et al. 2013).

In this study, we adopt the definition of Liang and Turban (2011) and consider social commerce as a form of e-commerce that involves using social media to support e-commerce transactions and activities. In so doing, we intend to obtain a holistic view of the consumers' adoption of social commerce as this definition is not limited to a specific set of consumer activities (e.g., purchasing, marketing, or selling activities) or to a specific type of social commerce websites (e.g., social networking websites, e-commerce websites).

Basic Theories behind Social Commerce Adoption

As social commerce is closely related to e-commerce, basic theories used to explain e-commerce adoption have also been applied in the context of consumers' adoption of social commerce (Liang et al. 2011; Wang and Zhang 2012). Referring to the e-commerce literature, an individual consumer's adoption of e-commerce can be defined as "the consumer's engagement in online exchange relationships with Web vendors" (Pavlou and Fygenon 2006, pp. 115-116). To examine the consumers' adoption of e-commerce, behavioral theories such as the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), or the Technology Acceptance Model (TAM) have been often used as lenses for analysis (Gefen et al. 2003; Grandón et al. 2011; Koufaris 2002; Pavlou and Fygenon 2006). In general, all three theories posit that an individual's behavior can be predicted by his or her intention towards the behavior. However, different factors are suggested by these theories to determine the individual's behavioral intention. In the TRA, the behavioral intention depends on an individual's attitude and on the subjective norms concerning the behavior (Fishbein and Ajzen 1975). As an extension of the TRA, the TPB uses the factor perceived behavioral control besides subjective norms and attitude to determine the behavioral intention (Ajzen 1985). In the TAM, which is grounded on the TRA, perceived ease of use and perceived usefulness are used to explain a user's attitude and behavioral intention towards using a certain technology (Davis 1989). In the e-commerce literature, much effort has been spent to adapt these theories to the specific characteristics of e-commerce. As a result, various research models have been developed and a wide range of different factors has been identified that influence the consumers' intentions and/or behaviors on e-commerce websites (Cheung et al. 2005).

By drawing on the TRA, TPB, and TAM, we use the term “adoption” in this study to refer to the different behavioral intentions and/or behaviors of consumers on social commerce websites. In line with the literature, we also use the term “outcome variables” in this study to refer to the consumers’ behavioral intentions and/or behaviors as these variables have typically been employed as outcome measures in studies focusing on the consumers’ adoption of social commerce (Bai et al. 2015; Liang et al. 2011; Wang and Yu 2017).

Research Methodology

To analyze the literature on the consumers’ adoption of social commerce, we conducted a systematic literature review. Following the guidelines of Webster and Watson (2002), our literature review consisted of two steps: (1) identifying the relevant literature; and (2) structuring the review. In the following subsections, we describe how we performed these steps.

Identifying the Relevant Literature

We started with specifying our literature search process. In general, a literature search comprises the querying of scholarly databases and conducting backward and/or forward searches (Webster and Watson 2002). For the literature search, we adopted the procedure of Zhou et al. (2013), who conducted a bibliometric study on the concept of social commerce. To search for potentially relevant publications, we used the following databases: ACM Digital Library, AIS Electronic Library, EBSCOhost Business Source Complete, IEEE Xplore, ScienceDirect, SpringerLink, and Thomson Reuters Web of Science. In so doing, our literature search covered a broad range of academic publications, including high-quality IS journals and conference proceedings. We did not limit our search to a specific set of journals because we wanted to obtain a complete and up-to-date picture of the social commerce literature. Following Zhou et al. (2013), we searched these databases using keywords such as “social commerce”, “social shopping”, “collaborative commerce”, and “collaborative shopping”. By using these keywords, we concentrated our search on publications that explicitly refer to the concept of social commerce or to conceptually similar forms of social commerce (cf. section 2). We did not search for the keyword “adoption” because not all publications focusing on social commerce adoption use this term. As search fields, we used title, abstract, and keywords where applicable. Considering that first research on social commerce emerged in 2007 (Wang and Zhang 2012; Zhou et al. 2013), we searched for literature published between January 2007 and September 2016. To ensure a certain quality level, we only considered peer-reviewed academic publications (including journal articles, conference papers, and book chapters). Reports, whitepapers, and other types of literature were excluded. In addition, we only focused on publications written in English.

By following the above-described procedure, we identified 767 articles referring to the concept of social commerce. After removing duplicate entries, we obtained 491 unique articles. We then screened these articles on their relevance to our research questions. The screening based on examining the title, abstract, and, if necessary, the full text of each article. Consequently, articles that investigate the effects of one or more factors on the consumers’ intentions and/or behaviors on social commerce websites were classified as relevant. Furthermore, relevant articles must provide empirical evidence about the effects of the identified factors. Conceptual studies and research-in-progress papers were excluded. Moreover, we excluded duplicate articles of authors who reported similar results by using the same data sets. In this way, we reduced the list of relevant articles to 53. As recommended by Webster and Watson (2002), we performed backward and

forward searches on these articles. By doing so, we additionally identified 8 relevant articles. Finally, a total set of 61 relevant articles remained for further analysis and classification. The set consisted of 42 journal articles, 17 conference papers, and 2 book chapters. The articles were published between the years 2010 and 2016.

Structuring the Review

To synthesize our results, we followed the recommendations of Webster and Watson (2002) to use a concept-centric approach. In general, concepts determine the structuring framework of a review (Webster and Watson 2002). In our review, the concepts are represented by the factors and outcome variables that have been investigated in the relevant literature on social commerce adoption. For this purpose, we read each article carefully and compiled a list of all examined factors, outcome variables, and the reported effects between factors and outcome variables (i.e., significant negative, non-significant, and significant positive effects). Note that only factors were added to the list, which have been assumed in the literature to have a direct effect on the outcome variables. For instance, Kim and Park (2013) examine how various seller and website characteristics (e.g., reputation, size, transaction safety, communication, etc.) influence the consumers' trust and how trust influences the consumers' purchase and word-of-mouth intentions. Accordingly, we added the factor "trust" and the two outcome variables (i.e., "purchase intentions", "word-of-mouth intentions") to our list but not the various seller and website characteristics of social commerce. To further synthesize the results, we grouped conceptually similar factors together by examining their definitions and measurement items. For instance, all trust-related factors such as "trust", "trustworthiness", "trust in members", and "trust in company" were grouped under the factor "trust". Conceptually different factors that had only been examined in one article were grouped under "others". In the same way, we grouped the outcome variables. For instance, "intention to purchase products", "intention to buy", and "purchase behavior" were grouped under the outcome variable "purchase intention/behavior". To highlight the importance of the factors, we sorted the list in descending order beginning with the factor that had been examined in most of the articles. The result of this procedure was a structured and comprehensive list of factors and their potential effects on various adoption-related outcome variables (cf. Appendix A).

