

The More the Better? Exploring the Relationship between Social Commerce Feature Intensity, Social Factors, and Consumers' Buying Behavior

Completed Research Paper

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Abstract

Today, several social commerce features exist, which can be integrated into e-commerce websites. Integrating such features facilitates interactions among consumers and shall positively affect the perception of social factors and the buying behavior. As social commerce features differ regarding the stimulated interactions, it is recommended to increase their effectiveness by using multiple features. However, there also exist warnings that introducing multiple features might overwhelm consumers. To study the effects of the intensity of social commerce features on the perception of social factors and the buying behavior, we present the results of a controlled experiment, in which 115 participants used variants of an e-commerce platform with differing sets of features. The findings indicate that the intensity of features might positively influence the perception of social factors and the buying behavior. The provided research model moreover allows examining the causal relations between social commerce features, social factors, and the buying behavior systematically.

Keywords: Social commerce, website features, social factors, consumer behavior

Introduction

Attracted by the widespread success of social media platforms, e-commerce companies today are highly interested in finding out how to effectively use social media to increase sales volumes (Yadav et al. 2013). In literature, the term social commerce has been coined to summarize initiatives in which social media are used to facilitate e-commerce transactions (Liang and Turban 2011; Zhou et al. 2013). Through the integration of social media into e-commerce platforms, social commerce enables consumers to actively participate, interact, and communicate in the various stages of the buying process (Wang and Zhang 2012). In so doing, consumers can, for instance, be stimulated to create and exchange product-related information, which can positively influence other consumers' buying behavior (Chevalier and Mayzlin 2006; Turban et al. 2010). Meanwhile, a wide range of social commerce features – i.e. readily usable social media applications – exists that can be integrated into an e-commerce website, among them being, for instance, rating and review tools,

share and like buttons, social wish lists, social login buttons, and activity feeds (Curty and Zhang 2013; Huang et al. 2012). As social commerce features differ with respect to the provided functionality and the stimulated social interactions among the consumers, it is sometimes assumed in literature that social commerce initiatives can be made more effective if multiple features are used in combination (Curty and Zhang 2013; Huang and Benyoucef 2013a).

Findings from studies conducted in the e-commerce domain indicate that, in general, the features contained in e-commerce platforms can have a significant impact on the consumers' buying behavior (Bilgihan and Bujisic 2015; Parboteeah et al. 2009; Song and Zahedi 2005). It is hence essential to understand how the integration of novel social commerce features into an e-commerce platform might affect the consumers' buying behavior. Referring to the above-mentioned argument, it particularly ought to be investigated if the effect of social commerce initiatives can indeed be strengthened by increasing the number of social commerce features in an e-commerce platform. Yet, studies that examine the impacts of social commerce features systematically are still scarce and inconclusive (Baethge et al. 2016; Zhang and Benyoucef 2016). This observation is particularly true regarding the impact of social commerce features on social factors, which are manipulated by the interactions of the consumers and might have an influence on their buying behavior (Hajli and Sims 2015; Liang et al. 2011; Zhang et al. 2014). As social commerce considerably builds upon the consumers' social interactions and relationships, it is assumed that such social factors and their perception play a key role for the success of social commerce initiatives (Liang et al. 2011; Wang and Zhang 2012). Accordingly, several calls exist in the social commerce literature to study both the antecedents and impacts of social factors in more detail (Liang et al. 2011; Zhang and Benyoucef 2016).

However, the majority of efforts in this direction concentrates on the impacts, i.e. on investigating how the perception of social factors on e-commerce websites affects the consumers' buying behavior (Kwahk and Ge 2012; Lee et al. 2006; Liang et al. 2011; Shen 2012). The causal relationship between the social commerce features of a website and the consumers' perception of social factors has not been investigated to a comparable level of detail yet. Instead, there rather exists sporadic evidence from studies, in which one or more social commerce features and the interplay with certain social factors were investigated on specific e-commerce platforms (Kumar and Benbasat 2006; Zhang et al. 2014; Zhu et al. 2010). From such studies, however, no conclusion can be drawn if the perception of desirable social factors can be manipulated more successfully when increasing the number of social commerce features on a platform. On the one hand, it seems plausible that an increased number of social commerce features might strengthen the consumers' perception of social factors and, consequently, affect the consumers' buying behavior positively (Curty and Zhang 2013; Huang and Benyoucef 2013a). On the other hand, some authors argue that the use of multiple social commerce features might rather overwhelm consumers ("social overload") and negatively affect their buying behavior (Baethge et al. 2016; Olbrich and Holsing 2011). It is hence important to better understand how different numbers of social commerce features affect the success of social commerce initiatives.

To contribute to the closure of this research gap, we investigate the relationship between the intensity of social commerce features, the perception of social factors, and their impact on the consumers' buying behavior. In particular, we pursue two research questions. As no clear statement can be derived from literature whether the consumers' perception of social factors can be strengthened by combining and overlapping the stimuli of multiple social commerce features (Baethge et al. 2016; Huang and Benyoucef 2013a; Kumar and Benbasat 2006), we examine the following research question: *(RQ1) how does the intensity of the social commerce features present on an e-commerce website impact the consumers' buying behavior?* To examine this question, we develop a theoretical model that links social commerce features with social factors and the consumers' buying behavior. More specifically, we leverage the existing body of knowledge on social and e-commerce to develop a research model that connects the use of social commerce features to the consumers' buying behavior through their effect on the perception of several social factors. In so doing, we investigate our second research question: *(RQ2) how do social commerce features affect the perceptions of social factors and how do these perceptions influence the consumers' buying behavior?*

We evaluate the developed research model using the results of a controlled empirical study, in which 115 participants used and reported on several versions of an e-commerce platform, which differ from each other only regarding the number of implemented social commerce features. The results of our research contribute to the social commerce literature by 1) providing evidence how the use of different numbers of social commerce features impacts the consumers' perception of social factors; 2) examining the effects between social

factors and their impacts on the consumers' buying intention; 3) developing a theoretical lens that can be used to explain characteristic impacts of social commerce features.

The remainder of the paper is structured as follows: in section 2, we discuss the theoretical background and related work. In section 3, we develop the research model to examine our research questions. In section 4, we describe the research methodology. The results of the empirical study are presented in section 5. In section 6, we discuss the implications for research and practice as well as the limitations that apply to our findings. In section 7, we conclude by summarizing the results and by discussing future research directions.

Theoretical Background and Related Work

In this section, we provide background information on the concept of social commerce and on social commerce features. Moreover, we describe the consumers' buying behavior and the social factors in the context of social commerce and explain the theoretical framework on which we build our research model.

Social Commerce and Social Commerce Features

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 (Zhou et al. 2013). As a consequence, current literature provides a variety of social commerce definitions, which makes it difficult to derive a clear understanding of the concept (a collection of definitions can be found in Wang and Zhang 2012). In this study, we follow the definition of Liang and Turban (2011, p. 6) who define *social commerce* as “*a subset of e-commerce that involves using social media to assist in e-commerce transactions and activities*”. 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; and (2) traditional e-commerce websites that add social media-based features to facilitate social interactions and exchanges (Curty and Zhang 2011; Liang and Turban 2011). In this study, we focus on the latter type of websites since we are interested in figuring out how the intensity of the social commerce features present on an e-commerce website impacts the consumers' buying behavior.