To condense the results of the factors that had been examined in more than one article, we counted all similar effects (i.e., significant negative effects, non-significant effects, significant positive effects) between the factors and outcome variables. For instance, Liang et al. (2011) and Hajli et al. (2015) report a significant positive effect of social support on the consumers' continuance intention/behavior. Accordingly, we counted two positive effects of the factor "social support" on the outcome variable "continuance intention/behavior". Studies reporting multiple effects of one factor were counted individually. For instance, Kwahk and Ge (2012) report a significant positive effect of informational social influence and a significant negative effect of normative social influence on the consumers' purchase intention. Consequently, we counted one positive and one negative effect of the factor "social influence" on the outcome variable "purchase intention/behavior". Counting the number of similar effects corresponds to the vote-counting method developed by Light and Smith (1971). In general, vote counting is considered as a simple meta-analysis technique in which the number of significant positive, significant negative and non-significant findings is compared and the category with the largest number is used to determine the direction of a focal relationship (Cooper 1998). However, vote counting has some inherent limitations (Hedges and Olkin 1980; King and He 2005). For instance, it does not take into account differences in the sample

sizes, effect sizes, or the applied data analysis approaches. The presented numbers of significant positive, significant negative, and non-significant effects should therefore be interpreted with caution. We applied vote counting in our review because it enabled us to provide a quantitative summary of the reported effects and to detect causal relationships that require further empirical investigations. Moreover, we considered vote counting as appropriate because research on social commerce is still at an early stage and not all of the relevant articles provide information about the sample size, effect size, or the applied data analysis approach. To overcome some of the shortcomings of vote counting, we followed the recommendations of Cooper (1998) and combined the vote-counting results with a sign test.

Results

Figure 1 presents the concept-centric classification of the identified factors and outcome variables. Overall, we identified 16 factors, which were examined in more than one study. These factors are: *trust*, *usefulness*, *enjoyment*, *social influence*, *social support*, *value*, *ease of use*, *relationship quality*, *attitude*, *risk*, *commitment*, *social commerce constructs*, *familiarity*, *satisfaction*, *social presence*, and *uncertainty*. Moreover, we identified 6 outcome variables which have been used in the relevant studies to measure the consumers' adoption of social commerce. These variables are: *use intention/behavior*, *purchase intention/behavior*, *continuance intention/behavior*, *information sharing intention/behavior*, *information seeking intention/behavior*, and *information disclosure intention/behavior*. In the following subsections, we will first provide information on the outcome variables and then describe the frequently examined factors (i.e., factors examined in more than one study) and their effects on the outcome variables. We focus on the frequently examined factors to find out if these factors have been conceptualized in different ways and if there exist differences in the reported effects of these factors. The full list of all identified factors, including the factors that have only been examined in one study, and their effects can be found in Appendix A.

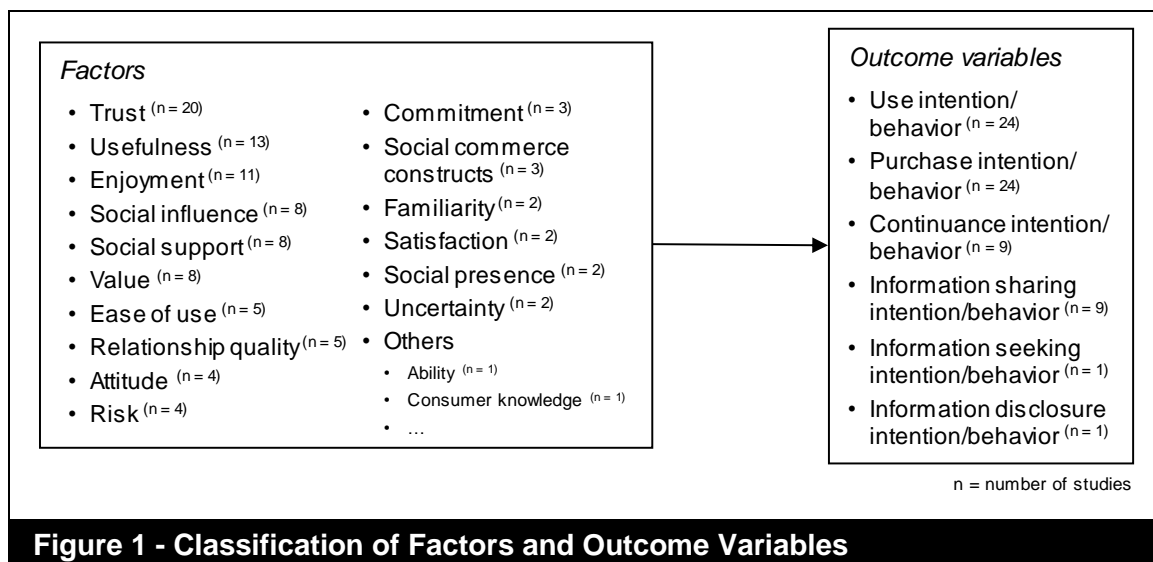


Figure 1 - Classification of Factors and Outcome Variables

Findings on the Outcome Variables

Table 1 describes the identified outcome variables. As illustrated in Figure 1, 24 studies focus on the consumers' use intention/behavior, which addresses the general use of a social commerce website. In these studies, the variable use intention/behavior or a conceptually similar variable is used to refer to a combination of social commerce activities that consumers can do on a social commerce website. For instance, Shen (2012a), Shin (2013), and Teh and Ahmed (2011) consider it as using a social commerce website to discover new products, to purchase products, and to recommend products to other consumers. In a similar way, Liang et al. (2011), Hajli and Sims (2015), and Zhang et al. (2014) use the variable social commerce intention/behavior to refer to activities such as purchasing products recommended by other consumers, and considering, receiving, and sharing of shopping information. Farivar et al. (2016), Kang and Johnson (2015), and Zhang et al. (2015) use the variable participation intention/behavior to refer to similar activities.

The variable purchase intention/behavior, which is also investigated in 24 studies, refers to the purchasing of products and/or services on a social commerce website. Examples of studies using this variable are: Anderson et al. (2014), Hajli (2014a), Hsiao et al. (2010), Liu et al. (2016a), and Ng (2013). Moreover, some studies use the variable impulsive buying intention/behavior in this context to focus on the spontaneous and unplanned purchases of consumers on social commerce websites (Huang 2016; Song et al. 2015; Xi et al. 2016; Xiang et al. 2016).

9 studies examine the variable continuance intention/behavior, which addresses the continuous use of a social commerce website, including activities such as revisiting a social commerce website and repurchasing products and/or services from a social commerce website (Hajli et al. 2015; Jang et al. 2013; Kim et al. 2013b; Liang et al. 2011). In a similar way, some researchers use the variable loyalty to measure whether a consumer is interested in continuously using a social commerce website (Anderson et al. 2014; Chen et al. 2014; Gamboa and Gonçalves 2014; Lee et al. 2012; Zhang et al. 2016).

To investigate the consumers' willingness to share shopping information with other consumers on a social commerce website, 9 studies employ the variable information sharing intention/behavior (Chen and Shen 2015; Cheung et al. 2015; Liu et al. 2013; Liu et al. 2016b; Liu et al. 2014). In this context, some studies also conceptualize this variable as electronic word-of-mouth (eWOM) intention/behavior (Chen et al. 2014; Hudson et al. 2015; Kim and Park 2013; Shi and Chow 2015).

Finally, 1 study examines the consumers' intention/behavior to seek shopping information provided by other consumers on a social commerce website (Qin and Kong 2015), and 1 study examines the consumers' intention/behavior to disclosure personal information on a social commerce website (Sharma and Crossler 2014a).