Research agrees on the fact that technical website features are a key enabler and driver of social commerce (Wang and Zhang 2012; Zhou et al. 2013). Accordingly, an entire research stream exists that investigates which features can be used for social commerce initiatives (Curty and Zhang 2011; Curty and Zhang 2013; Huang and Benyoucef 2013b; Huang et al. 2012). In line with the literature, we use the term *social commerce features* to refer to these features. *A social commerce feature is a software artifact that is integrated into a website and provides a specific social media functionality to promote interactions and exchanges among consumers* (Curty and Zhang 2013). On the basis of an extensive analysis of several popular e-commerce websites, Curty and Zhang (2013) identified four types of social commerce features: (1) Features that attract other consumers and promote branding (e.g., activity feeds, ask friends buttons, share and like buttons); (2) features that allow consumers to create an identity and to establish communities (e.g., blog pages, discussion forums, social login buttons, social user profiles); (3) features that promote the creation of user-generated content (e.g., rating and review tools, social product recommendation tools, social wish lists); (4) features, that promote collective actions and group participation (e.g., co-browsing/co-shopping tools, live chat tools, group buying tools). Note that the illustrated types of social commerce features are not always mutually exclusive as some features can be assigned to more than one type. We use this categorization only as an example to provide a consolidated picture of the different types of social commerce features. Moreover, note that some social commerce features are also used on other types of websites, such as traditional e-commerce websites or social networking websites. In line with the literature, we use the term *social commerce feature* to refer to the types of social features that enable social commerce. However, this does not imply that these types of social features are only used in social commerce.

To support the design of social commerce platforms, Huang and Benyoucef (2013a) developed a basic reference model of a social commerce platform in which social commerce features are grouped into four different design layers. By applying the model on two successful commercial websites (i.e., Amazon and Starbucks Facebook), Huang and Benyoucef (2013a) demonstrate that both websites cover all four layers of the reference model with different social commerce features. According to their findings, Huang and Benyoucef (2013a) conclude that social commerce initiatives can be more effective if they use multiple social commerce

features. Similar assumptions can also be found in other studies (Curty and Zhang 2013; Huang and Benyoucef 2013b; Zhang et al. 2014). However, some authors also argue that the use of multiple social commerce features might overwhelm consumers (“social overload”) and negatively affect their buying behavior (Baethge et al. 2016; Olbrich and Holsing 2011). Given the different assumptions about the potential effects of multiple social commerce features, this study aims to investigate how the intensity of social commerce features (i.e., the number of social commerce features integrated into an e-commerce website) influences the effectiveness of social commerce initiatives by stimulating the consumers’ buying behavior.

Consumers’ Buying Behavior and Social Factors in Context of Social Commerce

Prior studies have applied a wide range of different theories to investigate the consumers’ buying behavior in the context of social commerce (a collection of theories can be found in Zhang and Benyoucef 2016). Well-known and frequently applied theories are the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and the Technology Acceptance Model (TAM). In general, all three theories posit that an individual’s behavior can be predicted by his or her intention towards the behavior (Ajzen 1991; Davis 1989; Fishbein and Icek 1975). Considering that social commerce builds on the consumers’ social interactions and relationships (Wang and Zhang 2012), researchers have also applied various social theories to investigate the specific characteristics of social commerce (Liang and Turban 2011; Zhang and Benyoucef 2016). Based on a systematic literature review (Friedrich 2015), we identified three factors which stem from different social theories and which have been frequently examined (at least three times) in the social commerce literature: *social presence*, *social support*, and *social influence*. In this study, we focus on these three social factors because indications are given that these factors play an important role in the consumers’ buying behavior (Hajli and Sims 2015; Liang et al. 2011; Shen 2012; Wang and Zhang 2012). Moreover, calls exist in the social commerce literature to study the antecedents and impacts of these factors in more detail (Liang et al. 2011; Zhang and Benyoucef 2016).

Initially, the theory of social presence has been introduced by Short et al. (1976) to examine what effect telecommunication media can have on person-to-person telecommunications. According to Short et al. (1976, p. 65), *social presence* is defined as “*the degree of salience of another person in the interaction*” and is considered as “*being a quality of the communication medium*”. Based on their argumentation, it is assumed that communication media vary in their degree of social presence and that these variations are important in determining how individuals interact. Face-to-face communication, for instance, is considered to have the highest social presence while a business letter is considered to have a low level of social presence because its text-based nature makes it less able to convey social cues, such as facial expressions, gestures, and sounds (Fulk et al. 1987; Short et al. 1976). In recent years, social presence has received increased attention in the e-commerce literature as researchers recognized that e-commerce websites typically lack human warmth and sociability (Cyr et al. 2007; Gefen and Straub 2003; Hassanein and Head 2005; Hess et al. 2009). In these studies, social presence has been conceptualized as the warmth, sociability, and the sense of human contact that can be conveyed through a website. So far, scientific findings have demonstrated that certain website elements and features, such as human images (Hassanein and Head 2007), live chat tools (Qiu and Benbasat 2005), customer ratings and reviews (Kumar and Benbasat 2006), or recommendation agents (Al-Natour et al. 2011), can significantly increase the consumers’ perception of social presence in a commercial website. Moreover, research has shown that a higher perception of social presence can positively mediate the consumers’ buying behavior through other behavior-related factors, such as trust, perceived enjoyment, or perceived usefulness (Cyr et al. 2007; Gefen and Straub 2003; Hassanein and Head 2007). Since social commerce websites are designed to visualize other consumers’ social profiles and interactions, literature on social commerce has confirmed the importance of social presence with similar results (Lu and Fan 2014; Shen 2012; Zhang et al. 2014).

A factor in which social commerce considerably differs from e-commerce and that stresses the consumers’ social relationships is *social support* (Liang et al. 2011). Rooted in social psychology, the theory of social support can be defined as “*the information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations*” (Cobb 1976, p. 300). Social support is considered as an important determinant of an individual’s well-being since humans have the fundamental need to have frequent personal interaction or contact with someone who cares about their welfare and who likes and/or loves them (Baumeister and Leary 1995; Crocker and Canevello 2008). According to House (1981), social support can be divided into four different types: emotional, informational, instrumental, and ap-

praisal support. Emotional support involves the provisioning of empathy, love, caring, and trust. Informational support is defined as the information (e.g., advice, guidance, suggestions) given to someone for problem solving. Instrumental support refers to the provisioning of tangible resources, such as financial assistance, material goods, and services. Appraisal support is considered as the communication of information, which is useful for self-evaluation (e.g., encouraging someone that he/she made the right choice). With its potential impact on an individual's well-being, social support has predominantly been investigated in the context of health maintenance, disease prevention, and in the process of work stress (Cobb 1976; Deeter-Schmelz and Ramsey 1997; House 1981; Lakey and Cohen 2000; Schaefer et al. 1981). However, with the advent of the Internet and the rising popularity of social media platforms, researchers started to investigate how users perceive social support in computer-mediated environments such as in online communities (Ballantine and Stephenson 2011; Huang et al. 2010; Obst and Stafurik 2010; Shaw and Gant 2002; Weiss et al. 2013). As the findings of these studies reveal, users of online communities can perceive a strong sense of social support, especially of informational and emotional support. By applying the concept of social support to the context of social commerce, researchers could demonstrate that consumers also perceive social support (i.e., informational and emotional support) on social commerce websites and that higher perceptions of social support can have a significant positive influence on the consumers' buying behavior (Li et al. 2014; Liang et al. 2011; Shin 2013; Wang and Hajli 2014; Zhang et al. 2014). On social commerce websites, social support, for instance, can be generated through the sharing of shopping experiences or product knowledge between consumers, which is enabled by social commerce features such as rating and review tools, social product recommendation tools, or social wish lists (Liang et al. 2011).