Table 1 - Definition of Outcome Variables	
Outcome variable	Definition
Use intention/behavior	Consumers' intention or behavior to use a social commerce website. Refers to a combination of various social commerce activities, such as purchasing products recommended by other consumers, and considering, receiving, and sharing of shopping information. Also conceptualized as social commerce intention/behavior or participation intention/behavior.
Purchase intention/behavior	Consumers' intention or behavior to purchase products (planned or impulsively) on a social commerce website.
Continuance intention/behavior	Consumers' intention or behavior to continuously use a social commerce website (e.g., revisiting the website, repurchasing products, or recommending products to other consumers). Also conceptualized as loyalty.
Information sharing intention/behavior	Consumers' intention or behavior to share shopping information with other consumers on a social commerce website. Also conceptualized as electronic word-of-mouth (eWOM) intention/behavior.
Information seeking intention/behavior	Consumers' intention or behavior to seek shopping information on a social commerce website.
Information disclosure intention/behavior	Consumers' intention or behavior to disclosure information on a social commerce website.

Findings on the Factors and their Effects

Table 2 lists the frequently examined factors together with their effects on the outcome variables. The factors are ordered descending by the number of studies (n). The effects are counted by applying the vote-counting technique (cf. section 3) and are classified into the groups significant negative effect ($p < 0.05$), non-significant effect, and significant positive effect ($p < 0.05$). For each factor, we provide a summary of the effects per outcome variable (SPV, summary per outcome variable) and a summary of the effects per factor (SPF, summary per factor). The former is used to illustrate the percentage of studies that confirm an assumed effect between the factor and outcome variable. The latter is used to illustrate the factors overall confirmed effects on the outcome variables. In addition, we provide a short definition for each factor and we illustrate how the factor has been conceptualized by listing the names of its constructs.

According to our results, the factor trust has received the most attention in the literature on social commerce adoption ($n = 20$). In the relevant studies, various forms of trust have been investigated. For instance, Chen and Shen (2015) and Ng (2013) demonstrate that the consumers' trust in the community of a social commerce website can significantly increase the consumers' use and purchase intention/behavior. Moreover, Farivar et al. (2016) and Qin and Kong (2015) report that the consumers' trust in the social commerce website can significantly increase the consumers' use, purchase, and information seeking intention/behavior. Other studies present a significant positive effect of the consumers' trust in the seller or the company behind the social commerce website on the consumers' use, purchase, and information sharing intention/behavior (Lu et al. 2016; Ruan et al. 2016; Shi and Chow 2015). Unclear is the importance of the consumers' trust towards the members of a social commerce site. Farivar et al. (2016) report a non-significant effect of this variable on the consumers' use and purchase intention/behavior, while Chen and Shen (2015) report a significant positive effect on the purchase intention/behavior and a non-significant effect on the information sharing intention/behavior. Other studies focus on conceptually similar forms of trust but without redefining the construct (Gamboa and Gonçalves 2014; Hajli 2012; Hajli and Sims 2015; Liu et al. 2013; Shen 2012b; Teh and Ahmed 2012; Zhang et al. 2015). Overall, our findings indicate that the factor trust plays an important role in the consumers' adoption

of social commerce (26/32 effects are significantly positive). Trust has been reported to significantly increase the consumers use (8/10), purchase (10/11), continuance (2/2), information sharing (5/7), and information seeking (1/1) intention/behavior.

Derived from the TAM (cf. section 2), the factor usefulness is examined in 13 studies. 12 studies (e.g., Featherman and Hajli 2015; Hajli 2012; Kim 2015; Noh et al. 2013; Shen 2012a) define the variable as usefulness or perceived usefulness and 1 study (Gatautis and Medziausiene 2014) uses the conceptually similar variable performance expectancy, which is part of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003). In these studies, usefulness has been confirmed to influence the use (7/8), purchase (3/3), and information disclosure (1/1) intention/behavior. Not clear is the effect of usefulness on the information sharing intention/behavior (0/1). Overall, the importance of usefulness is represented by 11/13 studies reporting a significant positive effect on the outcome variables. Besides usefulness, the factor enjoyment has been investigated in 11 studies. In these studies, enjoyment has been measured by employing constructs such as perceived enjoyment or flow, which have been operationalized with similar items (e.g., Liu et al. 2016a; Shen 2012a; Shin 2013; Zhang et al. 2014). In context of information sharing, Liu et al. (2014) and Liu et al. (2016b) investigate the consumers' enjoyment of helping other consumers and report a significant positive and a non-significant effect (1/2). In addition, enjoyment has significant positive effects on the use (5/6), purchase (2/3), and information disclosure (1/1) intention/behavior. Overall, 9/12 of the reported effects confirm a significant positive effect of enjoyment on the outcome variables. The findings on the factors usefulness and enjoyment underpin the argumentation of Wang and Zhang (2012) that social commerce combines utilitarian and hedonic aspects.

Two factors that are related to the consumers' social interactions and relationships are social influence and social support. Both factors have been examined in 8 studies. Different forms of social influence have been investigated such as normative social influence (also conceptualized as subjective norm or normative belief) and informational social influence (e.g., Featherman and Hajli 2015; Gatautis and Medziausiene 2014; Kwahk and Ge 2012; Shin 2013; Xi et al. 2016). Derived from the TRA (cf. section 2) and the UTAUT, social influence has been confirmed to have significant positive effects on the use (7/7), purchase (3/4), and continuance intention (1/1). Interestingly, Kwahk and Ge (2012) detect a negative effect of normative social influence on the purchase intention/behavior. Overall, 11/12 of the reported effects confirm a significant positive effect of social influence on the outcome variables. Clear effects have been associated with the factor social support (9/9 significant positive effects). Studies confirm that social support positively influences the consumers use (5/5), purchase (2/2), and continuance (2/2) intention (e.g., Bai et al. 2015; Hajli 2014b; Li et al. 2014; Liang et al. 2011; Shin 2013; Zhang et al. 2014).

Another factor that has been investigated in 8 studies is value, which stems from the marketing literature (Zeithaml 1988). In the social commerce literature, different forms of value have been examined, such as perceived value, utilitarian value, hedonic value, informational value, and social value (e.g., Gamboa and Gonçalves 2014; Hu et al. 2016; Kim et al. 2013a; Ruan et al. 2016; Sun et al. 2016). According to the literature, value has been reported to have positive effects on the use (4/5), purchase (6/7), and continuance (3/4) intention/behavior. Overall, 13/16 effects are significantly positive.

5 studies examine the factor ease of use, which is part of the TAM. To measure ease of use, 4 studies (Featherman and Hajli 2015; Hajli and Lin 2015; Noh et al. 2013; Teh and Ahmed 2012) use the variable perceived usefulness and 1 study (Gatautis and

Medziausiene 2014) employs the conceptually similar variable effort expectancy, which is suggested by the UTAUT. According to these studies, ease of use has a significant positive effect on the use (3/4) and the purchase (1/1) intention/behavior. However, Teh and Ahmed (2012) report a non-significant effect of ease of use on the use intention/behavior. Derived from the marketing literature, the factor relationship quality is typically considered as a combination of trust, commitment, and satisfaction (Hennig-Thurau et al. 2002). Referring to our results, 5 studies examine this factor (Hajli 2014b; Hudson et al. 2015; Liang et al. 2011; Wang and Hajli 2014; Zhang et al. 2016). According to these studies, relationship quality positively influences the consumers' use (3/3), continuance (2/2), and information sharing (1/1) intention/behavior. All reported effects of relationship quality on the outcome variables are significantly positive (6/6).