One of the most important determinants of an individual's behavior is *social influence* (Burnkrant and Cousineau 1975). In general, social influence can be described as *the pressure that an individual perceives from significant others to perform, or not to perform, a certain behavior* (Rivis and Sheeran 2003). Following Deutsch and Gerard (1955, p. 629), two types of social influence can be distinguished: normative social influence and informational social influence. Normative social influence occurs when individual conforms to the positive expectations of others. Informational social influence occurs when an individual accepts information obtained from others as evidence about reality. Defined as subjective norm, normative social influence has become an important part in many theories, such as the TRA (Fishbein and Icek 1975), the TPB (Ajzen 1991), or the refined versions of the TAM (Venkatesh and Bala 2008; Venkatesh and Davis 2000). In the e-commerce literature, researchers have conceptualized normative social influence as the consumer's perception of whether the behavior of buying products on a commercial website conforms to the consumer's circle of influence (Limayem et al. 2000; Pavlou and Dimoka 2006). According to the findings of these studies, perceptions of normative social influence can have a significant impact on the consumers' buying behavior. Likewise, research on e-commerce has confirmed that informational social influence, which refers to the information provided by other consumers, can positively influence the consumers' buying behavior (Lee et al. 2006; Lee et al. 2011). As social commerce encourages consumers to interact with each other and to generate valuable content, social influence is considered as an important factor for the success of social commerce initiatives. Kwahk and Ge (2012), for instance, empirically demonstrate that informational social influence can have a positive impact on the consumers' buying behavior on social commerce websites while normative social influence has been reported to have a negative impact. Kim and Srivastava (2007) conceptually demonstrate how both types of social influence (i.e., normative and informational social influence) can be generated on e-commerce websites through the use of social commerce features such as social recommendation tools. In their study, social influence is generated by providing consumers with personalized product recommendations that are based on the consumers' social interactions and relationships. In the context of social commerce, Amblee and Bui (2011) furthermore demonstrate how social influence, which in their study is generated through online ratings and reviews, can influence the sales rank of e-books.

Considering the relationship between social commerce features and the three social factors, indications are given that each factor can be affected by the use of social commerce features. Kumar and Benbasat (2006), for instance, demonstrate that social commerce features such as rating and review tools can positively influence the social presence of a commercial website. We also found indications that social commerce features can increase the social support and the social influence of a commercial website (Amblee and Bui 2011; Hajli and Sims 2015; Kim and Srivastava 2007). However, since these studies do not consider the potential effect of different numbers of social commerce features, it remains unclear if the intensity of social

commerce features further influences the consumers' perceptions of these social factors. Moreover, it remains unclear how these social factors in combination influence the consumers' buying behavior as they so far have only been investigated independently.

Stimulus-Organism-Response Paradigm

Rooted in the field of environmental psychology, the S-O-R paradigm suggests that certain signals in the environment (stimuli) directly affect the affective and cognitive states of an individual (organism), and thereby influence the individual's behaviors (response) (Mehrabian and Russell 1974). In the e-commerce domain, studies have adopted the S-O-R paradigm to examine how the features of an e-commerce website (e.g., product descriptions, pictures, navigation aids) influence the consumers' buying behavior (Chang and Chen 2008; Eroglu et al. 2001; Eroglu et al. 2003; Parboteeah et al. 2009). Given the different perspectives of these studies, various factors have been used to measure the affective and cognitive states, such as perceived usefulness, perceived enjoyment, social presence, trust, or risk. In the social commerce domain, Brengman and Karimov (2012) have used the S-O-R paradigm to examine how like buttons and blog pages can affect the consumers' trust in an e-commerce website, which can increase the consumers' buying intention. Similarly, Zhang et al. (2014) have used the S-O-R paradigm to examine how certain feature characteristics (i.e., interactivity, personalization, sociability) of social commerce websites influence the consumers' social commerce intention (i.e., the willingness to share and consider shopping-related information) through the factors social support, social presence, and flow.

As the findings of the above-mentioned studies demonstrate, the S-O-R paradigm is a well-suited framework for explaining how certain stimuli (in our context represented by the intensity of social commerce features) affect the organismic states (in our context represented by the consumers' perception of three social factors) and how these states influence the response (in our context represented by the consumers' buying behavior). By establishing a causal relationship between signals, states, and responses, the S-O-R paradigm provides a structured manner to examine the effects caused by the intensity social commerce features in a systematic way.

Research Model and Hypotheses Development

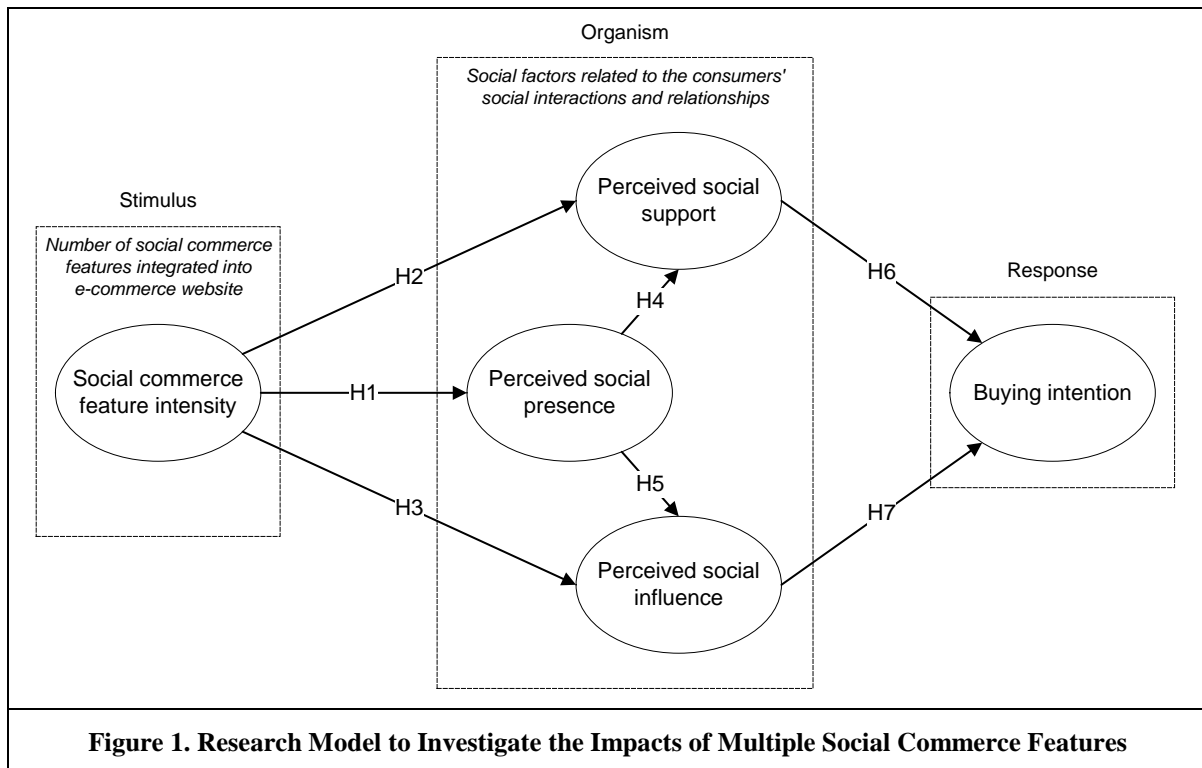
To contribute to a better understanding of the design of social commerce initiatives, we propose a research model, which allows to investigate how the intensity of social commerce features influences the consumers' buying behavior with respect to the consumers' perception of social factors. The research model is based on the S-O-R paradigm, which allows us to establish a theoretically grounded link between the intensity of social commerce features, the consumers' perception of social factors, and the consumers' buying behavior.

In our research model, the stimulus is conceptualized as the *intensity of social commerce features*, which represents the number of social commerce features integrated into an e-commerce website. As described in section 2, social commerce features are readily usable social media applications that are integrated into a website and that promote social interactions and exchanges among consumers. Through the use of this construct, this study aims to investigate what effect multiple social commerce features integrated into an e-commerce website can have on the consumers' buying behavior through various social factors. Investigating the impact of multiple social commerce features is an important aspect as research indicates that social commerce initiatives can be more effective if they use multiple social commerce features (Curty and Zhang 2013; Huang and Benyoucef 2013a; Huang and Benyoucef 2013b; Zhang et al. 2014).

Referring to the organism (i.e., the affective and cognitive states), our research model uses the three social factors social presence, social support, and social influence. We decided to focus on these three social factors for the following reasons: first, all factors are justified by well-established theories, which have been identified as relevant in the context of social commerce. Second, all factors have been confirmed to represent important determinants in the consumers' buying behavior. Third, literature provides indications that social commerce features can have an impact on these factors. In our research model, the social factors are labeled as *perceived social presence*, *perceived social support*, and *perceived social influence* to illustrate that we intend to investigate how these factors are perceived by consumers.

To represent the response (i.e., the consumers' buying behavior), our research model uses the factor *buying intention* as outcome variable. Predicting individuals' behaviors through intentions is common practice in

literature and grounded on well-established theories such as the TRA, the TPB, or the TAM (Gefen et al. 2003; Pavlou and Fygenson 2006). In the following, we develop the hypotheses guiding the evaluation of how the intensity of social commerce features influences the consumers' buying intention through the three social factors. Figure 1 depicts the structure of our research model.



Effects of Social Commerce Feature Intensity on Social Factors

We assume that the intensity of social commerce features positively influences the perception of the factors social presence, social support, and social influence. As noted in section 2, incorporating social cues (such as socially rich texts, photos, or videos) into e-commerce websites is considered as an important means to overcome the impersonal and transaction-focused nature of online shopping environments. Social commerce features provide various means to incorporate social cues into e-commerce websites (Curty and Zhang 2013). For instance, rating and review tools enable consumers to share their opinions and experiences about products with other consumers (Mudambi et al. 2014). This consumer-generated content is then placed on the product pages of a commercial website. Research indicates that websites incorporating rating and review tools can convey a greater sense of human contact and thus increase the consumers' perception of social presence (Kumar and Benbasat 2006). Besides ratings and reviews, social commerce features can provide many other forms of socially rich design elements. Examples are postings generated through blogs or discussion forums, lists of favorite products created and shared through social wish lists, recent activities of customers displayed in activity feeds, numbers of shares and likes visualized through share and like buttons on product pages, or lists of customers with similar product preferences generated through social recommendation tools. As the examples illustrate, each social commerce feature provides a unique set of socially rich design elements that can be integrated into an e-commerce website. However, it is rational to argue that not all features will affect the consumers' perception of social presence in the same way. According to social presence theory, the level of social presence depends on how many different types of social cues a communication medium can convey (cf. section 2). As a greater number of social commerce features increases the potential range of social cues on a commercial website, it is likely that this results in a higher level of social presence. Hence, we hypothesize that:

H1: The intensity of social commerce features increases the perceived social presence.

Social support is considered as an important social value that consumers can perceive from social commerce websites (Liang et al. 2011). According to Liang et al. (2011), the role of social support on social commerce websites can be described as follows: when consumers perceive social support on a social commerce website (i.e., other consumers are caring about them and are providing helpful shopping information), it becomes natural that these consumers will also share their shopping experiences and advices to help other consumers. The effect can be traced back to social exchange theory, which argues that individuals reciprocate others' support when they derive benefits from the others (Blau 1964). Literature on social commerce indicates that the online social interactions between consumers, which are facilitated by social commerce features, can generate informational as well as emotional support (Hajli 2016; Hajli and Sims 2015; Li et al. 2014; Liang et al. 2011; Zhang et al. 2014). For instance, through rating and review tools, social recommendation tools, or discussion forums, consumers can exchange valuable shopping information which may help them to solve shopping-related problems, such as deciding which product should be purchased (Hajli and Sims 2015). Moreover, consumers can also use social commerce features to express their interests and feelings and thus address emotional concerns, such as caring, understanding, or empathy (Liang et al. 2011). Research further argues that social commerce features can provide consumers with a more personalized shopping experience as the content generated through social commerce features more effectively addresses the consumers' preferences and needs (Kumar and Benbasat 2006). Consequently, providing consumers with a more personalized shopping experience through the use of social commerce features can increase the likelihood that consumers believe that the company behind the commercial website cares about their interests, which can result in a higher level of social support (Zhang et al. 2014). As the examples indicate, increasing the number of social commerce features on an e-commerce website might broaden the path through which consumers can generate and receive social support. For instance, combining rating and review tools with like buttons enables consumers not only to exchange product knowledge (i.e., informational support), but also to express their emotions (i.e., emotional support) through the liking of products. Therefore, we hypothesize that:

H2: The intensity of social commerce features increases the perceived social support.

When consumers possess limited knowledge or perceive certain amounts of risk, it is likely that they will wait and observe the experiences of other consumers before making a purchase decision on an e-commerce website (Lee et al. 2006; Lee et al. 2011). Moreover, consumers are more likely to believe the information provided by other consumers than the information provided by the company operating the website (Chen and Xie 2008; Lee and Jin Ma 2012). By promoting consumers' social interactions and exchanges, social commerce features incorporate these aspects and thus are considered as an important instrument to generate social influence (Kim and Srivastava 2007). Probably the most prominent example in this context are rating and review tools (Amblee and Bui 2011). Evidence is given that rating and review tools can help consumers to better assess the quality of products and/or services (Benlian et al. 2012; Mudambi and Schuff 2010). When consumers rely on the information that is generated through these tools, the effect is then considered as a form of social influence – i.e., informational social influence, cf. section 2 (Amblee and Bui 2011; Lee et al. 2011). Further examples, which can also be considered as potential routes for informational social influence, are the number of likes on product pages generated through like buttons, consumers' recent activities generated through activity feeds, lists of consumers' favorite products generated through social wish lists, or product recommendations based on the preferences of similar customers generated through social recommendation tools. Social commerce features can also have the potential to generate normative social influence, which refers to the effect that people want to be liked and conform to the expectations of others (cf. section 2). For instance, share buttons typically enable consumers to share product-related content on their favorite social media platforms. In this context, normative social influence is then generated when consumers use this feature to demonstrate their interests and to conform to the expectations of by important others, such as their friends (Kwahk and Ge 2012). By putting the above-mentioned examples together, it can be argued that social commerce features have the potential to generate social influence in different ways. However, when comparing social commerce features such as rating and review tools with share and like buttons, it seems rational that the social influence generated through these features can not only vary in its form (i.e., informational/normative), but also in its effect size. Accordingly, when the intensity of social commerce features is increased, it is likely that the potential amount of social influence will also increase. Therefore, we hypothesize that:

H3: The intensity of social commerce features increases the perceived social influence.

Effects between Social Factors

In line with the literature, we consider social presence as a mediating factor that indirectly affects the consumers' buying intention through other behavior-related factors (Gefen and Straub 2003; Hassanein and Head 2005; Hassanein and Head 2007). In our context, the factors that are assumed to be affected by social presence are social support and social influence.

As illustrated in section 2, generating social support through an e-commerce website requires that the website provides consumers with messages that involve supportive emotions and/or supportive information. Research has shown that consumers perceive social support in the online environment especially on websites that incorporate social media functionalities, such as social networking sites, online community sites, or social commerce websites (Ballantine and Stephenson 2011; Huang et al. 2010; Liang et al. 2011). By using features that facilitate social interactions, these websites typically are able to provide more social cues and thus are associated with higher levels of social presence (Zhang et al. 2014; Zhu et al. 2010). Accordingly, it can be argued that when an e-commerce website conveys a sense of human warmth and sociability, it is likely that consumers will be more receptive to supportive messages. Therefore, we hypothesize that:

H4: Perceived social presence increases the perceived social support.