According to the TRA and the TPB (cf. section 2), attitude is an important factor that influences an individual's behavioral intention. In the context of social commerce adoption, 4 studies demonstrate that the consumers' attitude towards social commerce has significant positive effects on the use (2/3) and continuance (1/1) intention/behavior. However, Teh and Ahmed (2011) examine a non-significant effect of attitude on the purchase intention/behavior. Given the distant and impersonal nature of the online environment, risk is considered as an inevitable element of e-commerce (Pavlou 2003). Referring to the social commerce literature, risk has been examined in 4 studies. In these studies, various forms of risk have been investigated such as perceived risk (Ruan et al. 2016), perceived privacy risk (Sharma and Crossler 2014a), assessed usage risk (Featherman and Hajli 2015), perceived participation risk (Farivar et al. 2016), and perceived commerce risk (Farivar et al. 2016). Ruan et al. (2016) report a non-significant effect of risk on the use intention/behavior, while Featherman and Hajli (2015) and Farivar et al. (2016) detect significant negative effects (2/3). In addition, Farivar et al. (2016) report a significant negative effect of risk on the purchase (1/1) intention/behavior and Sharma and Crossler (2014a) report a significant negative effect of risk on the information disclosure (1/1) intention/behavior. Overall, 4/5 effects are significantly negative.

Rooted in relationship marketing, commitment is considered as a crucial factor that drives the persistence of social relationships (Morgan and Shelby 1994). According to our results, 3 studies report significant positive effects of commitment on the use (2/2) and the continuance (2/2) intention/behavior (Chen and Shen 2015; Gamboa and Gonçalves 2014; Zhang et al. 2015). Some attention has also been given to the social features and/or social platforms that enable social commerce, such as, ratings and reviews, recommendations and referrals, or forums and communities. Conceptualized as social commerce constructs, 3 studies report significant positive effects of this variable on the use (2/2) and the purchase (1/1) intention/behavior (Hajli 2015; Hajli and Sims 2015; Wang and Hajli 2014).

Factors that have been examined in 2 studies are familiarity, satisfaction, social presence, and uncertainty. Referring to familiarity, 1 study (Sharma and Crossler 2014b) provides evidence that familiarity positively influences the consumers' use intention/behavior (1/1), and 1 study (Ng 2013) reports a non-significant effect of familiarity on the purchase intention/behavior (0/1). Also derived from marketing literature, the factor satisfaction has been confirmed to positively affect the consumers' continuance (4/4) intention/behavior (Gamboa and Gonçalves 2014; Jang et al. 2013). In these studies, different forms of satisfaction have been investigated such as customer satisfaction (Gamboa and Gonçalves 2014) or site/coupon satisfaction (Jang et al. 2013). To facilitate consumers' social interactions, social commerce platforms provide

features that enable consumers to create their own identities and to present themselves (Huang and Benyoucef 2013). In this context, 2 studies have assumed that the factor social presence positively influences the consumers' use intention (Sharma and Crossler 2014b; Zhang et al. 2014). However, Zhang et al. (2014), who investigated two different social commerce websites, reported a significantly positive effect and a non-significant effect of social presence on the use intention/behavior. In addition, Sharma and Crossler (2014b) also report a non-significant effect of social presence on the use intention/behavior. According to these findings, it seems not clear if social presence has a significant impact on the consumers' adoption of social commerce (1/3 of the effects are significant positive). However, findings in the literature indicate that social presence can influence the consumers' intentions/behaviors on social commerce websites through other factors, such as trust, enjoyment, or perceived usefulness (Hwang et al. 2014; Kim 2015; Shen 2012a; Zhang et al. 2014). Similar to risk, the factor uncertainty negatively affects the outcome variables. Bai et al. (2015) and Hwang et al. (2014) report 3/3 significant negative effects of uncertainty on the purchase intention/behavior.

Finally, Table 3 presents the results of the sign test. We use the sign test to verify whether the reported effects per factor indicate that one direction occurs more frequently than chance would suggest. It helps us to reveal the relative strengths of the effects by comparing the number of positive findings and the overall number of findings. We performed the sign test as recommended by Cooper (1998). For each factor, a z score (i.e., standard normal deviate) is calculated by using the formula of Cooper (1998, p. 118). The formula is illustrated in Appendix B. Significance levels (i.e. two-tailed p-values) are calculated on the z scores. As the results of the sign test demonstrate, the factor trust can clearly be considered as an important factor in the consumers' adoption of social commerce as the direction of the reported effects is highly significant ($p < 0.001$). Both social influence and social support can also be considered to play a significant role in the consumers' adoption of social commerce (direction of effects is significant at $p < 0.01$). Other factors for which the direction of effects is confirmed as statistically significant are usefulness, value, relationship quality, commitment, and satisfaction ($p < 0.05$). Factors for which the direction of the effects are not confirmed to be statistically significant are enjoyment, ease of use, attitude, risk, social commerce constructs, familiarity, social presence, and uncertainty. Note that the results of the sign test should be interpreted with caution due to the low number of studies behind most of the factors. This means that the results can change when a new study confirms or disconfirms one or more effects.

Table 2 - Frequently Examined Factors and their Effects						
Trust (n = 20)						
Definition	The confidence a person has in his or her favorable expectations of what another party (e.g., person or company) will do, based, in many cases, on previous interactions (Gefen 2000). Willingness to be vulnerable to another party based on beliefs in ability, benevolence, and integrity (Gefen et al. 2003; McKnight et al. 2002; Pavlou 2003).					
Constructs	Trust, perceived trust, perceived trustworthiness of SNSs, trust in social network community, trust towards community, trust towards members, trust in vendor, company trust, trust in sellers, trust towards website, trust in website, trust in product recommendation, information-based trust, identification-based trust					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		2	8	80% (8/10)	81% (26/32)
	Purchase intention/behavior		1	10	91% (10/11)	
	Continuance intention/behavior			2	100% (2/2)	
	Information sharing intention/behavior		2	5	71% (5/7)	
Information seeking intention/behavior		1	1	50% (1/2)		
Usefulness (n = 13)						
Definition	The degree to which a person believes that using a particular system (e.g., commercial website) enhances his or her performance (Davis 1989).					
Constructs	Usefulness, perceived usefulness, performance expectancy					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		1	7	88% (7/8)	85% (11/13)
	Purchase intention/behavior			3	100% (3/3)	
	Information sharing intention/behavior		1		0% (0/1)	
Information disclosure intention/behavior			1	100% (1/1)		
Enjoyment (n = 11)						
Definition	The extent to which the activity of using a particular system (e.g., commercial website) is perceived to be enjoyable (Davis et al. 1992). Conceptually similar to flow (Koufaris 2002), which refers to the holistic sensation that people feel when they act with total involvement (Csikszentmihalyi and Csikszentmihalyi 1988).					
Constructs	Enjoyment, perceived enjoyment, enjoyment of helping, enjoyment in helping others, flow, flow experience					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		1	5	83% (5/6)	75% (9/12)
	Purchase intention/behavior		1	2	67% (2/3)	
	Information sharing intention/behavior		1	1	50% (1/2)	
Information disclosure intention/behavior			1	100% (1/1)		
Social influence (n = 8)						
Definition	The pressure that an individual perceives from significant others to perform, or not to perform, a certain behavior (Deutsch and Gerard 1955; Ravis and Sheeran 2003).					
Constructs	Social influence, normative social influence, informational social influence, subjective norm, normative belief					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior			7	100% (7/7)	92% (11/12)
	Purchase intention/behavior	1		3	75% (3/4)	
Continuance intention/behavior			1	100% (1/1)		

Social support (n = 8)						
Definition	The degree to which an individual perceives that he or she is of being cared for, being responded to, and being helped by people in that individual's social network (Cobb 1976; Lakey and Cohen 2000).					
Constructs	Social support					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior			5	100% (5/5)	100% (9/9)
	Purchase intention/behavior			2	100% (2/2)	
Continuance intention/behavior			2	100% (2/2)		
Value (n = 8)						
Definition	The consumer's overall assessment of the utility of a product (or service), based on perceptions of what is received and what is given (Zeithaml 1988).					
Constructs	Perceived value, utilitarian value, perceived utilitarian value, product utilitarian value, social value, perceived social value, hedonic value, shopping hedonic value, self-discovery value, informational value					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		1	4	80% (4/5)	81% (13/16)
	Purchase intention/behavior		1	6	86% (6/7)	
Continuance intention/behavior		1	3	75% (3/4)		
Ease of use (n = 5)						
Definition	The degree to which a person believes that using a particular system (e.g., commercial website) would be free of effort (Davis 1989).					
Constructs	Perceived ease of use, effort expectancy					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		1	3	75% (3/4)	80% (4/5)
Purchase intention/behavior			1	100% (1/1)		
Relationship quality (n = 5)						
Definition	The overall strength of the relationship between a consumer and a product/service provider (Crosby et al. 1990). Typically considered as a higher-order construct that is composed of trust, commitment, and satisfaction (Hennig-Thurau et al. 2002).					
Constructs	Relationship quality, brand relationship quality					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior			3	100% (3/3)	100% (6/6)
	Continuance intention/behavior			2	100% (2/2)	
Information sharing intention/behavior			1	100% (1/1)		
Attitude (n = 4)						
Definition	The degree to which a person has a favorable or unfavorable evaluation of the behavior in question (Ajzen 1985; Fishbein and Ajzen 1975).					
Constructs	Attitude, attitude towards s-commerce					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		1	2	67% (2/3)	75% (3/4)
Continuance intention/behavior			1	100% (1/1)		
Risk (n = 4)						
Definition	The consumers' subjective assessment of possible negative consequences that a certain behavior (e.g., a purchase) might produce (Bettman 1973; Cox and Rich 1964).					

Constructs	Perceived risk, perceived privacy risk, perceived commerce risk, assessed usage risk, perceived participation risk					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior	2	1		67% (2/3)	80% (4/5)
	Purchase intention/behavior	1			100% (1/1)	
Information disclosure intention/behavior	1			100% (1/1)		
Commitment (n = 3)						
Definition	The consumer's desire to maintain a valued relationship (Morgan and Shelby 1994).					
Constructs	Commitment, community commitment					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior			2	100% (2/2)	100% (4/4)
	Continuance intention/behavior			2	100% (2/2)	
Social commerce constructs (n = 3)						
Definition	Refers to the social features and/or social platforms that enable social commerce (Hajli 2015). Typically conceptualized as a higher-order construct that is composed of the factors ratings and reviews, recommendations and referrals, and forums and communities (Hajli 2012; Hajli 2015; Hajli and Sims 2015).					
Constructs	Social commerce constructs					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior			2	100% (2/2)	100% (3/3)
	Purchase intention/behavior			1	100% (1/1)	
Familiarity (n = 2)						
Definition	The knowledge that people have of a product or service on the basis of their experiences and previous contacts (Luhmann 1979). Also considered as the consumer's understanding of a shopping website (Gefen 2000).					
Constructs	Familiarity					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior			1	100% (1/1)	50% (1/2)
	Purchase intention/behavior		1		0% (0/1)	
Satisfaction (n = 2)						
Definition	The consumer's overall emotional evaluation of the experiences with a certain product/service provider (Gustafsson et al. 2005).					
Constructs	Customer satisfaction, coupon satisfaction, site satisfaction					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Continuance intention/behavior			4	100% (4/4)	100% (4/4)
Social presence (n = 2)						
Definition	The degree to which a medium permits users to experience others as psychologically present (Fulk et al. 1987; Short et al. 1976).					
Constructs	Social presence					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Use intention/behavior		2	1	33% (1/3)	33% (1/3)

Uncertainty (n = 2)						
Definition	The degree to which the future states of the environment (e.g., the outcome of a transaction) cannot be accurately anticipated or predicted by an individual due to imperfect information (Pavlou et al. 2007).					
Constructs	Uncertainty, product uncertainty, seller uncertainty					
Influence on ...	Outcome variable	Effect (vote-count)			SPV	SPF
		-	0	+		
	Purchase intention/behavior	3			100% (3/3)	100% (3/3)

Notes: n = number of studies. - = significant negative effect (p<0.05); 0 = non-significant effect; + = significant positive effect (p<0.05). SPV = summary per variable. SPF = summary per factor.

Table 3 - Results of Sign Test					
Factor	N		Sign test		
	Positive	Total	Z score	Sig. value	Sig. level
Trust	26	32	3.5355	0.0004	***
Usefulness	11	13	2.4962	0.0126	*
Enjoyment	9	12	1.7321	0.0833	n.s.
Social influence	11	12	2.8868	0.0039	**
Social support	9	9	3.0000	0.0027	**
Value	13	16	2.5000	0.0124	*
Ease of use	4	5	1.3416	0.1797	n.s.
Relationship quality	6	6	2.4495	0.0143	*
Attitude	3	4	1.0000	0.3173	n.s.
Risk	4	5	1.3416	0.1797	n.s.
Commitment	4	4	2.0000	0.0455	*
Social commerce constructs	3	3	1.7321	0.0833	n.s.
Familiarity	1	2	0.0000	1.0000	n.s.
Satisfaction	4	4	2.0000	0.0455	*
Social presence	1	3	-0.5774	0.5639	n.s.
Uncertainty	3	3	1.7321	0.0833	n.s.

Notes: N = number of reported effects. Sig. = significance. * = p<0.05; ** = p<0.01; *** = p<0.001; n.s. = not significant.

Discussion

In this section, we discuss the implications and limitations of our study.