Note that we assume that social presence increases social support, while Zhang et al. (2014) suggest that social support increases social presence. The reason for the opposite causal pathway is that we conceptualize social presence as being a quality of the communication medium that reflects the amount of social cues that a medium conveys (cf. section 2). By referring to the social characteristics of a medium (in our context an e-commerce platform), we consider that social presence is independent from behavior-related factors, such as social support, as these factors do not change the characteristics of a medium. Our assumption is grounded on studies which confirmed that social presence acts as a mediating factor that affects other behavior-related factors, such as trust, perceived enjoyment, or perceived usefulness (Cyr et al. 2007; Gefen and Straub 2003; Hassanein and Head 2007). In contrast to our study, Zhang et al. (2014) conceptualize social presence as a variable that reflects the quality of the consumers' social interactions and relationships.

The link between social presence and social influence can be established through social impact theory. According to Latané (1981), social impact theory suggests that the amount of influence between an individual and other people can be determined through three social forces: the number of people that are present, how important these people are to the individual, and how close in space and time these people are to the individual. Referring to the first aspect, research has shown that the mere presence of other individuals in a retail store can lead to higher perceptions of social influence (Argo et al. 2005). Accordingly, when an e-commerce website visualizes social cues, such as profile pictures of other consumers, and thus conveys a sense of human warmth and sociability, it is likely that consumers will perceive a greater amount of social influence. Hence, we hypothesize:

H5: Perceived social presence increases the perceived social influence.

Effects of Social Factors on Consumers' Buying Intention

Considering the relationship between the organism and the response, this study assumes that perceptions of social support as well as social influence will positively affect the consumers' buying intention. In line with the literature, we do not link social presence to the consumers' buying intention as we consider social presence as a mediating factor that indirectly affects the buying intention through social support and social influence (Gefen and Straub 2003; Qiu and Benbasat 2005; Shen 2012). Moreover, indications are given that no significant relationship exists between these two factors (Animesh et al. 2011).

As described in section 2, social exchange theory proposes that individuals tend to reciprocate others' support when benefits are obtained. Consequently, when a consumer receives support from other consumers, he/she may feel obligated to return a similar favor (Crocker and Canevello 2008). In the service science context, research has shown that perceptions of social support can lead to higher levels of customer satisfaction and loyalty (Rosenbaum and Massiah 2007; Yi and Gong 2007). In addition, research on social commerce has demonstrated that when consumers perceive social support on a social commerce website, it is more likely that they will participate in commercial activities and share valuable shopping information with other consumers (Liang et al. 2011; Shin 2013; Zhang et al. 2014). Hence, it seems rational to argue

that consumers who perceive social support on an e-commerce website will have a stronger desire to purchase products on this website. Accordingly, we hypothesize:

H6: Perceived social support increases the consumers' buying intention.

As expressed in the Theory of Reasoned Action and the Theory of Planned Behavior, social influence represents an important factor that stimulates an individual's intention towards a certain behavior (cf. section 2). In the e-commerce and social commerce context, studies have shown that perceptions of social influence, for instance, generated through the expectations of others or through the information provided by other consumers, can significantly increase the consumers' buying intention (Kwahk and Ge 2012; Lee et al. 2006; Lee et al. 2011; Limayem et al. 2000; Pavlou and Fygenon 2006). As consumers, according to these studies, tend to base their buying decisions on the opinions of others, we hypothesize that:

H7: Perceived social influence increases the consumers' buying intention.

Research Methodology

To evaluate our research model and test the hypotheses, we designed an online experiment that consisted of browsing an e-commerce website, selecting, and buying a product. Building upon a controlled experimental setting allowed us to investigate and isolate the causal pathways that operate between the use of social commerce features, the perception of social factors, and the consumers' buying intention. In particular, we are able to examine how the intensity of the social commerce features provided on an e-commerce platform affects the perception of the social factors and the buying behavior.

Experimental Setting

The design of our experiment follows the concept of related studies, which explored the effects of various website features on the users' attitude towards the website using experiment-based surveys (Bregman and Karimov 2012; Cyr et al. 2009; Hassanein and Head 2007; Kumar and Benbasat 2006). As our experiment simulates the completion of a typical buying process on an e-commerce scenario, the task involves browsing an e-commerce website, selecting, and buying an appropriate product. We decided to conduct the experiment in a well-controlled environment in order to have measurements that are more accurate. We therefore conducted an online study in a laboratory setting in which we controlled the exogenous variables as much as possible by following a standardized procedure. The experiment uses a 1 x 3 between-subjects design, including one independent variable (the intensity of the social commerce features provided on the e-commerce website) with three levels of treatment. Using such a variable is a common practice in experimental studies and enables us to attribute differences in the groups directly to the increasing number of social commerce features (Bregman and Karimov 2012; Cyr et al. 2009; Hassanein and Head 2007; Kumar and Benbasat 2006). Moreover, we included various control variables to account for individual characteristics, which might influence the results. Particularly, we asked for the social media usage frequency and the online shopping frequency to evaluate if our results depend on how familiar the participants are with online shopping and social media technologies. Additionally, we included standard control variables such as age or gender. The e-commerce website that we provided consisted of three versions, which were used by disjoint groups of participants. The first version of the website did not contain any social commerce features and thus represented a zero level. We used this zero level to verify that the absence of social commerce features on an e-commerce website indeed has the lowest effects on the consumers' perception of social factors. The second version of the website incorporated a product rating and review tool, thus implementing a complex social commerce feature, which is widespread in practice and supposed to work effectively (Amblee and Bui 2011; Jabr and Zhiqiang 2014; Kumar and Benbasat 2006). Taking existing reference architectures for the design of social commerce platforms as a benchmark, such a setting corresponds to a medium social commerce feature intensity (Huang and Benyoucef 2013a). The third version of the website contained a set of diverse social commerce features consisting of rating and review tools, share and like buttons, social wish lists, social login buttons, and activity feeds with live notifications about recent product purchases, product reviews, etc. According to existing reference architectures, this setting implements a high intensity of social commerce features (Huang and Benyoucef 2013a). Figure 2 illustrates the realization of the various social commerce features. Note that the website has been created in German language as the study was conducted with participants from Germany, which we wanted to address in their mother tongue.