Theoretical and Practical Implications

Our results demonstrate that research on the consumers' adoption of social commerce so far has examined a wide range of factors and outcome variables. With respect to the identified outcome variables, different behavioral intentions and/or behaviors have been used in the literature to measure the consumers' adoption of social commerce. However, when examining the consumers' activities in social commerce (Liang and Turban 2011), there is still room for research to explore additional intentions and/or behaviors. For instance, researchers could examine the consumers' intention/behavior to collaborate on social commerce websites or to help and support other consumers (Ickler et al. 2009; Rad and Benyoucef 2010; Saundage and Lee 2011). Furthermore, we did not identify any outcome variables that address the consumers' intention/behavior to sell products

on social commerce websites, which is considered as a part of social commerce (Stephen and Toubia 2010; Wang and Zhang 2012). Researchers should be careful when adopting and redefining outcome variables. As our results reveal, several studies define the outcome variables in a different way (e.g., use, participation, or social commerce intention/behavior) but measure these variables with identical items. Researchers should also be careful when grouping different social commerce activities (e.g. requesting and sharing of shopping information) into one variable as these activities might be affected in different ways. Instead, we suggest to separately measure the different consumer intentions/behaviors, such as demonstrated by Farivar et al. (2016), Hsiao et al. (2010), or Horng et al. (2016). In this way, researchers can not only more precisely examine the different consumer intentions/behaviors but also explore the causal relationships between these intentions/behaviors in order to develop a more complete understanding of the consumers' adoption of social commerce.

Referring to the identified factors and their effects, our results show that the effects of some frequently examined factors, such as trust, usefulness, social influence, or social support, point in a clear direction, while the effects of several other frequently examined factors, such as enjoyment, ease of use, risk, or social presence, are yet not clear and require further investigations. Moreover, many factors have only been examined in one study (see Appendix A), which makes it difficult to assess their importance. Consequently, further investigations on these factors are necessary. Besides, researchers should be careful when defining their own factors. In order to facilitate the comparison of the reported results, researchers should refer to established conceptualizations or clearly explain why factors have been conceptualized in different ways. When examining multidimensional constructs, such as trust, researchers should also precisely explain on what dimension(s) they focus, such as trust in the website (Hsiao et al. 2010), trust in the seller (Lu et al. 2016), or trust in the community (Ng 2013). When looking at the frequently examined factors, many effects have not yet been explored, such as the effects of social influence or social support on the information sharing intention/behavior, the effects of usefulness or enjoyment on the continuance intention/behavior, or the effects trust on the information disclosure intention/behavior. Little is also known about the potential effects of the social features that enable social commerce. While the factor social commerce constructs, as suggested by Hajli (2015), is a first step in this direction, it is still not clear how individual social commerce features influence the consumers' intentions/behaviors. Deriving knowledge about the impacts of these features could support companies to identify and select features that might deliver the highest benefits in a particular scenario (Friedrich et al. 2015).

To better understand the consumers' adoption of social commerce, future research could also compare our results with the e-commerce literature and highlight the differences. For instance, factors such as trust, usefulness, ease of use, or risk have also been frequently examined in the e-commerce literature (Gefen et al. 2003; McKnight et al. 2002; Pavlou 2003; Pavlou and Fygenson 2006). Therefore, it is important for research to explore the specific characteristics of social commerce.

For practice, our results illustrate that a variety of factors influence consumers to participate in social commerce. Practitioners can use our results as a guideline to determine which factors might drive the success of their social commerce initiatives. For instance, if a company wants to stimulate consumers to return to their social commerce website (i.e., continuance intention/behavior), special attention should be given to factors such as social support, value, or relationship quality (Hajli et al. 2015; Liang et al. 2011).

Limitations

This study is subject to several limitations. Referring to our literature search, we only concentrated on academic publications that explicitly mentioned the term social commerce or conceptually similar terms such as social shopping, collaborative shopping, or collaborative commerce. Although we conducted backward and forward searches, the use of additional search terms (e.g., “social media” and “buying” or “social media” and “consumer behavior”) might have uncovered additional relevant articles. Moreover, we only focused on academic publications written in English. When identifying the relevant literature, we excluded all studies that did not provide empirical evidence about the effects of the factors.

With respect to the identified factors, we only investigated factors that have been assumed in the literature to have a direct effect on the outcome variables. Antecedents of these factors were excluded, such as the various seller and website characteristics (e.g., reputation, size, transaction safety, communication, etc.) investigated by Kim and Park (2013). Furthermore, we only focused on the effects between the factors and the outcome variables and not on the effects between the factors or between the outcome variables. For instance, our results suggest that social presence might not play an important role in the consumers' adoption of social commerce because 2 of 3 studies reported a non-significant effect. However, when looking at the effects reported in the social commerce literature, evidence is given that social presence can influence the consumers' intentions/behaviors through various other factors, such as trust, enjoyment, or perceived usefulness (Hwang et al. 2014; Kim 2015; Shen 2012a; Zhang et al. 2014). To derive a complete picture of the consumers' adoption of social commerce, it is thus necessary to also investigate the causal relationships between the factors and between the outcome variables.

To synthesize our results, we grouped conceptually similar factors and outcome variables together by carefully examining their definitions and measurement items. However, there might be other ways to classify these variables. The vote-counting technique, which we used to count the effects between the factors and the outcome variables, does not consider differences in the sample sizes, effect sizes, data analysis approaches, or contexts. To overcome some of these shortcomings, we combined the vote-counting results with a sign test. However, more sophisticated meta-analysis techniques could be applied, especially when a larger set of studies is investigated (King and He 2005). Another limitation of this study is that it solely focuses on consumers. Considering that businesses are a major part of social commerce (Wang and Zhang 2012; Zhou et al. 2013), it would also be interesting to find out what factors influence companies to adopt to social commerce.

Conclusion

In this study, we examined the factors that influence the consumers' adoption of social commerce. By conducting a systematic literature review, we summarized and synthesized the results of 61 academic publications on social commerce adoption. In particular, we identified and classified conceptually similar factors and outcome variables (i.e., behavioral intentions and/or behaviors). Moreover, we applied a vote-counting technique and a sign test to aggregate the reported effects between the factors and outcome variables. In so doing, we contributed a structured and comprehensive list of factors and their potential effects on various adoption-related outcome variables. Several implications for research and practice were discussed. Main implications for research are: use our list to (1) examine the importance of the factors that have only been

examined in one study; (2) verify the consolidated effects of the frequently examined factors and explore new causal relationships; (3) combine the identified factors and outcome variables to develop a more complete understanding of the consumers' adoption of social commerce. By pointing out the limitations of our work, we also highlighted room for future improvements.

The results of our literature review demonstrate that research on social commerce adoption is still at an early stage. To support companies in their social commerce initiatives, it is necessary for research to further explore the factors that drive consumers to participate in social commerce.