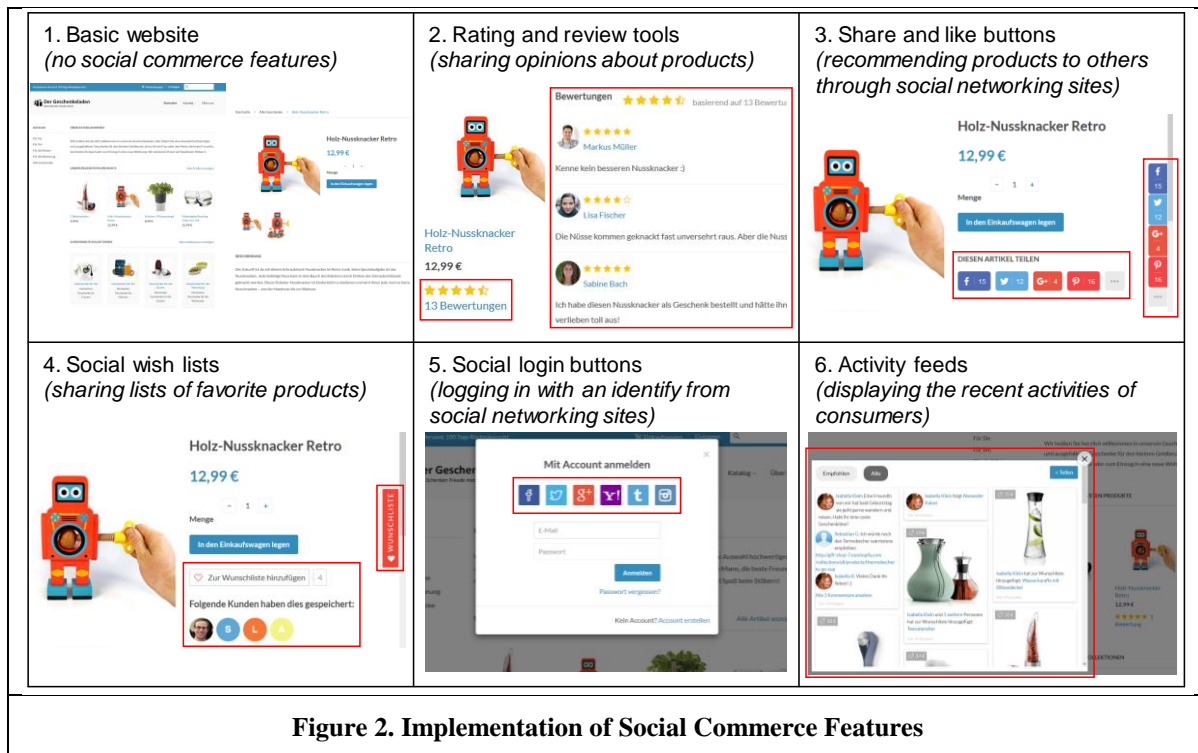


Figure 2. Implementation of Social Commerce Features

To ensure that the experiment reproduces a realistic scenario, we have created our e-commerce website using a professional web-based platform, which supports the rapid creation of online-shops and their extension with additional features by using an app store. We were hence able to set up a complete e-commerce website and configure it with various social commerce features as needed. To ensure that the participants are confronted with a shopping domain, in which they can act profoundly, but might nevertheless appreciate additional information about the offered goods, we created an online shop of a fictitious company that sells unbranded gift gadgets. Unbranded gift gadgets seemed to be an appropriate choice for several reasons (Lowry et al. 2008): first, their selection is at least partially based on social and emotional aspects; second, gift gadgets are associated with manageable financial risk; third, potential branding effects are avoided. We hence filled the store with several popular gift gadgets that we took over from real websites after acquiring permission. In addition, we generated all the information necessary to populate the various social commerce features with content. After implementing all these measures, we made sure that our e-commerce platform delivers an authentic shopping experience during a pilot test.

After completing the pilot test, the experiment was conducted online. To start the experiment, we asked the participants to open a webpage, which provided access both to the e-commerce platform as well as to the online survey. At the beginning, the participants were directed to a landing page, on which the task of the experiment was explained. Subsequently, relevant demographic information was inquired. Thereafter, the system randomly and automatically assigned the participants to one of three groups and gave them access to one of the three above-mentioned versions of the e-commerce platform. Equipped with an identical amount of virtual money, the participants were asked to select and buy a gift of their choice for a friend. Each group had access to exactly one of the three website versions. After completing the shopping task on the e-commerce platform, the participants were redirected to an online-survey, in which we asked for the perception of the various factors contained in the research model.

Measures

To measure the dependent variables, we used validated scales that we took over from literature with minor wording changes to adapt them to the context of our study. We measured perceived social support using the following questionnaire items (Ballantine and Stephenson 2011; Liang et al. 2011): *i) I think that other customers would make suggestions for gifts; ii) I have the impression that other customers would give me advice when selecting a gift; iii) I think that other customers would give me information about the gifts;*

iv) I think that other customers would show an interest in helping me to select a gift; v) I think that other customers would listen if I would report problems during the selection of a gift. Perceived social presence was measured as follows (Gefen and Straub 2003; Kumar and Benbasat 2006): *i) There is a sense of human contact in the website/in this online shop; ii) There is a sense of personalness in the website/in this online shop; iii) There is a sense of sociability in the website; iv) There is a sense of human warmth in the website/in this online shop.* Perceived social influence was measured using the items (Bearden et al. 1989; Mangleburg et al. 2004): *i) During the selection of a gift, I searched for information provided by other customers; ii) During the selection of a gift, I oriented myself according to the opinion of other customers; iii) It was important for me to know which gifts appealed to others; iv) I chose a gift which I assumed to be popular among other customers.* We measured the buying intention using the following questionnaire items (Brenngman and Karimov 2012; Pavlou 2003): *i) I would consider to buy gifts in this online shop; ii) If I need a gift in the future, I would visit this online shop; iii) If I need a gift in the future, I would probably buy it in this online shop.* All questionnaire items were operationalized using seven-point Likert scales.

To verify the manipulation of the independent variable, we followed guidelines to ask the participants directly if they experienced the manipulation (Straub et al. 2004). We asked a question in the form: “Did you notice <social commerce feature> on this website?” for each social commerce feature that played a role in our experiment. The answers were measured on three-point scales consisting of “no – yes – unsure”. Following advice from literature, we also examined the age, gender, social media usage frequency, and online shopping frequency of the participants (Mikalef et al. 2013; Pavlou and Fygenson 2006; Wakefield et al. 2010; Wells et al. 2011). We included these control variables into the study to account for individual characteristics of the participants, which might have a confounding effect on the results.

Participants

We decided to invite students of a large, public university in Germany as participants for the experiment. Although using students as substitutes for everyday users is sometimes put into question in literature, we deliberately chose to focus on this target group, as it is likely that student participants are highly familiar with online shopping and willing to try out new approaches. We hence invited students that participated in the current lecture courses of the faculty. We issued a call for participation using the online learning platform of the faculty and invited them personally during our lecture courses. Apart from a personal motivation, no incentive was given as we wanted to recruit intrinsically motivated individuals. The data collection took place from December 2015 until February 2016.

Data Analysis and Results

Overall, we received data from 162 participants. After sorting out incomplete responses, we retained 147 usable responses for data analyses. We decided to only include those responses in our final data set, where the participants did not wrongly assess which social commerce features were integrated in the employed online shop. As for example in Group 1, where no social commerce features were included, we eliminated all responses where participants stated that they perceived that any social commerce feature was included. In Group 3, where several social commerce features were included, we decided to eliminate all responses in which the participants did not realize the given social commerce features. Doing so allowed us to not only ensure that the participants’ engagement was credible but also that their assessment of the online shop was valid. This procedure left us with a total of 115 responses. Of them, 78 were male and 37 were female. All participants were graduate students from business administration, information systems, and computer science degree programs. On average, they were 24 years old.

We then analyzed our theoretical model using (PLS) with SmartPLS 3 (Ringle et al. 2015). Partial least squares structural equation modeling (SEM-PLS) is appropriate to test our model because the model is comparably complex and includes various control variables. In particular, PLS is often referred to have the advantage that it not only maximizes the explained variance of the endogenous variables, but that it also is more stable to non-normal distributed data than other (co-)variance based approaches (Chin 1998). With 115 participants, we deem the sample size to be sufficient for a robust PLS calculation considering the number of variables and paths in our model (Chin 1998; Hair et al. 2012).

Measurement Validation

In the first step of our analysis, we performed various tests to check the validity of our model. Specifically, we tested for common method bias since all measures were collected from the same questionnaire. We therefore conducted a Harman's one-factor test and ran an explorative factor analysis. The results show that multiple factors are present and that the most covariance explained by one factor is 40.65%. This indicates that a common method bias is not likely to be a serious concern to our study (Podsakoff et al. 2003).