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Appendix A: Detailed Results of Literature Review

Table A1 - Detailed Results of Literature Review				
Constructs	Impact			Study
	-	0	+	
Trust (n = 20)				
Outcome variable: Use intention/behavior				
Trust		n.s.		(Shen 2012b)
Trust			+++	(Teh and Ahmed 2012)
Trust			+++	(Zhang et al. 2015)
Perceived trust			**	(Shin 2013)
Trust towards community			+++	(Chen and Shen 2015)
Trust towards members			+++	(Chen and Shen 2015)
Perceived trustworthiness of SNSs			+++	(Kang and Johnson 2013)
Trust in vendor			+	(Ruan et al. 2016)
Trust towards website			+	(Farivar et al. 2016)
Trust towards members		n.s.		(Farivar et al. 2016)
Outcome variable: Purchase intention/behavior				
Trust			+	(Hajli 2012)
Trust			+	(Hajli 2014a)
Trust			+++	(Hajli 2015)
Trust			+	(Hajli and Lin 2015)
Trust			**	(Kim and Park 2013)
Trust towards members		n.s.		(Farivar et al. 2016)
Trust towards website			**	(Farivar et al. 2016)
Trust in website			**	(Hsiao et al. 2010)
Trust in product recommendation			+++	(Hsiao et al. 2010)
Trust in sellers			**	(Lu et al. 2016)
Trust in social network community			+++	(Ng 2013)
Outcome variable: Continuance intention/behavior				
Trust			+	(Gamboa and Gonçalves 2014)
Trust			+	(Gamboa and Gonçalves 2014)
Outcome variable: Information sharing intention/behavior				
Trust			**	(Kim and Park 2013)
Trust			+++	(Liu et al. 2013)
Trust towards community			+++	(Chen and Shen 2015)
Trust towards members		n.s.		(Chen and Shen 2015)
Company trust			**	(Shi and Chow 2015)
Information-based trust		n.s.		(Shi and Chow 2015)
Identification-based trust			**	(Shi and Chow 2015)
Outcome variable: Information seeking intention/behavior				
Perceived trustworthiness of social commerce site			**	(Qin and Kong 2015)
Perceived trustworthiness of other users' competence		n.s.		(Qin and Kong 2015)
Usefulness (n = 13)				
Outcome variable: Use intention/behavior				
Usefulness			**	(Kim 2015)
Perceived usefulness			+++	(Featherman and Hajli 2015)
Perceived usefulness			**	(Noh et al. 2013)
Perceived usefulness			+++	(Shen 2012a)
Perceived usefulness			+++	(Shen 2012b)
Perceived usefulness			**	(Shin 2013)

Perceived usefulness		n.s.		(Teh and Ahmed 2012)
Performance expectancy			+	(Gatautis and Medziausiene 2014)
Outcome variable: Purchase intention/behavior				
Perceived usefulness			+	(Hajli 2012)
Perceived usefulness			+	(Hajli 2014a)
Perceived usefulness			+	(Hajli and Lin 2015)
Outcome variable: Information sharing intention/behavior				
Perceived usefulness		n.s.		(Chen et al. 2014)
Outcome variable: Information disclosure intention/behavior				
Perceived usefulness			+	(Sharma and Crossler 2014a)
Enjoyment (n = 11)				
Outcome variable: Use intention/behavior				
Enjoyment			+	(Kim 2015)
Perceived enjoyment		n.s.		(Sharma and Crossler 2014b)
Perceived enjoyment			+	(Shen 2012a)
Perceived enjoyment			+	(Shin 2013)
Flow			+	(Zhang et al. 2014)
Flow			+	(Zhang et al. 2014)
Outcome variable: Purchase intention/behavior				
Perceived enjoyment		n.s.		(Song et al. 2015)
Perceived enjoyment			+	(Xiang et al. 2016)
Flow experience			+	(Liu et al. 2016a)
Outcome variable: Information sharing intention/behavior				
Enjoyment of helping		n.s.		(Liu et al. 2016b)
Enjoyment in helping others			+	(Liu et al. 2014)
Outcome variable: Information disclosure intention/behavior				
Perceived enjoyment			+	(Sharma and Crossler 2014a)
Social influence (n = 8)				
Outcome variable: Use intention/behavior				
Social influence			+	(Gatautis and Medziausiene 2014)
Subjective norm			+	(Featherman and Hajli 2015)
Subjective norm			+	(Sharma and Crossler 2014b)
Subjective norm			+	(Shin 2013)
Normative social influence			+	(Kwahk and Ge 2012)
Informational social influence			+	(Kwahk and Ge 2012)
Normative belief			+	(Teh and Ahmed 2011)
Outcome variable: Purchase intention/behavior				
Normative social influence		-		(Kwahk and Ge 2012)
Informational social influence			+	(Kwahk and Ge 2012)
Normative social influence			+	(Xi et al. 2016)
Informational social influence			+	(Xi et al. 2016)
Outcome variable: Continuance intention/behavior				
Subjective norms			+	(Hajli et al. 2015)
Social support (n = 8)				
Outcome variable: Use intention/behavior				
Social support			+	(Hajli 2014b)
Social support			+	(Hajli and Sims 2015)
Social support			+	(Liang et al. 2011)
Social support			+	(Zhang et al. 2014)
Social support			+	(Zhang et al. 2014)
Perceived social support			+	(Shin 2013)
Outcome variable: Purchase intention/behavior				
Social support			+	(Bai et al. 2015)

Social support			+	(Li et al. 2014)
Outcome variable: Continuance intention/behavior				
Social support			++	(Hajli et al. 2015)
Social support			++	(Liang et al. 2011)
Value (n = 8)				
Outcome variable: Use intention/behavior				
Hedonic value			+	(Kim et al. 2013a)
Social value			+	(Kim et al. 2013a)
Utilitarian value		n.s.		(Kim et al. 2013a)
Product utilitarian value			+++	(Ruan et al. 2016)
Shopping hedonic value			++	(Ruan et al. 2016)
Outcome variable: Purchase intention/behavior				
Perceived value			+++	(Cho et al. 2012)
Perceived utilitarian value			++	(Hu et al. 2016)
Perceived social value			++	(Hu et al. 2016)
Hedonic value			+	(Sun et al. 2016)
Social value			++	(Sun et al. 2016)
Self-discovery value			+++	(Sun et al. 2016)
Informational value		n.s.		(Sun et al. 2016)
Outcome variable: Continuance intention/behavior				
Perceived value			+++	(Hajli et al. 2015)
Perceived value			+++	(Lee et al. 2012)
Perceived value			+	(Gamboa and Gonçalves 2014)
Perceived value		n.s.		(Gamboa and Gonçalves 2014)
Ease of use (n = 5)				
Outcome variable: Use intention/behavior				
Perceived ease of use			+++	(Featherman and Hajli 2015)
Perceived ease of use			++	(Noh et al. 2013)
Perceived ease of use		n.s.		(Teh and Ahmed 2012)
Effort expectancy			++	(Gatautis and Medziausiene 2014)
Outcome variable: Purchase intention/behavior				
Perceived ease of use			+	(Hajli and Lin 2015)
Relationship quality (n = 5)				
Outcome variable: Use intention/behavior				
Relationship quality			++	(Hajli 2014b)
Relationship quality			+	(Liang et al. 2011)
Relationship quality			+++	(Wang and Hajli 2014)
Outcome variable: Continuance intention/behavior				
Relationship quality			+++	(Liang et al. 2011)
Relationship quality			+++	(Zhang et al. 2016)
Outcome variable: Information sharing intention/behavior				
Brand relationship quality			+++	(Hudson et al. 2015)
Attitude (n = 4)				
Outcome variable: Use intention/behavior				
Attitude			+++	(Kim et al. 2013a)
Attitude			++	(Shin 2013)
Attitude towards s-commerce		n.s.		(Teh and Ahmed 2011)
Outcome variable: Continuance intention/behavior				
Attitude			+++	(Hajli et al. 2015)
Risk (n = 4)				
Outcome variable: Use intention/behavior				
Assessed usage risk		-**		(Featherman and Hajli 2015)
Perceived risk		n.s.		(Ruan et al. 2016)