	Mean	Standard deviation	Loading range	CR	AVE
Buying intention	4.62	1.40	0.908-0.954	0.948	0.860
Perceived social influence	3.23	1.72	0.826-0.899	0.923	0.749
Perceived social presence	2.98	1.44	0.892-0.956	0.957	0.848
Perceived social support	4.19	1.30	0.820-0.885	0.928	0.720

As we modelled all indicators of our model as reflective measures, we moreover determined the composite reliability (CR) as well as the convergent and discriminant validity to validate these measurements. In general, composite reliability should be higher than 0.70 (Werts et al. 1974). To further demonstrate adequate convergent and discriminant validity, the square root of the average variance extracted (AVE) should be higher than 0.707 and should also be higher than the correlations between the focal construct and other construct (Gefen et al. 2000). Furthermore, standardized item loadings should be greater than 0.70 and items should load more highly on their intended construct than on other constructs (Gefen et al. 2000). Table 1 summarizes the most important results of our measurement validation. As can be seen from there, the square roots of all AVE values are higher than 0.707 and exceed the correlations to the other constructs. Moreover, it can be seen that the composite reliability is consistently higher than 0.9. Table 2 depicts the reliability, validity, and summary statistics. It shows that the minimum item loading within the constructs is 0.826. Due to space limitations we were not able to depict the loadings to other constructs, however, the maximum item loading to another construct is 0.47. The results of the conducted measurement validation tests therefore all indicate that our model meets or even exceeds standards for validity and that our measures are valid and reliable (Straub et al. 2004).

	Buying intention	Int. of social commerce features	Perceived social influence	Perceived social presence	Perceived social support
Buying intention	0.927				
Int. of social commerce features	0.109	1.000			
Perceived social influence	0.285	0.286	0.866		
Perceived social presence	0.252	0.305	0.297	0.921	
Perceived social support	0.369	0.343	0.343	0.482	0.849

Hypotheses Testing

The results of our PLS model are shown in Figure 3. The intensity of social commerce features has a significant positive effect on perceived social support (.217, $p < .01$), perceived social presence (.305, $p < .001$), and perceived social influence (.215, $p < .05$). Accordingly, the results support our hypotheses H1-H3. Moreover, perceived social presence significantly influences perceived social support (.416, $p < .001$) as well as perceived social influence (.231, $p < .05$), thus lending support for hypotheses H4-H5. Finally, the buying intention is significantly positively influenced by perceived social support (.307, $p < .01$) and by perceived social influence (.180, $p < .05$), which supports hypotheses H6-H7.

Perceived social support and perceived social influence thereby explain 16.5% of the variance of the buying intention. Furthermore, the intensity of social commerce features combined with the perceived social presence explain 27.5% of the variance of the perceived social support and 13% of the perceived social influence, whereas the intensity of social commerce features alone determines 9.3% of the variance of the perceived social presence. In summary, the results support our hypotheses H1-H7. The results moreover indicate that our hypotheses are robust against individual characteristics such as the social media usage frequency, online shopping frequency, age, and gender of the participants since none of these control variables had a significant influence.

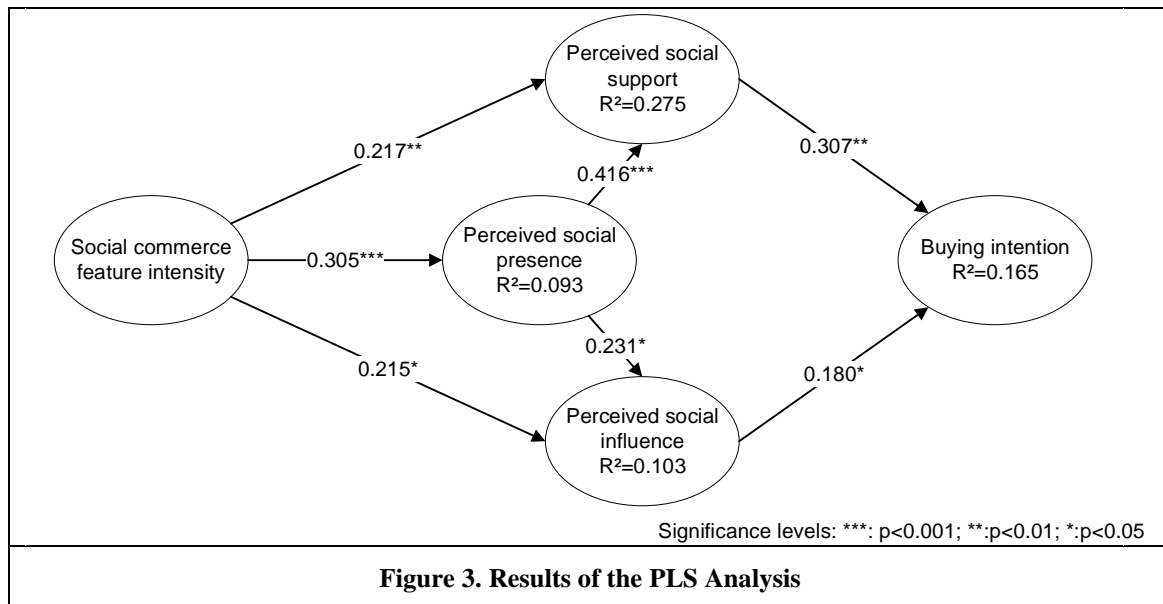


Figure 3. Results of the PLS Analysis

Discussion

In the following subsections, we discuss the key findings, implications, and limitations of our study.

Key Findings

Motivated by the need to support the design of social commerce initiatives, this study sought to investigate how the use of social commerce features influences the consumers' buying behavior with respect to the perception of social factors. Social factors, which are manipulated by the consumers' social interactions and exchanges, are considered as a key characteristic of social commerce (Liang et al. 2011; Wang and Zhang 2012). Accordingly, efforts have been made to explore how the consumers' perception of social factors, such as social presence, social support, and social influence, can influence the consumers' buying behavior. However, when considering the antecedents of social factors, little is known about the role of social commerce features since the causal relationship between social commerce features and social factors has not been investigated systematically yet. As it is sometimes assumed that social commerce initiatives can be made more effective if multiple social commerce features are used, our first aim was to explore how the intensity of the social commerce features present on an e-commerce website can impact the consumers' buying intention. Moreover, with respect to the social factors, our second aim was to examine through which causal pathways social commerce features can affect the consumers' buying intention. Accordingly, two key findings can be derived from the results of this study.

First, we could demonstrate that the intensity of social commerce features indeed can have a significant and positive impact on the perception of social factors. Hence, when multiple social commerce features are integrated into an e-commerce website, it is more likely that the website stimulates the consumers' perception of the three social factors social presence, social support, and social influence. Referring to social presence, the examined effect can be described as follows. An e-commerce website that provides multiple social commerce features, such as rating and review tools, share and like buttons, or activity feeds, conveys its consumers a higher sense of human warmth and sociability. Referring to social support, the effect describes

that the use of multiple social commerce features increases the likelihood that consumers perceive that the website supports them in their decision making and thus conveys a sense of caring. With respect to social influence, the examined effect can be understood as when an e-commerce website uses multiple social commerce features, it becomes more likely that consumers will perceive social influence either by considering the information that is provided by other consumers or by conforming to the positive expectations of others.

The second key finding is related to the social factors and the causal pathways through which the intensity of social commerce features can influence the consumers' buying intention. According to our results, we could demonstrate that social presence is an important factor that has a positive and significant influence on social support and social influence. This effect means that when a website conveys a sense of human warmth and sociability, it is more likely that consumers are stimulated to perceive the support and influence of other consumers. Moreover, we could demonstrate that both social support and social influence have a significantly positive effect on the consumers' buying intention. Consequently, when consumers perceive social support and social influence on an e-commerce website, it becomes more likely that they will purchase products on this website. When comparing these two social dimensions, our findings indicate that social support has a stronger and more significant effect on the consumers' buying intention than social influence.

Theoretical and Practical Implications

The findings of our study provide various implications for research and practice. From a theoretical standpoint, we could demonstrate that the mere integration of social commerce features into an e-commerce website can significantly influence the consumers' buying intention through various social factors. For this purpose, we developed a novel research model that is based on the S-O-R paradigm and that enabled us to establish a theoretically grounded link between the intensity of social commerce features, the consumers' perception of social factors, and the consumers' buying intention. Through the establishment of this link, we answer calls from researchers that suggest to directly link the impacts of IT artifacts to the study of perceptions and intentions (Benbasat and Zmud 2003; Kumar and Benbasat 2006). Referring to the independent variable of our research model, we could demonstrate how an important concern in the design of social commerce initiatives, namely the intensity of social commerce features, can be conceptualized and systematically investigated in a controlled experimental setting. Investigating the intensity of social commerce features is important given the fact that no clear statement can be derived whether an increased number of social commerce features might have positive or negative effects on the success of social commerce initiatives (Baethge et al. 2016; Curty and Zhang 2013; Huang and Benyoucef 2013a; Olbrich and Holsing 2011). According to our results, we made a first step to empirically confirm researchers' assumptions that social commerce initiatives can be more effective if multiple social commerce features are used (Huang and Benyoucef 2013a). With respect to the potential impacts of social commerce features, this study could show that the intensity of social commerce features has a significantly positive affect on the consumers' perception of social presence, social support, and social influence. So far, studies investigating the impacts of social commerce features on social factors have not taken into account how different numbers of social commerce features might influence these factors (Hajli and Sims 2015; Kumar and Benbasat 2006; Kwahk and Ge 2012; Liang et al. 2011; Zhang et al. 2014). By integrating three different social factors into one research model, our study moreover can contribute to a more complete understanding of how social commerce features can strengthen the perception of social factors on e-commerce platforms.

Considering the relationship between the three social factors, we could show that social presence can positively mediate the relationship between the intensity of social commerce features and the two social factors social support and social influence. The mediating role of social presence corresponds to prior findings in literature in which social presence has been reported to positively affect the consumers' perceptions of usefulness, enjoyment, and trust (Cyr et al. 2007; Gefen and Straub 2003; Hassanein and Head 2005). By demonstrating that social presence can also significantly influence social factors, such as social support and social influence, our study furthermore contributes to the research stream that investigates the impacts of social presence. Referring to the outcome variable of our research model, we could demonstrate that the two factors social support and social influence can have a significantly positive influence on the consumers' buying intention. Consequently, our results strengthen the initial findings reported in the social commerce literature that both factors can play an important role in shaping consumers' intentions towards commercial activities (Hajli and Sims 2015; Kim and Srivastava 2007; Kwahk and Ge 2012; Liang et al. 2011; Zhang et al. 2014).

Our study has implications for practice as well. According to our results, we can provide support for a key argument made by social commerce practitioners (Marsden 2010; Mulpuru et al. 2010), namely that social commerce features in combination can increase the success of a social commerce initiative. Specifically, we could show that the intensity of social commerce features can stimulate the consumers' perception of social factors, which in turn can increase the consumers' buying intention. As the social interactions and relationships between consumers are a key characteristic of social commerce, companies therefore should aim to strengthen these characteristics by integrating multiple social commerce features into their e-commerce websites. A promising instrument in this context is the reference model developed by Huang and Benyoucef (2013a), which illustrates how different social commerce features can be effectively combined. Referring to the social factors, companies should ensure that the selected social commerce features convey a sense of human warmth and sociability in order to enhance the consumers' perception of social presence. Moreover, companies should also ensure that these features enable consumers to generate supportive messages in order to increase the perception of social support as well as to enable consumers to consider the information and/or behavior of other consumers in order to increase the perception of social influence.

Limitations

The presented study has several noteworthy limitations. First, we deliberately decided to focus on social factors as these factors are considered as a key characteristic of social commerce (Liang et al. 2011; Wang and Zhang 2012). However, the intensity of social commerce features might also influence other factors that have not been taken into account in this study, such as utilitarian factors (e.g., perceived usefulness, perceived ease of use), hedonic factors (perceived enjoyment), relational factors (e.g., trust, commitment, satisfaction), or risk factors (e.g., privacy risk, financial risk) (Featherman and Hajli 2015; Grange and Benbasat 2010; Liang et al. 2011). Moreover, we decided to conduct a controlled experiment in order to achieve results with a high internal validity and to demonstrate the causal relations between the variables contained in our research model. Although we have taken care to simulate a realistic case, we had to make some reasonable but strict assumptions. As we could not make use of advanced control mechanisms such as eye tracking techniques, we decided to test the validity of our independent variable by directly asking the participants if they experienced the experimental manipulation. In order to advance the external validity of our findings, future studies are hence encouraged to complement our findings with field data (e.g., investigate the consumers' actual buying behavior). Moreover, students of a German university so far were the only participants in our experiment. We were hence not yet able to investigate cultural differences, which can have a significant impact in the e-commerce domain (Cyr 2008; Moon et al. 2008; Pavlou and Chai 2002). Moreover, by using a student sample, we were not able to claim that the reported effects are generalizable to other types of customers. Likewise, we cannot claim that the reported effects apply for social commerce scenarios in general, since we only focused on a fictitious company that sells unbranded gift gadgets. The participants were hence not familiar with the website and acted as first-time buyers. As social interactions and relationships typically develop over time, we recommend further investigating the relationship between social commerce features and the perception of social factors in longitudinal studies.

Conclusion

As an instrument to increase sales volumes by integrating social media applications into e-commerce platforms, social commerce is rapidly becoming popular in practice. Yet, the unique and characteristic effects, which social commerce features might have on the buying behavior, have remained largely unexplained. The results of the study presented in the paper at hand particularly highlight the importance of a profound understanding of the effects on the perception of social factors that result from the integration of social commerce features into e-commerce platforms. Lending support to initial findings from literature, the results of our study indicate that the usage of social commerce features can uniquely affect the perception of social factors, which in turn have a direct and positive impact on the consumers' buying behavior. Social commerce accordingly might indeed provide unique and innovative measures to stimulate the buying behavior of consumers in practice.

With the research model developed during our study, we provide a theoretical lens through which the effects of social commerce features on the perception of social factors and the causal relationship between the perceived social factors and the consumers' buying intention can be analyzed systematically. Interestingly, our findings indicate that social commerce features might rather influence the buying behavior through the

provided social support than through the generated social influence. This observation might have consequences for the design and use of social commerce features such as popups with activity notifications, which inform consumers about the current buying behavior of others as an emotional appeal to decide for a certain product. According to the results of our study, the influence of such features on the buying behavior might be somewhat limited compared to the effect of features, which aim at influencing the buying decision by increasing the perceived social support. In addition, the results of our study suggest that the perception of social factors, which results from the adoption and use of social commerce features, can be positively influenced by increasing the intensity of the social commerce features on an e-commerce platform. In general, our findings corroborate hypotheses that social commerce features might indeed better work in concert (Huang and Benyoucef 2013a). Despite the existing limitations, in the light of which our results certainly have to be interpreted, our study hence provides novel insights that inform the design and implementation phases of social commerce initiatives.

We are convinced that studying the unique effects of social commerce features on the social factors that are perceived when acting as a consumer on e-commerce platforms provides a rich avenue for future research. In particular, future research should determine in how far the findings presented in this paper are robust with respect to consumer attributes (e.g., age, culture, etc.) and shopping scenarios (e.g., different types of products). In addition, it is conceivable to make use of advanced control mechanisms such as cursor or eye tracking techniques to verify if study participants indeed realize or use certain social commerce features to make a buying decision. To a considerable extent, the impact of a social commerce feature will moreover depend on the quality of its implementation, which – from a consumers' point of view – is reflected in factors such as the perceived usability, usefulness, or ease of use. Finally yet importantly, future studies hence should also investigate the impact of social commerce features and their possibly alternative implementations on the perception of additional factors, which we did not examine so far. With the presented research model and the developed modular technological infrastructure to support further experiments, we provide a starting point for such endeavors.

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