Perceived participation risk	-.***			(Farivar et al. 2016)
Outcome variable: Purchase intention/behavior				
Perceived commerce risk	-.***			(Farivar et al. 2016)
Outcome variable: Information disclosure intention/behavior				
Perceived privacy risk	-.***			(Sharma and Crossler 2014a)
Commitment (n = 3)				
Outcome variable: Use intention/behavior				
Commitment			+++	(Zhang et al. 2015)
Community commitment			+	(Chen and Shen 2015)
Outcome variable: Continuance intention/behavior				
Commitment			+	(Gamboa and Gonçalves 2014)
Commitment			+	(Gamboa and Gonçalves 2014)
Social commerce constructs (n = 3)				
Outcome variable: Use intention/behavior				
Social commerce constructs			+++	(Hajli and Sims 2015)
Social commerce constructs			++	(Wang and Hajli 2014)
Outcome variable: Purchase intention/behavior				
Social commerce constructs			+++	(Hajli 2015)
Familiarity (n = 2)				
Outcome variable: Use intention/behavior				
Familiarity			+++	(Sharma and Crossler 2014b)
Outcome variable: Purchase intention/behavior				
Familiarity		n.s.		(Ng 2013)
Satisfaction (n = 2)				
Outcome variable: Continuance intention/behavior				
Customer satisfaction			+	(Gamboa and Gonçalves 2014)
Customer satisfaction			+	(Gamboa and Gonçalves 2014)
Site satisfaction			++	(Jang et al. 2013)
Coupon satisfaction			++	(Jang et al. 2013)
Social presence (n = 2)				
Outcome variable: Use intention/behavior				
Social presence		n.s.		(Sharma and Crossler 2014b)
Social presence		n.s.		(Zhang et al. 2014)
Social presence			++	(Zhang et al. 2014)
Uncertainty (n = 2)				
Outcome variable: Purchase intention/behavior				
Uncertainty	-.***			(Hwang et al. 2014)
Product uncertainty	-*			(Bai et al. 2015)
Seller uncertainty	-.**			(Bai et al. 2015)
Others (n = 1)				
Outcome variable: Use intention/behavior				
Ability			+	(Teh and Ahmed 2011)
Conformity motivation			+++	(Kang and Johnson 2013)
Consumer self-confidence		n.s.		(Kang and Johnson 2013)
Cool & new trend			+++	(Sharma and Crossler 2014b)
Facilitating conditions			+	(Gatautis and Medziausiene 2014)
Information quality			+++	(Sharma and Crossler 2014b)
Information-seeking gratification			+++	(Kang and Johnson 2015)
Market mavenism			+++	(Kang and Johnson 2015)
Motivation			++	(Teh and Ahmed 2011)
Online bonding social capital			+++	(Horng et al. 2016)
Online bridging social capital			+++	(Horng et al. 2016)

Opinion seeking in SNSs			+***	(Kang and Johnson 2013)
Opportunity		n.s.		(Teh and Ahmed 2011)
Perceived participation benefit			+***	(Farivar et al. 2016)
Reciprocal altruism			+**	(Ruan et al. 2016)
Search costs	-*			(Ruan et al. 2016)
Service quality			+**	(Ruan et al. 2016)
Sociability		n.s.		(Kang and Johnson 2013)
Social browsing			+	(Kang and Johnson 2015)
Socializing gratification			+***	(Kang and Johnson 2015)
Value consciousness			+***	(Kang and Johnson 2015)
Website quality			+***	(Liang et al. 2011)
Outcome variable: Purchase intention/behavior				
Affective involvement			+**	(Park et al. 2014)
Bargain percept		n.s.		(Anderson et al. 2014)
Browsing activities			+	(Huang 2016)
Closeness		n.s.		(Ng 2013)
Cognitive involvement			+	(Park et al. 2014)
Consumer knowledge	-*			(Li et al. 2014)
Discounted price		n.s.		(Song et al. 2015)
Experiential shopping		n.s.		(Anderson et al. 2014)
Information access		n.s.		(Anderson et al. 2014)
Learning and training			+	(Hajli and Lin 2015)
Negative valence WOM	-***			(Wang and Yu 2017)
Observe consumer purchase			+	(Wang and Yu 2017)
Parasocial interaction			+***	(Xiang et al. 2016)
Peer communication			+	(Huang 2016)
Positive valence WOM			+**	(Wang and Yu 2017)
Scarcity			+**	(Song et al. 2015)
Serendipitous information			+	(Song et al. 2015)
Social commerce cognition			+	(Li et al. 2014)
Time savings			+	(Anderson et al. 2014)
WOM content			+***	(Wang and Yu 2017)
Outcome variable: Continuance intention/behavior				
Bargain percept		n.s.		(Anderson et al. 2014)
Brand experience			+***	(Chen et al. 2014)
Contact		n.s.		(Lee et al. 2012)
Efficiency			+**	(Lee et al. 2012)
Experiential shopping			+	(Anderson et al. 2014)
Fulfillment			+***	(Lee et al. 2012)
Information access			+	(Anderson et al. 2014)
Perceived behavioral control			+	(Hajli et al. 2015)
Price fairness perception			+	(Kim et al. 2013b)
Privacy			+***	(Lee et al. 2012)
Responsiveness			+***	(Lee et al. 2012)
Time savings		n.s.		(Anderson et al. 2014)
Website quality			+	(Liang et al. 2011)
Outcome variable: Information sharing intention/behavior				
Anticipated extrinsic rewards			+***	(Liu et al. 2014)
Anticipated reciprocal relationships			+**	(Liu et al. 2014)
Customer expertise			+***	(Liu et al. 2016b)
Emotional attachment			+***	(Hudson et al. 2015)
Identification		n.s.		(Liu et al. 2013)
Indegree centrality			+	(Liu et al. 2013)

In-degree's feedback			+***	(Liu et al. 2016b)
Knowledge self-efficacy			+***	(Liu et al. 2014)
Outdegree centrality			+*	Liu et al. 2013)
Out-degrees' post			+***	(Liu et al. 2016b)
Peer members' postings			+***	(Cheung et al. 2015)
Peer members' recommendations			+***	(Cheung et al. 2015)
Reciprocity			+***	(Liu et al. 2016b)
Reputation			+*	(Liu et al. 2016b)
Shared language			+***	(Liu et al. 2013)
Shared vision			+*	(Liu et al. 2013)
Outcome variable: Information seeking intention/behavior				
Perceived helpfulness			+**	(Qin and Kong 2015)
Outcome variable: Information disclosure intention/behavior				
Perceived ownership		n.s.		(Sharma and Crossler 2014a)
Privacy apathy			+***	(Sharma and Crossler 2014a)

Notes: n = number of studies. - = significant negative effect; 0 = non-significant effect / n.s. = not significant; + = significant positive effect. Significance levels: * = p<0.05; ** = p<0.01; *** = p<0.001.

Appendix B: Formula of Sign Test

$$Z_{vc} = \frac{(N_p) - (\frac{1}{2}N)}{\frac{1}{2}\sqrt{N}}$$

Z_{vc} = z score (i.e., standard normal deviate)
 N_p = number of positive findings (i.e., findings that are assumed and confirmed to be statistically significant)
 N = total number of findings (i.e., total number of significant and non-significant findings)

Figure B1 - Formula of Sign Test (Cooper 1998, p. 118)

About the Author

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